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Dalguise House Large-Scale Residential Development, Monkstown, Co. Dublin

Appropriate Assessment Screening Report

July 2023

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Dalguise House Large-Scale Residential Development

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TABLE OF CONTENTS

1. INTRODUCTION

1.1 Introduction

Roughan & O'Donovan (ROD) was appointed by GEDV Monkstown Owner Ltd ("the Applicant") to prepare an Appropriate Assessment (AA) Screening Report in respect of the proposed Dalguise House Large-scale Residential Development (LRD) ("the proposed development") in Monkstown, Co. Dublin.

The AA Screening Report is intended to determine whether or not the proposed development, either individually or in combination with other plans or projects, is likely to have a significant effect on areas designated as being of European importance for nature conservation ("European sites"), thereby enabling Dún Laoghaire-Rathdown County Council, as the competent authority in this case, to fulfil its obligations under Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora ("the Habitats Directive").

This document comprises the AA Screening Report in respect of the proposed development and was prepared by ROD on behalf of the Applicant and in accordance with the requirements of the Habitats Directive, as transposed into Irish law by Part XAB of the Planning and Development Act, 2000 (as amended) ("the Planning and Development Act"). The aim of this AA Screening Report is to inform and assist the competent authority in determining whether or not the proposed development, either individually or in combination with other plans and projects, has the potential to significantly affect one or more European sites, in view of their Conservation Objectives.

It is the considered opinion of ROD, as the author of this AA Screening Report, that the proposed development, either individually or in combination with other plans or projects, in view of best scientific knowledge, has the potential to significantly affect three European sites, namely the South Dublin Bay and River Tolka Estuary SPA, the South Dublin Bay SAC and the Dalkey Islands SPA, in view of their Conservation Objectives. Therefore, AA is required in respect of the proposed development.

1.2 Competent Experts

This AA Screening Report was prepared by Patrick O'Shea and Rachel Heaphy. Patrick is a Principal Ecologist with over ten years' experience in ecological assessment. He holds a degree in Botany from Trinity College Dublin and an MSc in Ecological Management and Conservation Biology from Queen's University Belfast. Patrick is a Full member of the Chartered Institute of Ecological and Environmental Management (CIEEM). Rachel is an Ecologist with two years' experience in ecological assessment and holds a BSc (Hons) in Zoology from University College Cork and an MRes degree (with distinction) from the University of Roehampton. Rachel is a Qualifying member of the Chartered Institute of Ecological and Environmental Management (QualCIEEM).

The freshwater macroinvertebrate surveys, chemical analysis and data summary report was undertaken and prepared by Dr Bláithín Ní Ainín, a Senior Freshwater Ecologist with APEM Ltd.

1.3 Legislative Context

Council Directive 92/43/EEC of the 21st May 1992 on the conservation of natural habitats of wild fauna and flora ("the Habitats Directive") and Directive 2009/147/EC of the European Parliament and of the Council of the 30th November 2009 on the conservation of wild birds ("the Birds Directive") list habitats and species which are, in a European context, important for conservation and in need of protection. This protection is afforded in part through the designation of sites which support significant examples of habitats or populations of species. ("European sites"). Sites designated for wild birds are termed "Special Protection Areas" (SPAs) and sites designated for natural habitat types or other species are termed "Special Areas of Conservation" (SACs). The complete network of European sites is referred to as "Natura 2000".

In order to ensure the protection of European sites in the context of land use planning and development, Article 6(3) of the Habitats Directive provides for the assessment of the implications of plans and projects for European sites, as follows:

> *"Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site[1] and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."*

In Case *C-323/17* [§34*], People Over Wind*, the Court of Justice of the European Union ('the CJEU') referred to the nature of the test to be applied in making a screening determination as follows:

> "[...] it is settled case-law that Article 6(3) of the Habitats Directive makes the requirement for an appropriate assessment of the implications of a plan or project conditional on there being a probability or a risk that the plan or project in question will have a significant effect on the site concerned. In the light, in particular, of the precautionary principle, such a risk exists if it cannot be excluded on the basis of objective information that the plan or project will have a significant effect on the site concerned (judgment of 26 May 2011, Commission v Belgium, C-538/09, EU:C:2011:349, paragraph 39 and the case-law cited). The assessment of that risk must be made in the light inter alia of the characteristics and specific environmental conditions of the site concerned by such a plan or project (see, to that effect, judgment of 21 July 2016, Orleans and Others, C-387/15 and C-388/15, EU:C:2016:583, paragraph 45 and the case-law cited)."

Further clarification on the use of mitigation measures was provided in *Eco Advocacy*[2], where the CJEU ruled that where constituent elements are incorporated into the design of a project as standard features required for all projects of that nature and not with the aim of reducing negative effects of a project on European sites, those features cannot be regarded as indicative of likely significant effects on European sites concerned and should not be interpreted as mitigation measures intended to avoid or reduce harmful effects of a plan or project on those European sites. The judgement stated that:

"*In the light of the foregoing considerations, the answer to the fourth question is that Article 6(3) of the Directive 92/43 must be interpreted as meaning that, in order to*

[1] Including, where applicable, 'sites'.
[2] Eco Advocacy v. An Bord Pleanála [2023] C-721/21

determine whether it is necessary to carry out an appropriate assessment of the implications of a plan or project for a site, account may be taken of the features of that plan or project which involve the removal of contaminants and which therefore may have the effect of reducing harmful effects of the plan or project on that site, where those features have been incorporated into that plan or project as standard features, inherent in such a plan or project, irrespective of any effect on the site."

Article 7 of the Habitats Directive provides that the provisions of, *inter alia*, Article 6(3) are to apply to SPAs under Directive 2009/147/EC (the "Birds Directive").

As stated, the requirements arising out of Article 6(3) of the Habitats Directive are transposed into Irish law by Part XAB of the 2000 Act and by the European Communities (Birds and Natural Habitats) Regulations 2011 as amended[3] (S.I. No.477 of 2011) (the Habitats Regulations), including Part 5 thereof.

The determination of whether or not a plan or project requires AA is referred to as "Stage 1" or "AA Screening". A "Stage 1" or "AA Screening" is completed to determine whether or not the proposed development, either individually or in combination with other plans or projects, in view of best scientific knowledge, is likely to have a significant effect on areas designated as being of European importance for nature conservation ("European sites"), thereby enabling the Applicant, to fulfil its obligations under Article 6(3) of the Habitats Directive.

Article 6(3) of the Habitats Directive specifies that AA must be undertaken by the "competent national authorities". In Ireland, the "competent authority" is the relevant planning authority for each plan or project, e.g. the local authority or An Bord Pleanála. Consequently, the responsibility for carrying out AA Screening lies solely with the competent authority. In that respect, the AA Screening Report is not in itself an AA Screening Assessment but provides the competent authority with the information it needs in order to carry out its AA Screening.

1.4 Screening Methodology

At this stage of the process, the AA Screening Report assesses the potential effects from the plan or project on the European sites within the zone of influence and evaluates them in view of the sites' Conservation Objectives.
This AA Screening Report has had regard inter alia to the following matters[4]:

- The threshold test is that an appropriate assessment will be required if the proposed development is likely *to have a significant effect* on (a) European site(s) either individually or in combination with other plans or protects.
- It is not necessary, in order to trigger the requirement to proceed to stage 2 AA that the proposed development will '*definitely*' have significant effects on the protected site, but such a requirement will arise if it is a '*mere probability*' that such an effect exists. The requirement to carry out an AA will be satisfied if there is a 'probability *or a risk*' that the proposed development will have '*significant effects*' on (a) European site(s).

[3] Including inter alia S.I. 290 of 2013; SI 499 of 2013; SI 355 of 2015; the Planning, Heritage and Broadcasting (Amendment) Act 2021, Chapter 4; SI 293 of 2021.
[4] See Eoin Kelly v. An Bord Pleanála [2019] IEHC 84; Kelly v. An Bord Pleanála [2014] IEHC 400; Connelly v. An Bord Pleanála [2018] IESC 31; [2018] ILRM 453.

- Consequent upon the application of the precautionary principle, such a '*risk*' will be found to exist if '*it cannot be excluded on the basis of objective information'* that the particular proposed development '*will have significant effects*' on (a) European site(s).
- An AA will be required if, on the basis of objective information, a '*significant effect*' on a European site 'cannot be *excluded'.* An AA will not be required if, on the basis of objective information, a '*significant effect*' on (a) European site(s) '*can be excluded*'.
- In the case of '*doubt as to the absence of significant effects*' an AA must be carried out.
- The requirement to conduct an AA will arise where, at the screening stage, it is ascertained that the particular development is '*capable of having any effect*' (albeit this must be any '*significant effect*') on (a) European site(s).
- The '*possibility*' of there being a '*significant effect*' on (a) European site(s) will give rise to a requirement to carry out an AA for the purposes of Article 6(3). There is no need to '*establish*' such an effect and it is merely necessary to determine that there '*may be*' such an effect.
- In order to meet the threshold of likelihood of significant effect, the word '*likely'* in Article 6(3) means less than the balance of probabilities. The test does not require any *'hard and fast evidence' that such a significant effect was likely.* It merely has to be shown that there is a '*possibility'* that this significant effect is likely.
- The assessment of whether there is a risk of '*significant effect'* on the European site must be made in light, inter *alia*, of the '*characteristics and specific environmental conditions of the site concerned*' by the relevant plan or project.
- Plans or projects or applications for developments which have *no appreciable effect* on European sites are excluded from the requirement to proceed to AA. If all applications for permission for proposed developments capable of having *any effect whatsoever* on such sites were to be caught by Article 6(3) *activities on or near the site would risk being impossible by reason of legislative overkill.*

While the threshold at the screening stage of Article 6(3) is very low nonetheless it is a threshold which must be met before it is necessary to proceed to the stage 2 AA. Accordingly, best practice in undertaking AA Screening involves five steps as follows:

(1) The first step involves gathering the information and data necessary to carry out a screening assessment. These include, but are not limited to, the details of all phases of the plan or project, environmental data pertaining to the area in which the plan or project is located, e.g. rare or protected habitats and species present or likely to be present, and the details of the European sites within the zone of influence.

(2) The second step involves examining the information gathered in the first step and a scientific analysis of the potential impacts of the project on the receiving environment, particularly the European sites in the zone of influence.

(3) The third step evaluates the impacts analysed in the second step against the Conservation Objectives of the relevant European sites, thereby determining whether or not those impacts constitute "likely significant effects", within the meaning of Article 6(3) of the Habitats Directive.

(4) The fourth step involves considering the potential for likely significant effects to arise from the combination of the impacts of the plan or project with those of other plans or projects. If it is determined in the third step that Stage 2 (AA) is

required, consideration of potential cumulative impacts may be deferred to that stage.

(5) The last step involves the issuing of a statement of the determination of the AA Screening. Notwithstanding the recommendation made in the AA Screening Report, the responsibility for completing this step lies solely with the competent authority.

The following guidance documents informed the assessment methodology:

- EC (2021) *Assessment of plans and projects in relation to Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*. Environment Directorate-General of the European Commission.
- EC (2018) *Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*. European Commission, Brussels.
- DEHLG (2010) *Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities*. Department of the Environment, Heritage and Local Government, Dublin.
- NPWS (2010) *Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities*. Circular Letter NPWS 1/10 & PSSP 2/10. National Parks & Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin.
- OPR (2021) *Practice Note PN01: Appropriate Assessment Screening for Development Management.* Office of the Planning Regulator.

1.5 Ecological Assessment

In order to fully inform this AA Screening Report in respect of the proposed development, it was necessary to establish the baseline ecological conditions in the receiving environment, particularly with regard to European sites. This was achieved by undertaking a number of desktop studies and field surveys and engaging in consultations with the relevant stakeholders, including the National Parks & Wildlife Service (NPWS) and Inland Fisheries Ireland (IFI).

1.5.1 Desk Study

During the desk study, the statutory consultee, the National Parks & Wildlife Service (NPWS), provided data on designations of sites, habitats and species of conservation interest. This included reporting pursuant to Article 17 of the Habitats Directive[5] (NPWS, 2019a, b, c) and Article 12 of the Birds Directive[6] (Eionet, 2018), as well as the Site Synopses and Conservation Objectives for the relevant European sites.

The desk study involved a thorough review of existing information relating to ecology in the vicinity of the proposed development and in the surrounding area. A number of web-based geographic information systems (GISs) were used to obtain information relating to the natural environment surrounding the proposed development. These included the NPWS *Map Viewer* (NPWS, 2022), which provided information on the locations of protected sites, the National Biodiversity Data Centre's *Biodiversity Maps* (NBDC, 2022), which provided recent and historic records of rare and protected species in the area.

[5] Under Article 17, to report to the European Commission every six years on their status and on the implementation of the measures taken under the Directive.

[6] Every three years, Member States of the European Union are required by Article 12 of the Birds Directive to report on implementation of the Directive. The most recent reporting available is for the period 2008-2012.

The documents prepared for the previous planning application (Planning Ref.: ABP30694920) were also reviewed as part of the desk study. These documents include, but are not limited to, the following:

- *Ecological Impact Statement for residential development Dalguise House, Monkstown, Co. Dublin* (OPENFIELD Ecology Services, dated March 2020)
- *Screening Report for Appropriate Assessment of residential development on lands at Dalguise House, Monkstown, Co. Dublin* (OPENFIELD Ecology Services, dated March 2020)
- *Waterfowl and Shorebird Survey Results 2020/21 at Lands at Dalguise House, Monkstown, Co. Dublin* (Enviroguide Consulting, dated May 2021)

As with all desk studies, the data considered were only as good as the data supplied by the recorders and recording schemes. The recording schemes provide disclaimers in relation to the quality and quantity of the data they provide, and these were considered when examining outputs of the desk study.

1.5.2 Field Surveys

Field surveys were conducted within the study area by Patrick O'Shea and Rachel Heaphy, who were assisted by other members of the Roughan & O'Donovan Environmental team between June 2021 and March 2022.

The surveys adhered to the following guidelines:

- *Ecological Survey Techniques for Protected Flora and Fauna during the Planning of National Road Schemes* (NRA, 2008).
- *Guidelines for Assessment of Ecological Impacts of National Road Schemes* (NRA, 2009).
- *Best Practice Guidance for Habitat Survey and Mapping* (Smith et al., 2011).

A freshwater macroinvertebrate survey and chemical analysis was undertaken by Dr Bláithín Ní Ainín, of APEM Ireland, on the 12th of October 2021 at two locations along the Stradbrook Stream, one upstream and one downstream of the proposed development. The macroinvertebrate sampling was conducted according to the standard methodology, *Water Quality in Ireland: 2001 – 2003* (Toner et al., 2005). The data summary report, also prepared by Dr Bláithín Ní Ainín, is provided in Appendix C to this AA Screening Report.

The surveys with relevance to this AA Screening Report are described below.

Habitats

The habitats in the vicinity of the proposed development were surveyed following the Heritage Council's *Best Practice Guidance for Habitat Survey and Mapping* (Smith et al., 2011). Habitats were classified in accordance with *A Guide to Habitats in Ireland* (Fossitt, 2000) and conformity to Annex I-type habitats was evaluated using the *Interpretation Manual of European Union Habitats – EUR28* (EC, 2013). Smith et al. (2011) states that the optimal time of year for habitat surveys is April to September, inclusive, as this is the growing season for most plants. The walkover surveys were undertaken in June and July 2021 i.e. within the optimal season for habitats.

Birds

Breeding bird surveys were carried out following *Countryside Bird Survey Manual (CBS)* (Birdwatch Ireland, 2012) and all species recorded were classified according to British Trust for Ornithology (BTO) species codes. Evidence of breeding was also

collected, noting 'possible', 'probable' and 'confirmed' breeding, in line with *Bird Atlas 2007-2011* (BTO, 2011). The breeding bird survey was undertaken in June and July 2021 i.e. within the optimal season for breeding birds.

Invasive Alien Plant Species

As part of the habitat survey, the presence of invasive alien species was considered. The Ecologists had particular regard for invasive species subject to restrictions under Regulation 49 of the Habitats Regulations, including Himalayan Balsam (*Impatiens glandulifera*), Giant-rhubarb (*Gunnera* sp.), Japanese Knotweed (*Reynoutria japonica*), Bohemian Knotweed (*Reynoutria* × *bohemica*) and Rhododendron (*Rhododendron ponticum*). The surveys were carried out in June and July 2021, the optimum survey period.

Water Quality

The macroinvertebrate and water sampling were undertaken on the 12th October 2021. The macroinvertebrate sampling followed the standard methodology used by the Environmental Protection Agency (EPA) as described in Toner *et al.,* 2005. The survey was carried out during the optimum survey period (June-October) when flows are likely to be relatively low and temperatures highest. During the macroinvertebrate and water chemical survey, each sampling point was assigned an EPA Q-Value and a Water Framework Directive (WFD) Ecological Status (Table 1.1). The results from both sampling points indicate that the water quality is poor, which is illustrated by the chemical analysis, freshwater macroinvertebrate species assemblage and the presence of sewage fungus.

Table 1.1 Water Quality Results

Watercourse	Q-Value	WFD Ecological Status
Stradbrook Stream (Upstream)	Q3	Poor
Stradbrook Stream (Downstream)	Q3	Poor

1.5.3 Assessment

The ecological baseline which was established by the desk study described above was used to inform the assessment of the potential ecological effects arising from the proposed development, particularly with regard to European sites. Any assumptions that were made in view of gaps in the ecological data were made in accordance with the Precautionary Principle.

2. DESCRIPTION OF THE PROPOSED DEVELOPMENT

2.1 Overview

The Dalguise House Large-scale Residential Development is situated on the 3.58-hectare site of Dalguise House, Monkstown, Co. Dublin. The proposed development includes the demolition of a number of structures on site and the development of 493 no. residential units, 486 no. of which are new build and 7 no. which will be provided in existing buildings. Access to the proposed development will be provided at two points, one at the existing entrance to Dalguise House and a second through Purbeck, which will involve the construction of a new bridge. The development includes the facilitation of future pedestrian and cycle access with adjoining developments including Arundel, Richmond Park and the former Cheshire Home site, subject to agreement. A full description of the proposed development is provided in Appendix A and drawings for proposed development are presented in Appendix B.

The proposed development is not directly connected with or necessary for the management of any Natura 2000 site.

2.2 Location

The proposed development site is located approximately 300 m to the west of Monkstown Village and 240 m south of Seapoint Beach. The site is 3.58 ha in area, predominantly rectangular in shape and until recently was in use as a private dwelling.

2.3 Receiving Natural Environment

The proposed development site is bordered and divided by a network of hedgerows and mature treelines and linear woodlands. It is bounded to the south, east and west by residential developments and to the north by the Stradbrook Stream, residential developments and Monkstown Road. The surrounding area is dominated by suburban residential development. It is within the catchment of the Stradbrook Stream, which flows east-west and eventually discharges into Dublin Bay. The Stradbrook Stream is characterised by artificial embankments along most of its length. The stream is highly modified and is culverted until it reaches its outfall at the west pier in Dún Laoghaire. The EPA have no monitoring points and it is not assessed under the Water Framework Directive.

The site contains good quality habitat for bats and bird species. An established heronry exists in the mature trees along the western site boundary. Grey Heron (*Ardea cinerea*) was recorded on the site on most of the field surveys.

A total of six Fossitt (2000) habitats were identified in the proposed development site. These habitats are listed below.

- Buildings and Artificial Surfaces (BL3)
- Improved Amenity Grassland (GA2)
- Hedgerows (WL1)
- Treelines (WL2)
- Mixed Broadleaved/Conifer Woodland (WD2)
- Scattered Trees and Parkland (WD5)

- Exposed Sand, Gravel or Till (ED1)
- Eroding/Upland Rivers (FW1)

Plate 2.1 Amenity Grassland on the northern boundary of the site, surrounded by tall mature trees

Ringsend Wastewater Treatment Plant, built in 2005, currently discharges treated wastewater into the Lower Liffey Estuary via an outfall approximately 1 km from the facility. It is currently operating at levels in excess of its intended design capacity and is therefore, not in compliance with the European Union's Urban Wastewater Treatment Directive. Irish Water have begun to upgrade the current infrastructure to achieve compliance with the Urban Wastewater Treatment Directive (91/271/EEC), with aims to have these works completed in 2025. This upgrade will provide additional secondary treatment capacity with nutrient reduction, additional capacity and nutrient reduction to the 24 existing secondary tanks, a new phosphorus recovery process and expansion of the plant's sludge treatment facilities.

Table 2.1 EPA Water Quality Results

Waterbody	Coastal Waterbody WFD 2013 - 2018	Coastal Waterbodies Risk	Transitional Waterbody WFD 2013 - 2018	Transitional Waterbodies Risk
Dublin Bay	Good	Not at Risk	N/A	N/A
Tolka Estuary	N/A	N/A	Moderate	At Risk
North Bull Island	N/A	N/A	Not assigned	Review
Liffey Estuary Lower	N/A	N/A	Good	Review
Liffey Estuary Upper	N/A	N/A	Good	Review

2.4 Likely Effects on the Natural Environment

A number of elements of the proposed development are considered likely to give rise to environmental and ecological impacts. Potential risks to the natural environment arising from the proposed development are as follows:

- Water quality impacts arising from both the construction and the operation of the proposed development have the potential to affect habitats and species directly and indirectly. Accidental pollution events could result in sediment and pollutants entering the Stradbrook Stream which discharges into Dublin Bay.
- Increased foul water supply and storm water overflow incidences at Ringsend WwTP as a result of the proposed development could also result in increased untreated waste water entering Dublin Bay. The potential effects of water quality impacts include habitat degradation and eutrophication.
- Semi-natural and artificial habitats within the footprint of the proposed development which support a variety of flora and fauna will be lost or fragmented during the construction of the proposed development.
- Disturbance will occur during construction and operation of the proposed development as a result of noise, lighting and vibration. During the construction phase, the construction of the apartment buildings, bridge and roads as well as the demolition of existing structures could lead to noise and vibration impacts which could cause disturbance to both birds and other wildlife.

3. IDENTIFICATION OF LIKELY SIGNIFICANT EFFECTS

3.1 Establishing the Likely Zone of Influence

Section 3.2.3 of DEHLG (2010) outlines the procedure for selecting the European sites to be considered in AA. It states that European sites potentially affected should be identified and listed, bearing in mind the potential for direct, indirect and cumulative effects. It also states that the specific approach in each case is likely to differ depending on the scale and likely effects of the plan or project. However, it advises that the following sites should generally be included:

- All European sites within or immediately adjacent to the plan or project area;
- All European sites within the zone of influence of the plan or project; and
- In accordance with the Precautionary Principle, all European sites for which there is doubt as to whether or not they might be significantly affected.

The "Zone of Influence" of a project is the geographic extent over which significant ecological effects are likely to occur. In the case of projects, the guidance recognises that the zone of influence must be established on a case-by-case basis using the Source-Pathway-Receptor Model (OPR, 2021). A project may only lead to significant effects on the integrity of the European site where all three elements of Source-Pathway-Receptor are linked. In the absence of one element of this model, likely significant effects can be screened out with confidence. The assessment should make reference to the following key variables:

- The nature, size and location of the project;
- The nature of the impacts which may arise from the project;
- The sensitivities of the ecological receptors; and,
- The potential for in-combination effects.

For example, in the case of a project that could affect a watercourse, it may be necessary to include the entire upstream and/or downstream catchment in order to capture all European sites with water-dependent features of interest.

Having regard to the above key variables, the zone of influence was defined as:

- the proposed development boundary plus a 500 m buffer
- The downstream extent of the Stradbrook Stream
- The Liffey Estuary Lower Transitional Waterbody
- The coastal waterbodies of Dublin Bay from Ireland's Eye to Dalkey Island.

A geographical representation of the zone of influence was produced in ArcGIS 10.5.1 using the Project boundary and publicly available Ordnance Survey Ireland maps. This was used in combination with NPWS shapefiles to identify the boundaries of European sites in relation to the zone of influence (Figure 3.1).

This area was defined as the zone of influence and extends to the maximum distance at which potential likely significant effects could occur including via hydrological connections i.e. foul water and surface water pathways. In addition, beyond this limit, noise and visual disturbance to birds will not occur.

Seabirds and marine mammals which are Qualifying Interests of European sites beyond the zone of influence, are highly mobile and have the potential to occur within the zone of influence while feeding or on migration. Bottlenose Dolphin, for example,

is a Qualifying Interest of five European sites on the west coast of Ireland, however this species is found all around the coasts of Ireland. The potential for ex-situ likely significant effects on these species groups is dealt with regards to sea birds and marine mammals (Harbour Porpoise) in Tables 3.2 and 3.8 of this document.

A geographical representation of the ZoI was produced in ArcGIS 10.5.1 using the proposed development boundary and publicly available Ordnance Survey Ireland (OSi) maps. This was used in combination with NPWS shapefiles to identify the boundaries of European sites in relation to the ZoI (Figure 3.1).

It was determined that twelve European sites occur within the ZoI. Table 3.1 describes how these sites are connected to the proposed development. Detailed descriptions of these sites are given in Section 3.2.

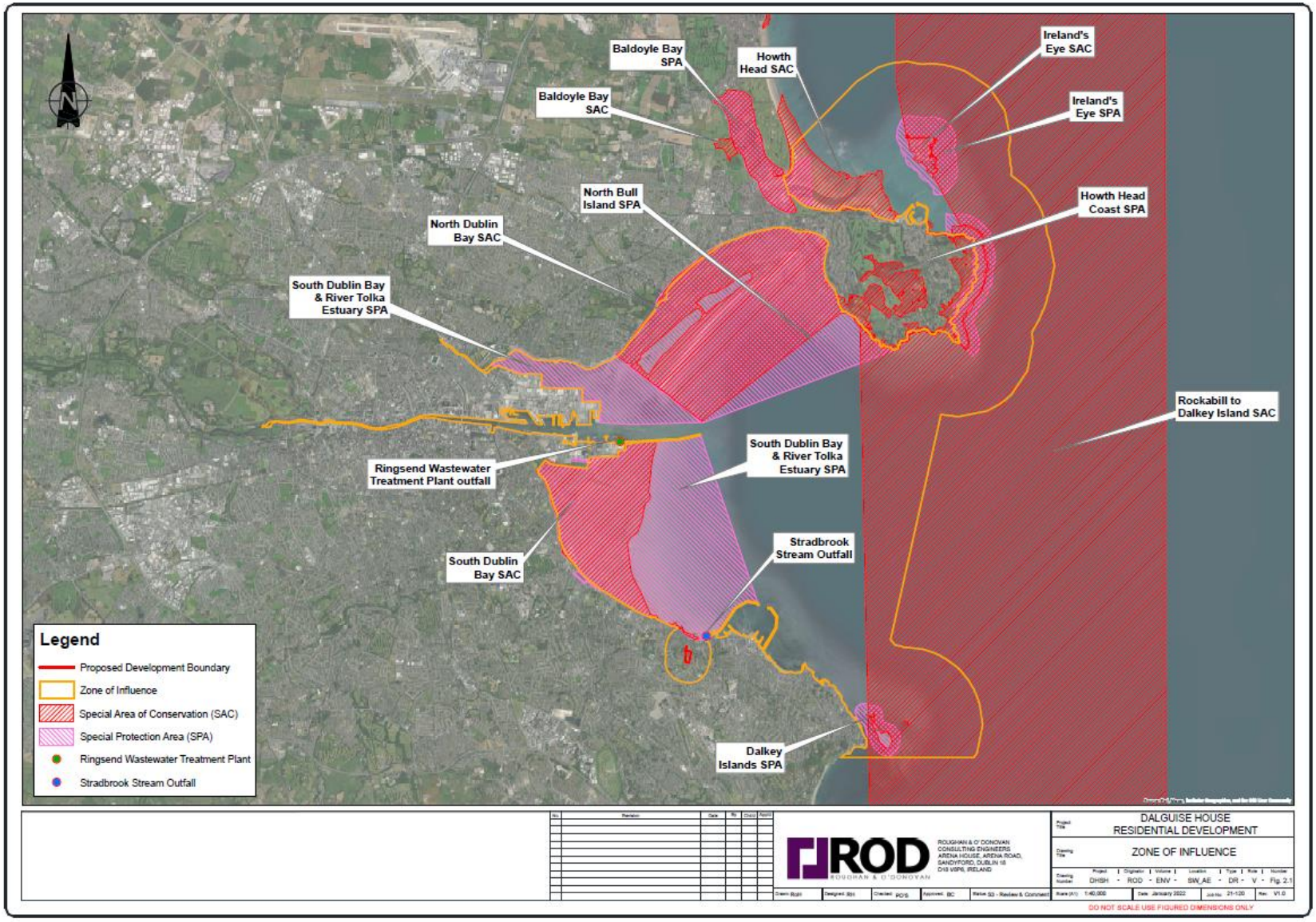

Figure 3.1 Location of European sites in the Zone of Influence

Table 3.1 European sites located within and adjacent to the zone of influence

European site [site code]	Are there potential pathways for impacts from the proposed development to this site? Explain.
South Dublin Bay and River Tolka Estuary SPA [004024]	**Yes.** The shortest absolute distance from the proposed development to this site is c. 230 m north to Seapoint Beach. This distance is over land and this location is within of the ZoI. The shortest distance from the proposed development to the site via a hydrological connection is 810 m northeast through the Stradbrook Stream to its outfall on the west side of the West Pier Pumping Station. In addition to this, this site located 650m from the Ringsend Wastewater Treatment Plant outfall hydrologically, at the ESB Dolphin.
South Dublin Bay SAC [000210]	**Yes.** The shortest absolute distance from the proposed development to this site is c. 340 m north to Seapoint Beach. This distance is over land and this location is within the ZoI. The shortest distance from the proposed development to the site via a hydrological connection is 1.1 km north through the Stradbrook Stream and Dublin Bay to Seapoint Beach, which is 200 m west of the stream outfall. In addition to this, the site is hydrologically connected to the Ringsend Wastewater Treatment Plant outfall hydrologically, around the South Bull Wall, over a distance of 3.75km.
North Bull Island SPA [004006]	**Yes.** The shortest absolute distance from the proposed development to this site is 5.8 km north at the North Bull Lighthouse. This distance is over land and this location is within the ZoI. The shortest distance from the proposed development to the site via a hydrological connection is 6.4 km north through the Stradbrook Stream and Dublin Bay to the North Bull Lighthouse. In addition to this, the site is hydrologically connected to the Ringsend Wastewater Treatment Plant outfall at a distance of 2 km.
North Dublin Bay SAC [000206]	**Yes.** The shortest absolute distance from the proposed development to this site is 5.8 km north just beyond the North Bull Lighthouse. This distance is over land and this location is within the ZoI. The shortest distance from the proposed development to the site via a hydrological connection is 6.4 km north through the Stradbrook Stream and Dublin Bay to just beyond the North Bull Lighthouse. In addition to this, the site is hydrologically connected to the Ringsend Wastewater Treatment Plant outfall at a distance of 2 km.
Baldoyle Bay SPA [004016]	**Yes.** The shortest absolute distance from the proposed development to this site is 11.4 km north at Sutton Golf Club. This distance is over land and this location is within the ZoI. The shortest distance from the proposed development to the site via a hydrological connection is 17.6 km through the Stradbrook Stream and Dublin Bay, although many wintering birds are likely to travel across Dublin Bay so ex-situ pathways are considered to exist. In addition to this, the site is hydrologically connected to the Ringsend Wastewater Treatment Plant outfall at a distance of 15.8 km.

European site [site code]	Are there potential pathways for impacts from the proposed development to this site? Explain.
Baldoyle Bay SAC [000199]	**No.** The shortest absolute distance from the proposed development to this site is 11.4 km north at Sutton Golf Club. This distance is over land and this location is within the ZoI. There are no potential pathways for likely significant effects over land. The shortest distance from the proposed development to the site via a hydrological connection is 16 km through the Stradbrook Stream and Dublin Bay. In addition to this, the site is hydrologically connected to the Ringsend Wastewater Treatment Plant at a distance of 14 km. Given the assimilative capacity of Dublin Bay, any water quality impacts would be negligible by the time they reached this site. Therefore, there are not considered to be any pathways for impact between the proposed development and this site.
Dalkey Islands SPA	**Yes.** The shortest absolute distance from the proposed development to this site is 4.4 km east beyond Scotsman's Bay. This distance is over land and this location is within the ZoI. The shortest distance from the proposed development to the site via a hydrological connection is 6.1 km northeast through the Stradbrook Stream, around the east of Dún Laoghaire Harbour and off the coast of Dalkey. In addition to this, the site is hydrologically connected to the Ringsend Wastewater Treatment Plant outfall at a distance of 10.1 km.
Rockabill to Dalkey Island SAC	**Yes.** The shortest absolute distance from the proposed development to this site is 4.4 km southeast to the northside of Maiden Rock. This distance is over land and this location is within the ZoI. The shortest distance from the proposed development to the site via a hydrological connection is 5.3 km southeast through the Stradbrook Stream, around the east of Dun Laoghaire Harbour and off the coast of Dalkey. In addition to this, the site is hydrologically connected to the Ringsend Wastewater Treatment Plant outfall at a distance of 6 km.
Howth Head Coast SPA	**Yes.** The shortest absolute distance from the proposed development to this site is 10.3 km northeast to Bailey Lighthouse. This distance is over land and this location is within the ZoI. The shortest distance from the proposed development to the site via a hydrological connection is 10.6 km northeast through the Stradbrook Stream and Dublin Bay to Bailey Lighthouse. In addition to this, the site is hydrologically connected to the Ringsend Wastewater Treatment Plant outfall at a distance of 15.8 km.
Howth Head SAC	**Yes.** The shortest absolute distance from the proposed development to this site is 9 km northeast to Martello Tower, Sutton. This distance is over land and this location is within the ZoI. The shortest distance from the proposed development to the site via a hydrological connection is 9.5 km northeast through the Stradbrook Stream and Dublin Bay to Martello Tower, Sutton. In addition to this, the site is hydrologically connected to the Ringsend Wastewater Treatment Plant outfall at a distance of 6.5 km.
Ireland's Eye SPA	**Yes.** The shortest absolute distance from the proposed development to this site is 13.1 km northeast to the southern perimeter of the site. This distance is over land and this location is within the ZoI. The shortest distance from the proposed development to the site via a hydrological connection is 14.8 km through the Stradbrook Stream and Dublin Bay, although many wintering birds are likely to travel across Dublin Bay so ex-situ pathways are considered to exist. In addition to this, the site is hydrologically connected to Ringsend Wastewater Treatment Plant outfall at a distance of 13 km.

European site [site code]	Are there potential pathways for impacts from the proposed development to this site? Explain.
Ireland's Eye SAC	**No.** The shortest absolute distance from the proposed development to this site is 13.6 km northeast to the Thulla. This distance is over land and this location is within the ZoI. There are no potential pathways for likely significant effects over land. The shortest distance from the proposed development to the site via a hydrological connection is 15.6 km through the Stradbrook Stream and Dublin Bay. In addition to this, the site is hydrologically connected to the Ringsend Wastewater Treatment Plant outfall at a distance of 13.6 km. Given the assimilative capacity of Dublin Bay, any water quality impacts would be negligible by the time they reached this site. Therefore, there are not considered to be any pathways for impact between the proposed development and this site.

3.2 Site Descriptions

South Dublin Bay and River Tolka Estuary SPA

The description of the South Dublin Bay and River Tolka Estuary SPA provided here is based on the Conservation Objectives (NPWS, 2015a), Site Synopsis (NPWS, 2015b), and Natura 2000 Standard Data Form (NPWS, 2020a) for the site, as well as the Conservation Objectives Supporting Document (NPWS, 2014a).

Qualifying Interests of the Site

[A046] Light-bellied Brent Goose (*Branta bernicla hrota*)

[A130] Oystercatcher (*Haematopus ostralegus*)

[A137] Ringed Plover (*Charadrius hiaticula*)

[A141] Grey Plover (*Pluvialis squatarola*)

[A143] Knot (*Calidris canutus*)

[A144] Sanderling (*Calidris alba*)

[A149] Dunlin (*Calidris alpina*)

[A157] Bar-tailed Godwit (*Limosa lapponica*)

[A162] Redshank (*Tringa totanus*)

[A179] Black-headed Gull (*Chroicocephalus ridibundus*)

[A192] Roseate Tern (*Sterna dougallii*)

[A193] Common Tern (*Sterna hirundo*)

[A194] Arctic Tern (*Sterna paradisaea*)

[A999] Wetlands

Site Overview

This site comprises a substantial part of Dublin Bay. It includes the intertidal area between the River Liffey and Dún Laoghaire and the estuary of the River Tolka to the north of the River Liffey, as well as Booterstown Marsh. A portion of the shallow marine waters of the bay is also included.

The site is of ornithological importance as it supports an internationally important population of Light-bellied Brent Goose and nationally important populations of a

further nine wintering species. Furthermore, the site supports a nationally important colony of breeding Common Tern and is an internationally important passage/staging site for three tern species. Notably, four of the species that regularly occur at this site are listed on Annex I of the Birds Directive, namely Bar-tailed Godwit, Common Tern, Arctic Tern and Roseate Tern. Parts of the site are also designated as the Ramsar Convention site "Sandymount Strand/Tolka Estuary".

Being an integral part of the internationally important Dublin Bay complex, the site is important for wintering waterfowl. Although birds regularly commute between the south bay and the north bay, recent studies have shown that certain populations which occur in the south bay spend most of their time there.

An internationally important population of Light-bellied Brent Goose (368) occurs regularly and newly arrived birds in the autumn feed on the Eelgrass bed at the Merrion Gates. At the time of designation, the site supported nationally important numbers of a further nine species: Oystercatcher (1,145), Ringed Plover (161), Grey Plover (45), Knot (548), Sanderling (321), Dunlin (1,923), Bar-tailed Godwit (766), Redshank (260) and Black-headed Gull (3,040). Other species occurring in smaller numbers include Great Crested Grebe (21), Curlew (127) and Turnstone (52). Little Egret, a species which has recently colonised Ireland, also occurs at this site.

South Dublin Bay is a significant site for wintering gulls, with a nationally important population of Black-headed Gull, but also Common Gull (330) and Herring Gull (348). Mediterranean Gull is also recorded from here, occurring through much of the year, but especially in late winter/spring and again in late summer into winter.

Both Common Tern and Arctic Tern breed in Dublin Docks, on a man-made mooring structure known as the ESB Dolphin – this is included within the site. Small numbers of Common Tern and Arctic Tern were recorded nesting on this dolphin in the 1980s. A survey in 1995 recorded nationally important numbers of Common Tern nesting here (52 pairs). The breeding population of Common Tern at this site has increased, with 216 pairs recorded in 2000. This increase was largely due to the ongoing management of the site for breeding terns. More recent data highlights this site as one of the most important Common Tern sites in the country with over 400 pairs recorded here in 2007.

South Dublin Bay is an important staging/passage site for a number of tern species in the autumn (mostly late July to September). The origin of many of the birds is likely to be the Dublin breeding sites (Rockabill and the Dublin Docks) though numbers suggest that the site is also used by birds from other sites, perhaps outside the state. This site is selected for designation for its autumn tern populations: Roseate Tern (2,000 in 1999), Common Tern (5,000 in 1999) and Arctic Tern (20,000 in 1996).

Sensitivities of the Site and its Qualifying Interests

As this site is mostly comprised of coastal wetlands and is located directly adjacent to a major city and port, expansion of the city and port poses the greatest threat to its integrity. Reclamation of land from the sea, estuary or marsh represents a direct loss of key Qualifying Interests of the site. Roads, urbanisation, human habitation, industrial and commercial activities and discharges present pressures on the site in terms of disturbance and pollution.

Watersports, walkers, horse riding and non-motorised vehicles also cause persistent disturbance to the birds within the site. Angling, particularly bait collection, causes both disturbance to birds and reduces food availability. The site is also subject to some natural eutrophication pressures.

South Dublin Bay SAC

The description of the South Dublin Bay SAC provided here is based on the Conservation Objectives (NPWS, 2013a), Site Synopsis (NPWS, 2015c) and Natura 2000 Standard Data Form (NPWS, 2020b) for the site.

Qualifying Interests of the Site

[1140] Mudflats and sandflats not covered by seawater at low tide

[1210] Annual vegetation of drift lines

[1310] *Salicornia* and other annuals colonising mud and sand

[2110] Embryonic shifting dunes

Site Overview

This site lies south of the River Liffey in Co. Dublin and extends from the South Wall to the west pier at Dun Laoghaire. It is an intertidal site with extensive areas of sand and mudflats. The sediments are predominantly sands but grade to sandy muds near the shore at Merrion Gates. The main channel which drains the area is Cockle Lake.

Several small, sandy beaches with incipient dune formation occur in the northern and western sectors of the site, notably at Poolbeg, Irishtown and Merrion/ Booterstown. The formation at Booterstown is very recent. Drift line vegetation occurs in association with the embryonic and incipient fore dunes. Typically drift lines occur in a band approximately 5 m wide, though at Booterstown this zone is wider in places. The habitat occurs just above the High-Water Mark and below the area of embryonic dune. Species present are Sea Rocket (*Cakile maritima*), Frosted Orache (*Atriplex laciniata*), Spear-leaved Orache (*A. prostrata*), Prickly Saltwort (*Salsola kali*) and Fat Hen (*Chenopodium album*). Also occurring is Sea Sandwort (*Honkenya peploides*), Sea Beet (*Beta vulgaris* subsp. *maritima*) and Annual Sea-blite (*Suaeda maritima*). A small area of pioneer saltmarsh now occurs in the lee of an embryonic sand dune just north of Booterstown Station. This early stage of saltmarsh development is here characterised by the presence of pioneer stands of glassworts (*Salicornia* spp.) occurring below an area of drift line vegetation. As this is of very recent origin, it covers a small area, but ample areas of substrate and shelter are available for the further development of this habitat.

Lugworm (*Arenicola marina*), Cockles (*Cerastoderma edule*) and annelids and other bivalves are frequent throughout the site. The small gastropod *Hydrobia ulvae* occurs on the muddy sands off Merrion Gates.

South Dublin Bay is an important site for waterfowl. Although birds regularly commute between the south bay and the north bay, recent studies have shown that certain populations which occur in the south bay spend most of their time there. The principal species are Oystercatcher (1215), Ringed Plover (120), Sanderling (344), Dunlin (2628) and Redshank (356) (average winter peaks 1996/97 and 1997/98). Up to 100 Turnstones are usual in the south bay during winter. Brent Goose regularly occur in numbers of international importance (average peak 299). Bar-tailed Godwit (565), a species listed on Annex I of the E.U. Birds Directive, also occur.

Large numbers of gulls roost in South Dublin Bay, e.g. 4,500 Black-headed Gulls in February 1990; 500 Common Gulls in February 1991. It is also an important tern roost in the autumn, regularly holding 2000-3000 terns including Roseate Terns, a species

listed on Annex I of the E.U. Birds Directive. South Dublin Bay is largely protected as a Special Protection Area.

At low tide the inner parts of the south bay are used for amenity purposes. Bait-digging is a regular activity on the sandy flats. At high tide some areas have windsurfing and jet-skiing.

This site is a fine example of a coastal system, with extensive sand and mudflats, and incipient dune formations. South Dublin Bay is also an internationally important bird site.

Sensitivities of the Site and its Qualifying Interests

Increases to urbanisation, residential and commercial development pose the greatest threats to the integrity of this European site and its associated habitats as these activities and discharges present pressures in terms of disturbance and pollution. Other threats such as outdoor sports and leisure activities such as walking, horse-riding and non-motorised vehicles often disturb and negatively impact natural habitats. Reclamation of land from the sea, estuary or marsh represent a direct loss of key qualifying interests of the site.

North Bull Island SPA

The description of the North Bull Island SPA provided here is based on the Conservation Objectives (NPWS, 2015d), Site Synopsis (NPWS, 2014b) and Natura 2000 Standard Data Form (NPWS, 2020c) for the site, as well as the Conservation Objectives Supporting Document (NPWS, 2014a).

Site Overview

This site covers all of the inner part of north Dublin Bay, with the seaward boundary extending from the Bull Wall lighthouse across to Drumleck Point at Howth Head. The North Bull Island sand spit is a relatively recent depositional feature, formed as a result of improvements to Dublin Port during the 18th and 19th Centuries. It is c. 5 km long and 1 km wide and runs parallel to the coast between Clontarf and Sutton. Part of the interior of the island has been converted to golf courses.

The North Bull Island SPA is an excellent example of an estuarine complex and is one of the top sites in Ireland for wintering waterfowl. It is of international importance on account of both the total number of waterfowl and the individual populations of Light-bellied Brent Goose, Black-tailed Godwit and Bar-tailed Godwit that use it. Also of significance is the regular presence of several species that are listed on Annex I of the Birds Directive, notably Golden Plover and Bar-tailed Godwit, but also Ruff and Short-eared Owl. North Bull Island is a Ramsar Convention site, and part of the North Bull Island SPA is a Statutory Nature Reserve and a Wildfowl Sanctuary.

Qualifying Interests of the Site

[A046] Light-bellied Brent Goose (*Branta bernicla hrota*)

[A048] Shelduck (*Tadorna tadorna*)

[A052] Teal (*Anas crecca*)

[A054] Pintail (*Anas acuta*)

[A056] Shoveler (*Anas clypeata*)

[A130] Oystercatcher (*Haematopus ostralegus*)

[A140] Golden Plover (*Pluvialis apricaria*)

[A141] Grey Plover (*Pluvialis squatarola*)

[A143] Knot (*Calidris canutus*)

[A144] Sanderling (*Calidris alba*)

[A149] Dunlin (*Calidris alpina*)

[A156] Black-tailed Godwit (*Limosa limosa*)

[A157] Bar-tailed Godwit (*Limosa lapponica*)

[A160] Curlew (*Numenius arquata*)

[A162] Redshank (*Tringa totanus*)

[A169] Turnstone (*Arenaria interpres*)

[A179] Black-headed Gull (*Chroicocephalus ridibundus*)

[A999] Wetlands

Saltmarsh extends along the length of the landward side of the island and provides the main roost site for wintering birds in Dublin Bay. The island shelters two intertidal lagoons which are divided by a solid causeway. These lagoons provide the main feeding grounds for the wintering waterfowl. The sediments of the lagoons are mainly sands with a small and varying mixture of silt and clay. Green algal mats (*Ulva* spp.) are a feature of the flats during summer. These sediments have a rich macro-invertebrate fauna, with high densities of Lugworm (*Arenicola marina*) and Ragworm (*Hediste diversicolor*).

This site is of international importance for waterfowl on the basis that it regularly supports in excess of 20,000 waterfowl. The site supports internationally important populations of three species, Light-bellied Brent Goose (1,548), Black-tailed Godwit (367) and Bar-tailed Godwit (1,529) - all figures are mean peaks for the five winters between 1995/96 and 1999/2000. The site is one of the most important in the country for Light-bellied Brent Goose. A further 14 species have populations of national importance: Shelduck (1,259), Teal (953), Pintail (233), Shoveler (141), Oystercatcher (1,784), Grey Plover (517), Golden Plover (2,033), Knot (2,837), Sanderling (141), Dunlin (4,146), Curlew (937), Redshank (1,431), Turnstone (157) and Black-headed Gull (2,196). The populations of Pintail and Knot are of particular note as they comprise 14% and 10% respectively of the all-Ireland population totals. Other species that occur regularly in winter include Grey Heron, Little Egret, Cormorant, Wigeon, Goldeneye, Red-breasted Merganser, Ringed Plover and Greenshank. Gulls are a feature of the site during winter and, along with the nationally important population of Black-headed Gull (2,196), other species that occur include Common Gull (332) and Herring Gull (331). While some of the birds also frequent South Dublin Bay and the River Tolka Estuary for feeding and/or roosting purposes, the majority remain within the site for much of the winter. The wintering bird populations have been monitored more or less continuously since the late 1960s and the site is now surveyed each winter as part of the larger Dublin Bay complex.

The North Bull Island SPA is a regular site for passage waders, especially Ruff, Curlew Sandpiper and Spotted Redshank. These are mostly observed in single figures in autumn but occasionally in spring or winter. The site formerly had an important colony of Little Tern but breeding has not occurred in recent years. Several pairs of Ringed Plover breed, along with Shelduck in some years. Breeding passerines include

Skylark, Meadow Pipit, Stonechat and Reed Bunting. The island is a regular wintering site for Short-eared Owl, with up to 5 present in some winters.

Sensitivities of the Site and its Qualifying Interests

The greatest pressures/threats to the integrity of the North Bull SPA come from the bridge/viaduct located within the site (and the potential for other structures to be built within the site) and from walking, horse riding and non-motorised vehicles within the site. Bait digging/collection, nautical sports and the golf course (all inside the site) and roads, motorways, shipping lanes, continuous urbanisation and industrial or commercial areas (all outside the site) also represent significant pressures/threats to the integrity of this site. Other patterns of habitation within the site represent a lower-level pressure/threat.

North Dublin Bay SAC

The description of the North Dublin Bay SAC provided here is based on the Conservation Objectives (NPWS, 2013c), Site Synopsis (NPWS, 2013d) and Natura 2000 Standard Data Form (NPWS, 2020d) for the site.

Qualifying Interests of the Site

[1140] Tidal mudflats and sandflats not covered by seawater at low tide

[1210] Annual vegetation of drift lines

[1310] *Salicornia* and other annuals colonising mud and sand

[1330] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

[1410] Mediterranean salt meadows (*Juncetalia maritimi*)

[2110] Embryonic shifting dunes

[2120] Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)

[2130] Fixed coastal dunes with herbaceous vegetation (grey dunes)

[2190] Humid dune slacks

[1395] Petalwort (*Petalophyllum ralfsii*)

Site Overview

This site covers the inner part of north Dublin Bay, the seaward boundary extending from the Bull Wall lighthouse across to the Martello Tower at Howth Head. The North Bull Island is the focal point of this site.

North Bull Island is a sandy spit which formed after the building of the South Wall and Bull Wall in the 18th and 19th centuries. It now extends for about 5 km in length and is up to 1 km wide in places. A well-developed and dynamic dune system stretches along the seaward side of the island. Various types of dunes occur, from fixed dune grassland to pioneer communities on foredunes.

About 1 km from the tip of the island, a large dune slack with a rich flora occurs, usually referred to as the 'Alder Marsh' because of the presence of Alder trees (*Alnus glutinosa*). The water table is very near the surface and is only slightly brackish.

Saltmarsh extends along the length of the landward side of the island. The edge of the marsh is marked by an eroding edge which varies from 20 cm to 60 cm high. The marsh can be zoned into different levels according to the vegetation types present. Towards the tip of the island, the saltmarsh grades naturally into fixed dune vegetation.

The habitat 'annual vegetation of drift lines' is found in places, along the length of Dollymount Strand, with species such as Sea Rocket (*Cakile maritima*), Oraches (*Atriplex* spp.) and Prickly Saltwort (*Salsola kali*).

The island shelters two intertidal lagoons which are divided by a solid causeway. The sediments of the lagoons are mainly sands with a small and varying mixture of silt and clay. The north lagoon has an area known as the "*Salicornia* flat", which is dominated by *Salicornia dolichostachya*, a pioneer glasswort species, and covers about 25 ha. The sediments on the seaward side of North Bull Island are mostly sands. The site extends below the low spring tide mark to include an area of the sublittoral zone.

Three rare plant species which are legally protected under the Flora (Protection) Order, 2015 have been recorded on the North Bull Island. These are Lesser Centaury (*Centaurium pulchellum*), Red Hemp-nettle (*Galeopsis angustifolia*) and Meadow Saxifrage (*Saxifraga granulata*). Two further species listed as threatened in the Red Data Book, Wild Clary/Sage (*Salvia verbenaca*) and Spring Vetch (*Vicia lathyroides*), have also been recorded. A rare liverwort, *Petalophyllum ralfsii*, was first recorded from the North Bull Island in 1874 and has recently been confirmed as still present.
This species is of high conservation value as it is listed on Annex II of the E.U. Habitats Directive. The North Bull is the only known extant site for the species in Ireland away from the western seaboard.

North Dublin Bay is of international importance for waterfowl Some of these species frequent South Dublin Bay and the River Tolka Estuary for feeding and/or roosting purposes (mostly Brent Goose, Oystercatcher, Ringed Plover, Sanderling and Dunlin). The tip of the North Bull Island is a traditional nesting site for Little Tern. A high total of 88 pairs nested in 1987. However, nesting attempts have not been successful since the early 1990s. A well-known population of Irish Hare is resident on the island.

The invertebrates of the North Bull Island have been studied and the island has been shown to contain at least seven species of regional or national importance in Ireland.

The main land uses of this site are amenity activities and nature conservation. The North Bull Island is the main recreational beach in Co. Dublin and is used throughout the year. Much of the land surface of the island is taken up by two golf courses. Two separate Statutory Nature Reserves cover much of the island east of the Bull Wall and the surrounding intertidal flats. The site is used regularly for educational purposes. North Bull Island has been designated a Special Protection Area under the E.U. Birds Directive and it is also a statutory Wildfowl Sanctuary, a Ramsar Convention site, a Biogenetic Reserve, a Biosphere Reserve and a Special Area Amenity Order site.

This site is an excellent example of a coastal site with all the main habitats represented. The site holds good examples of nine habitats that are listed on Annex I of the E.U. Habitats Directive; one of these is listed with priority status. Several of the wintering bird species have populations of international importance, while some of the invertebrates are of national importance. The site contains a number of rare and scarce plants including some which are legally protected. Its proximity to the capital city makes North Dublin Bay an excellent site for educational studies and research.

Sensitivities of the Site and its Qualifying Interests

As this site is located directly adjacent to a major city and port, expansion of the city and port poses the greatest threat to its integrity. Reclamation of land from the sea, estuary or marsh represents a direct loss of key Qualifying Interests of the site. Roads,

urbanisation, human habitation, industrial and commercial activities and accumulation of organic material present pressures on the site in terms of disturbance and pollution. Walkers, horse riding and non-motorised vehicles also cause persistent disturbance to the birds within the site.

Baldoyle Bay SPA

The description of the Baldoyle Bay SPA provided here is based on the Conservation Objectives (NPWS, 2013e), Site Synopsis (NPWS, 2014c), and Natura 2000 Standard Data Form (NPWS, 2020e) for the site, as well as the Conservation Objectives Supporting Document (NPWS, 2012).

Site Overview

Baldoyle Bay, located to the north and east of Baldoyle and to the south of Portmarnock, Co. Dublin, is a relatively small, narrow estuary separated from the open sea by a large sand dune system. Two small rivers, the Mayne River and the Sluice River, flow into the inner part of the estuary.

Large areas of intertidal flats are exposed at low tide. These are mostly sands but grade to muds in the inner sheltered parts of the estuary. Extensive areas of Common Cord-grass (*Spartina anglica*) occur in the inner estuary. Both the Narrow-leaved Eelgrass (*Zostera angustifolia*) and the Dwarf Eelgrass (*Z. noltii*) are also found here.

During summer, the sandflats of the sheltered areas are covered by mats of green algae (*Ulva* spp.). The sediments have a typical macrofauna, with Lugworm (*Arenicola marina*) dominating the sandy flats. Areas of saltmarsh occur near Portmarnock Bridge and at Portmarnock Point, with narrow strips found along other parts of the estuary. Species such as Glasswort (*Salicornia* spp.), Sea-purslane (*Halimione portulacoides*), Sea Plantain (*Plantago maritima*) and Sea Rush (*Juncus maritimus*) are found here.

Baldoyle Bay is an important site for wintering waterfowl, providing good quality feeding areas and roost sites for an excellent diversity of waterfowl species. It supports an internationally important population of Light-bellied Brent Goose (726) and has a further five species with nationally important populations (all figures are mean peaks for the five winters 1995/96 to 1999/2000): Shelduck (147), Ringed Plover (223), Golden Plover (2,120), Grey Plover (200) and Bar-tailed Godwit (353). Other species which occur include Great Crested Grebe (42), Pintail (35), Teal (138), Mallard (46), Common Scoter (61), Oystercatcher (531), Lapwing (524), Knot (189), Dunlin (879), Black-tailed Godwit (113), Curlew (98), Redshank (224), Greenshank (11) and Turnstone (43).

Regular breeding birds include Shelduck, Mallard and Ringed Plover. In autumn, passage migrants such as Curlew Sandpiper, Spotted Redshank and Green Sandpiper are regular in small numbers. Little Egret, a species which has recently colonised Ireland, also occurs at this site.

Baldoyle Bay SPA is of high conservation importance, for supporting internationally important numbers of Light-bellied Brent Goose as well as nationally important populations of a further five species, including Golden Plover and Bar-tailed Godwit, both species that are listed on Annex I of the E.U. Birds Directive. The inner part of the site is a Statutory Nature Reserve and also designated as a wetland of international importance under the Ramsar Convention.

Qualifying Interests of the Site

[A046] Light-bellied Brent Goose (*Branta bernicla hrota*)

[A048] Shelduck (*Tadorna tadorna*)

[A137] Ringed Plover (*Charadrius hiaticula*)

[A140] Golden Plover (*Pluvialis apricaria*)

[A141] Grey Plover (*Pluvialis squatarola*)

[A157] Bar-tailed Godwit (*Limosa lapponica*)

[A999] Wetlands

Sensitivities of the Site and its Qualifying Interests

The greatest pressures/threats to the integrity of the Baldoyle Bay SPA come from Portmarnock Golf Course located within the site and reclamation of land from the sea due to human induced changes in hydraulic conditions. The spread of invasive alien species and fertilisation from agricultural practices also represent significant pressures/threats to the integrity of this site. Pressures from walking, horse riding, non-motorised vehicles and hunting within the site as well as the construction of roads also threaten the integrity of the site.

Dalkey Islands SPA

The description of the Dalkey Islands SPA provided here is based on the Conservation Objectives (NPWS, 2022a), Site Synopsis (NPWS, 2015e) and Natura 2000 Standard Data Form (NPWS, 2020f) for the site, as well as the Conservation Objectives Supporting Document (NPWS, 2013f).

Site Overview

The site comprises Dalkey Island, Lamb Island and Maiden Rock, the intervening rocks and reefs, and the surrounding sea to a distance of 200 m. Dalkey Island, which is the largest in the group, lies c. 400 m off Sorrento Point on the Co. Dublin mainland from which it is separated by a deep channel. The island is low-lying, the highest point of which (c. 15 m) is marked by a Martello Tower. Soil cover consists mainly of a thin peaty layer, though in a few places there are boulder clay deposits. Vegetation cover is low-growing and consists mainly of grasses. Dense patches of Bracken (Pteridium aquilinum) and Hogweed (Heracleum sphondylium) occur in places. Lamb Island lies to the north of Dalkey Island, and at low tide is connected by a line of rocks. It has a thin soil cover and some vegetation, mainly of grasses, Nettles (Urtica dioica) and Hogweed. Further north lies Maiden Rock, a bare angular granite rock up to 5 m high that is devoid of higher plant vegetation.

Dalkey Islands SPA is both a breeding and a staging site for Sterna terns. There is a good history of nesting by terns though success has been variable over the years. Common Tern is the most common species, usually outnumbering Arctic Tern by at least 3:1. Up to 1988, the range given for Common Tern was 15-53 pairs, and for Arctic Tern 'a few' pairs. Also, Roseate Tern attempted nesting in 1986, with 2 pairs recorded. A tern conservation scheme, co-ordinated by BirdWatch Ireland / National Parks and Wildlife Service, began in 1995, with wardening, nestbox deployment and monitoring being carried out. The ultimate aim was to attract Roseate Tern to breed. Numbers of terns increased in subsequent years, though numbers and breeding success is still variable between years. In 2003 62 pairs of Common Tern and 24 pairs of Arctic Tern were recorded. Of great significance is that Roseate Tern has returned, with 5 pairs recorded in 2003 and 11 pairs in 2004 - this is one of only three known sites in the country for this rare species.

The site, along with other parts of south Dublin Bay, is used by the three tern species as a major post-breeding/pre-migration autumn roost area. The site is linked to another important post-breeding/pre-migration autumn tern roost area in Dublin Bay. Birds are present from about late-July to September, with c. 2,000 terns, comprising individuals of all three species, recorded in 1998. The origin of the birds is likely to be the Dublin breeding sites (Rockabill and Dublin Docks) though the numbers recorded suggests that birds from other sites, perhaps outside the State, are also present.

Dalkey Islands SPA is of particular importance as a post-breeding/pre-migration autumn roost area for Roseate Tern, Common Tern and Arctic Tern. The recent nesting by Roseate Tern is highly significant. All three tern species using the site are listed on Annex I of the E.U. Birds Directive.

Qualifying Interests of the Site

[A192] Roseate Tern (*Sterna dougallii*)

[A193] Common Tern (*Sterna hirundo*)

[A194] Arctic Tern (*Sterna paradisaea*)

[A999] Wetlands

Sensitivities of the Site and its Qualifying Interests

The greatest pressures/threats to the integrity of the Dalkey Islands SPA come from urbanised areas and human habitation. These include outdoor sports and leisure activities, walking, horseriding and non-motorised vehicles. Agricultural activities such as grazing from livestock also threaten the integrity of the site.

Rockabill to Dalkey Island SAC

The description of the Rockabill to Dalkey Island SAC provided here is based on the Conservation Objectives (NPWS, 2013g), Site Synopsis (NPWS, 2014d) and Natura 2000 Standard Data Form (NPWS, 2019d) for the site, as well as the Conservation Objectives Supporting Document (NPWS, 2013f).

Site Overview

This site includes a range of dynamic inshore and coastal waters in the western Irish Sea. These include sandy and muddy seabed, reefs, sandbanks and islands. This site extends southwards, in a strip approximately 7 km wide and 40 km in length, from Rockabill, running adjacent to Howth Head, and crosses Dublin Bay to Frazer Bank in south Co. Dublin. The site encompasses Dalkey, Muglins and Rockabill islands.

Reef habitat is uncommon along the eastern seaboard of Ireland due to prevailing geology and hydrographical conditions. Expansive surveys of the Irish coast have indicated that the greatest resource of this habitat within the Irish Sea is found fringing offshore islands which are concentrated along the Dublin coast. A detailed survey of selected suitable islands has shown areas with typical biodiversity for this habitat both intertidally and subtidally. These reefs are subject to strong tidal currents with an abundant supply of suspended matter resulting in good representation of filter feeding fauna such as sponges, anemones and echinoderms.

The area selected for designation represents a key habitat for the Annex II species Harbour Porpoise within the Irish Sea. Population survey data show that porpoise occurrence within the site boundary meets suitable reference values for other designated sites in Ireland. The species occurs year-round within the site and comparatively high group sizes have been recorded. Porpoises with young (i.e. calves)

are observed at favourable, typical reference values for the species. Casual and effort-related sighting rates from coastal observation stations are significant for the east coast of Ireland and the latter appear to be relatively stable across all seasons. The selected site contains a wide array of habitats believed to be important for Harbour Porpoise including inshore shallow sand and mudbanks and rocky reefs scoured by strong current flow. The site also supports Common Seal and Grey Seal, for which terrestrial haul-out sites occur in immediate proximity to the site. Bottlenose Dolphins has also occasionally been recorded in the area. A number of other marine mammals have been recorded in this area including Minke, Fin and Killer Whales and Risso's and Common Dolphins.

This site is of conservation importance for reefs, listed on Annex I, and Harbour Porpoise, listed on Annex II, of the E.U. Habitats Directive.

Qualifying Interests of the Site

[1170] Reefs

[1351] Harbour Porpoise (*Phocoena phocoena*)

Sensitivities of the Site and its Qualifying Interests

The greatest pressures/threats to the integrity of the Rockabill to Dalkey Island SAC come from transportation and service corridors, predominantly in the form of shipping lanes, ports and marine constructions. Urbanisation, residential and commercial development increase the risk of noise pollution and discharge into the environment, which greatly effects the integrity of the site. Pressures from professional passive fishing within the site also threaten the integrity of the site.

Howth Head Coast SPA

The description of the Howth Head Coast SPA provided here is based on the Conservation Objectives (NPWS, 2022b), Site Synopsis (NPWS, 2011a) and Natura 2000 Standard Data Form (NPWS, 2020g) for the site.

Site Overview

Howth Head is a rocky headland situated on the northern side of Dublin Bay. The peninsula is composed of Cambrian rock of the Bray Group, the most conspicuous component being quartzite. The site comprises the sea cliffs extending from just east of the Nose of Howth to the tip of the Bailey Lighthouse peninsula. The marine area to a distance of 500 m from the cliff base is included within the site.

The cliffs vary from between about 60 m and 90 m in height, and in places comprise fairly sheer, exposed rock face. Here plants such as Rock Sea-spurrey (*Spergularia rupicola*), Navelwort (*Umbilicus rupestris*), Rock Samphire (*Crithmum maritimum*), English Stonecrop (*Sedum anglicum*) and Biting Stonecrop (*Sedum acre*) are found, along with a good diversity of lichen species.

Howth Head Coast SPA is of high ornithological importance as it supports a nationally important population of Kittiwake. It is also a traditional nesting site for Peregrine Falcon, a species that is listed on Annex I of the E.U. Birds Directive. The site is easily accessible and has important amenity and educational value due to its proximity to Dublin City.

Qualifying Interests of the Site

[A188] Kittiwake (*Rissa tridactyla*)

Sensitivities of the Site and its Qualifying Interests

The greatest pressures/threats to the integrity of the Howth Head Coast SPA come from walking, horse riding and non-motorised vehicles within the site. Natural system modifications such as fire and fire suppression also present pressures to the integrity of the site, although these are not as great as the threats from human intrusions and disturbances.

Howth Head SAC

The description of the Howth Head SAC provided here is based on the Conservation Objectives (NPWS, 2016a), Site Synopsis (NPWS, 2013h) and Natura 2000 Standard Data Form (NPWS, 2018) for the site, as well as the Conservation Objectives Supporting Document (NPWS, 2016b).

Site Overview

Howth Head is a rocky headland situated on the northern side of Dublin Bay. The peninsula is composed of Cambrian slates and quartzites, joined to the mainland by a post-glacial raised beach. Limestone occurs on the north-west side while glacial drift is deposited against the cliffs in places.

A mosaic of heathland vegetation occurs on the slopes above the sea cliffs and in the area of the summit. This is dominated by Western Gorse (*Ulex gallii*), Heather (*Calluna vulgaris*), Bell Heather (*Erica cinerea*) and localised patches of Bracken (*Pteridium aquilinum*). In more open areas species such as English Stonecrop (*Sedum anglicum*), Wood Sage (*Teucrium scorodonia*) and Navelwort (*Umbilicus rupestris*) occur, along with some areas of bare rock.

A number of Red Data Book plant species, the latter five of which are legally protected under the Flora (Protection) Order, 1999, have been recorded at this site - Green-winged Orchid (*Orchis morio*), Bird's-foot (*Ornithopus perpusillus*), Hairy Violet (*Viola hirta*), Rough Poppy (*Papaver hybridum*), Pennyroyal (*Mentha pulegium*), Heath Cudweed (*Omalotheca sylvatica*) and Betony (*Stachys officinalis*).

Howth Head displays a fine range of natural habitats, including two Annex I habitats, within surprisingly close proximity to Dublin city. The site is also of scientific importance for its seabird colonies, invertebrates and lichens. It also supports populations of at least two legally protected plant species and several other scarce plants.

Qualifying Interests of the Site

[1230] Vegetated sea cliffs of the Atlantic and Baltic coasts

[4030] European dry heaths

Sensitivities of the Site and its Qualifying Interests

The greatest pressures/threats to the integrity of the Howth Head SAC come from the spread of invasive alien species, human activities such as walking, horse riding, non-motorised vehicles. Pressures from natural systems modifications such as burning within the site as well as mining and quarrying also threaten the integrity of the site.

Ireland's Eye SPA

The description of the Ireland's Eye SPA provided here is based on the Conservation Objectives (NPWS, 2022c), Site Synopsis (NPWS, 2011b) and Natura 2000 Standard Data Form (NPWS, 2020h) for the site.

Site Overview

Howth Head is a rocky headland situated on the northern side of Dublin Bay. The peninsula is composed of Cambrian rock of the Bray Group, the most conspicuous component being quartzite. The site comprises the sea cliffs extending from just east of the Nose of Howth to the tip of the Bailey Lighthouse peninsula. The marine area to a distance of 500 m from the cliff base is included within the site.

Qualifying Interests of the Site

[A017] Cormorant (*Phalacrocorax carbo*)

[A184] Herring Gull (*Larus argentatus*)

[A188] Kittiwake (*Rissa tridactyla*)

[A199] Guillemot (*Uria aalge*)

[A200] Razorbill (*Alca torda*)

Sensitivities of the Site and its Qualifying Interests

The greatest pressures/threats to the integrity of the Ireland's Eye SPA come from walking, horse riding and non-motorised vehicles within the site. Biological resource use such as leisure fishing also present pressures to the integrity of the site, although these are not as great as the threats from human intrusions and disturbances.

3.3 Evaluation against Conservation Objectives

Guidance from the European Commission (EC, 2021) explains that "*The description of the site's integrity and the impact assessment should be based on the parameters that determine the conservation objectives and that are specific to the habitats and species of the site and their ecological requirements*".

Following this guidance, the identification of likely significant effects potentially arising from the proposed development on the integrity of the European sites identified in Section 3.1 and described in Section 3.2 focusses on and is limited to the Conservation Objectives of those sites. Where no site-specific Conservation Objectives have been prepared, the Attributes and Targets from the same Qualifying Interests in similar European Sites have been used.

Table 3.2 – 3.11 below detail the evaluation of the likely significant effects of the proposed development in view of the Conservation Objectives of the sites identified in Section 3.1 and described in Section 3.2. As explained in Sections 1.2 and 1.3, the assessment of likely significant effects is carried out in view of the Conservation Objectives of the relevant European sites, which are in turn defined by the respective Attributes and Targets. Therefore, the evaluation of whether or not the proposed development will likely significantly affect each European site (in view of the Conservation Objective in question) is made with regard to these Attributes and Targets.

Table 3.2 Evaluation of the likely effects of the proposed development in view of the Conservation Objectives of the South Dublin Bay and River Tolka Estuary SPA [004024]

Qualifying Interest	Conservation Objective as per NPWS (2015a)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]	*"To maintain the favourable conservation condition of Light-bellied Brent Goose in South Dublin Bay and River Tolka Estuary SPA"*	The Attributes of these Conservation Objectives focus on "*Population trend*" and "*Distribution*". The site of the proposed development or the habitats adjacent to it do not contain suitable feeding or roosting habitat for these species. Wetland bird species are typically associated with coastal and intertidal habitats. While some species such as Light-bellied brent Geese are known to feed on amenity grassland and this habitat exists on the site of the proposed development, Light-bellied Brent Geese prefer large open spaces which do not impede their sightlines. The proposed development site does not contain large open areas of amenity grassland with site lines. The front lawn has fences and is dotted with trees. The northern lawn near Purbeck is on a slope. Both of these areas are surrounded by tall trees. This assessment is corroborated by the wintering bird survey (Enviroguide, 2021) that was undertaken from October 2020 – March 2021. The report did not record any Qualifying Interest species on the site, despite significant survey effort, with 36 hours spent surveying over six days. It is noted that Grey Heron nest on the proposed development site but as they are not a Qualifying Interest of any European Site in Dublin Bay, they are not relevant to this AA Screening Report. <u>*Construction Phase Impacts*</u> During the construction of the proposed development, there is potential for accidental discharge of sediment and pollutants to reach Dublin Bay which is 810 m downstream via surface water pathways and the Stradbrook Stream. There is no potential for noise, vibration or visual impacts due to the size of the proposed development, the distance between the proposed development site and the SPA, the screening provided by buildings and trees, and the ambient noise levels already present in the area. <u>*Operational Phase Impacts*</u> 1. As described in Section 2.3, Ringsend WwTP is currently overloaded and is being upgraded in order to comply with the Urban Wastewater Treatment Directive. During the	Yes
Oystercatcher (*Haematopus ostralegus*) [A130]	*"To maintain the favourable conservation condition of Oystercatcher in South Dublin Bay and River Tolka Estuary SPA"*		Yes
Ringed Plover (*Charadrius hiaticula*) [A137]	*"To maintain the favourable conservation condition of Ringed Plover in South Dublin Bay and River Tolka Estuary SPA"*		Yes
Grey Plover (*Pluvialis squatarola*) [A141]	*"Grey Plover is proposed for removal from the list of Special Conservation Interests for South Dublin Bay and River Tolka Estuary SPA. As a result, a site-specific conservation objective has not been set for this species."*		Yes
Knot (*Calidris canutus*) [A143]	*"To maintain the favourable conservation condition of Knot in South Dublin Bay and River Tolka Estuary SPA"*		Yes

Qualifying Interest	Conservation Objective as per NPWS (2015a)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Sanderling (*Calidris alba*) [A144]	*"To maintain the favourable conservation condition of Sanderling in South Dublin Bay and River Tolka Estuary SPA"*	operational phase of the proposed development, wastewater will be conveyed to the Ringsend WwTP, which is currently treating wastewater for up to 2 million people. Considering the assimilative capacity of Dublin Bay and the Liffey Estuary, the proposed development will not measurably increase the foul water being supplied to Ringsend WwTP and will not lead to likely significant effects.	Yes
Dunlin (*Calidris alpina alpina*) [A149]	*"To maintain the favourable conservation condition of Dunlin in South Dublin Bay and River Tolka Estuary SPA"*	2. Untreated surface water from the site (i.e. accidental hydrocarbon leaks and subsequent discharge) has the potential to flow into the Stradbrook Stream which could lead to likely significant effects on the SPA.	Yes
Bar-tailed Godwit (*Limosa lapponica*) [A157]	*"To maintain the favourable conservation condition of Bar-tailed Godwit in South Dublin Bay and River Tolka Estuary SPA"*	3. During periods of high rainfall, the public surface water drainage system overflows into the foul water drainage system which can then become overloaded, releasing untreated foul water into Dublin Bay from overflows along South Dublin Bay. This will not constitute a likely significant effect, as the proposed development will not measurably increase the loading on the system.	Yes
Redshank (*Tringa totanus*) [A162]	*"To maintain the favourable conservation condition of Redshank in South Dublin Bay and River Tolka Estuary SPA"*	**Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development has the potential to cause likely significant effects on this European site in view of its Conservation Objectives for these Qualifying Interests.**	Yes
Black-headed Gull (*Chroicocephalus ridibundus*) [A179]	*"To maintain the favourable conservation condition of Black-headed Gull in South Dublin Bay and River Tolka Estuary SPA"*		Yes
Roseate Tern (*Sterna dougallii*) [A192]	*"To maintain the favourable conservation condition of Roseate Tern in South Dublin Bay and River Tolka Estuary SPA"*	The Attributes of these Conservation Objectives focus on "*Passage Population*", "*Distribution*", *"Prey biomass availability", "Barriers to connectivity"* and *"Disturbance at roosting site"*. As explained above, the site of the proposed development or the habitats adjacent to it do not contain suitable habitat feeding, roosting or nesting habitat for these species.	Yes

Qualifying Interest	Conservation Objective as per NPWS (2015a)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Common Tern (*Sterna hirundo*) [A193]	*"To maintain the favourable conservation condition of Common Tern in South Dublin Bay and River Tolka Estuary SPA"*	*Construction Phase Impacts* During the construction of the proposed development, there is potential for accidental discharge of sediment and pollutants to reach Dublin Bay which is 810 m downstream via surface water pathways and the Stradbrook Stream. There is no potential for noise, vibration or visual impacts due to the size of the proposed development, the distance between the proposed development site and the SPA, the screening provided by buildings and trees, and the ambient noise levels already present in the area. *Operational Phase Impacts* 1. As described in Section 2.3, Ringsend WwTP is currently being upgraded in order to comply with the Urban Wastewater Treatment Directive. During the operational phase of the proposed development, wastewater will be conveyed to the Ringsend WwTP, which is currently treating wastewater for up to 2 million people. Considering this as well as the assimilative capacity of Dublin Bay, the proposed development will not measurably increase the foul water being supplied to Ringsend WwTP. 2. Untreated surface water from the site (i.e. accidental hydrocarbon leaks and subsequent discharge) has the potential to flow into the Stradbrook Stream which could lead to likely significant effects on the SPA. 3. During periods of high rainfall, the public surface water drainage system overflows into the foul water drainage system which can then become overloaded, releasing untreated foul water into Dublin Bay from overflows along South Dublin Bay. This will not constitute a likely significant effect, as the proposed development will not measurably increase the loading on the system. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development has the potential to cause likely significant effects on this European site in view of its Conservation Objectives for these Qualifying Interests.**	Yes
Arctic Tern (*Sterna paradisaea*) [A194]	*"To maintain the favourable conservation condition of Arctic Tern in South Dublin Bay and River Tolka Estuary SPA"*		Yes

Qualifying Interest	Conservation Objective as per NPWS (2015a)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Wetlands [A999]	*"To maintain the favourable conservation condition of the wetland habitat in South Dublin Bay and River Tolka Estuary SPA as a resource for the regularly occurring migratory waterbirds that utilise it"*	The Conservation Objective for Wetlands is defined by a single Attribute, namely "*Habitat area*", the Target for which is "*The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 2,192 hectares, other than that occurring from natural patterns of variation*". As the proposed development does not provide for any reduction in the permanent area of this habitat within the site, it has no potential to delay or interrupt the achievement of this Conservation Objective. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development will not significantly affect this European site in view of its Conservation Objectives for this Qualifying Interest.**	No

Table 3.3 Evaluation of the likely significant effects of the proposed development in view of the Conservation Objectives of the South Dublin Bay SAC [000210]

Qualifying Interest	Conservation Objective as per NPWS (2013a)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Mudflats and sandflats not covered by seawater at low tide [1140]	*"To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in South Dublin Bay SAC"*	The Attributes of this Conservation Objective focuses on "*Habitat Area*", "*Habitat Extent*", *"Community Structure: Zostera density", "Community Distribution"*. Mudflats and sandflats not covered by seawater at low tide are located at Monkstown DART station close to the Stradbrook Stream outfall (NPWS, 2013a). *Construction Phase Impacts* During the construction of the proposed development, there is potential for accidental discharge of sediment and pollutants to impact this habitat in Dublin Bay which is 810 m downstream via surface water pathways and the Stradbrook Stream. *Operational Phase Impacts* 1. As described in Section 2.3, Ringsend WwTP is currently being upgraded in order to comply with the Urban Wastewater Treatment Directive. During the operational phase of the proposed development, wastewater will be conveyed to the Ringsend WwTP, which is currently treating wastewater for up to 2 million people. Considering this as well as the assimilative capacity of Dublin Bay, the proposed development will not measurably increase the foul water being supplied to Ringsend WwTP. 2. Untreated surface water from the site (i.e. accidental hydrocarbon leaks and subsequent discharge) has the potential to flow into the Stradbrook Stream which could lead to likely significant effects on the SAC. 3. During periods of high rainfall, the public surface water drainage system overflows into the foul water drainage system which can then become overloaded, releasing untreated foul water into Dublin Bay from overflows along South Dublin Bay. This will not constitute a likely significant effect, as the proposed development will not measurably increase the loading on the system.	Yes

Qualifying Interest	Conservation Objective as per NPWS (2013a)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
		Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development has the potential to cause likely significant effects on this European site in view of its Conservation Objectives for this Qualifying Interest.	
Annual vegetation of drift lines [1210]	*"To maintain or restore the favourable conservation condition of Annual vegetation of drift lines in South Dublin Bay SAC".* Attributes and Targets for this Qualifying Interest have been taken from the Conservation Objective for Annual vegetation of drift lines in the North Dublin Bay SAC, which is to restore the favourable conservation condition of this Qualifying Interest (NPWS, 2013b).	The location of Annual vegetation of drift lines within the South Dublin Bay SAC is unknown as it has not been mapped. In line with the Precautionary Principle, this Qualifying Interest is assumed to be present in suitable habitat close to the Stradbrook Stream outfall. The Attributes of this Conservation Objective focuses on "*Habitat area*", "*Habitat distribution*", *"Physical structure", "Vegetation structure* and *"Vegetation composition"*. Annual vegetation of drift lines are a terrestrial habitat and thus have no hydrological connection to the proposed development. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development will not significantly affect this European site in view of its Conservation Objectives for this Qualifying Interest.**	No
***Salicornia* and other annuals colonising mud and sand [1310]**	*"To maintain or restore the favourable conservation condition of* Salicornia *and other annuals colonizing mud and sand in South Dublin Bay SAC",* Attributes and Targets for this Qualifying Interest have been taken from the Conservation Objective for Salicornia and other annuals colonising mud and sand in the North Dublin Bay SAC, which is to restore the favourable conservation	The closest known location of *Salicornia* and other annuals colonising mud and sand habitat within the South Dublin Bay SAC is in Booterstown Marsh (McCorry & Ryle, 2009). In line with the Precautionary Principle, this habitat is assumed to be present in the intertidal areas near the Stradbrook Stream outfall. The Attributes of these Conservation Objectives focus on "*Habitat area*", "*Habitat distribution*", *"Physical structure", "Vegetation structure* and *"Vegetation composition"*. *Construction Phase Impacts* During the construction of the proposed development, there is potential for accidental discharge of sediment and pollutants to impact this habitat in Dublin Bay which is 810 m downstream via surface water pathways and the Stradbrook Stream. *Operational Phase Impacts*	Yes

Qualifying Interest	Conservation Objective as per NPWS (2013a)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
	condition of this Qualifying Interest (NPWS, 2013b).	1. As described in Section 2.3, Ringsend WwTP is currently being upgraded in order to comply with the Urban Wastewater Treatment Directive. During the operational phase of the proposed development, wastewater will be conveyed to the Ringsend WwTP, which is currently treating wastewater for up to 2 million people. Considering this as well as the assimilative capacity of Dublin Bay, the proposed development will not measurably increase the foul water being supplied to Ringsend WwTP. 2. Untreated surface water from the site (i.e. accidental hydrocarbon leaks and subsequent discharge) has the potential to flow into the Stradbrook Stream which could lead to likely significant effects on the SAC. 3. During periods of high rainfall, the public surface water drainage system overflows into the foul water drainage system which can then become overloaded, releasing untreated foul water into Dublin Bay from overflows along South Dublin Bay. This will not constitute a likely significant effect, as the proposed development will not measurably increase the loading on the system. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development has the potential to cause likely significant effects on this European site in view of its Conservation Objectives for this Qualifying Interest.**	
Embryonic shifting dunes [2110]	*"To restore the favourable conservation condition of Embryonic shifting dunes in South Dublin Bay SAC".* Attributes and Targets for this Qualifying Interest have been taken from the Conservation Objective for Embryonic shifting dunes in the North Dublin Bay SAC, which is to restore the favourable conservation	The closest known location of Embryonic shifting dunes habitat within the South Dublin Bay SAC is in just north of Booterstown station (NPWS, 2015a). In line with the Precautionary Principle, this Qualifying Interest is assumed to be present in suitable habitat close to outfall locations along the South Dublin Bay. As per the North Dublin Bay SAC, the Attributes of these Conservation Objectives focus on "*Habitat area*", "*Habitat distribution*", *"Physical structure", "Vegetation structure* and *"Vegetation composition"*. Embryonic shifting dunes are a terrestrial habitat and thus have no hydrological connection to the proposed development.	No

Qualifying Interest	Conservation Objective as per NPWS (2013a)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
	condition of this Qualifying Interest (NPWS, 2013b).	**Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development will not significantly affect this European site in view of its Conservation Objectives for this Qualifying Interest.**	

Table 3.4 Evaluation of the likely significant effects of the proposed development in view of the Conservation Objectives of North Bull Island SPA [004006]

Qualifying Interest	Conservation Objective as per NPWS (2015d)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]	*"To maintain the favourable conservation condition of Light-bellied Brent Goose in North Bull Island SPA"*	The Attributes of these Conservation Objectives focus on "*Population trend*" and "*Distribution*". As explained in Table 3.2, the site of the proposed development or the habitats adjacent to it do not contain suitable habitat feeding, roosting or nesting habitat for these species. <u>*Construction Phase Impacts*</u> During the construction of the proposed development, there is potential for accidental discharge of sediment and pollutants to reach Dublin Bay via the Stradbrook Stream. However, considering the distance between the proposed development site and the assimilative capacity of Dublin Bay, any water quality impacts would have dissipated by the time they reached the North Bull Island SPA. There is no potential for noise and vibration impacts to cause disturbance to these species in the North Bull Island SPA due to the size of the proposed development, the 5.8 km distance and the ambient noise levels already present. <u>*Operational Phase Impacts*</u> 1. As described in Section 2.3, Ringsend WwTP is currently being upgraded in order to comply with the Urban Wastewater Treatment Directive. During the operational phase of the proposed development, wastewater will be conveyed to the Ringsend WwTP, which is currently treating wastewater for up to 2 million people. Considering this as well as the assimilative capacity of Dublin Bay, the proposed development will not measurably increase the foul water being supplied to Ringsend WwTP. 2. Untreated surface water from the site (i.e. accidental hydrocarbon leaks and subsequent discharge) has the potential to flow into the Stradbrook Stream and eventually into Dublin Bay. However, given the location of this site to the proposed development via the Stradbrook Stream, and the assimilative capacity of Dublin Bay, potential likely significant effects can be excluded.	No
Shelduck (*Tadorna tadorna*) [A048]	*"To maintain the favourable conservation condition of Shelduck in North Bull Island SPA"*		No
Teal (*Anas crecca*) [A052]	*"To maintain the favourable conservation condition of Teal in North Bull Island SPA"*		No
Pintail (*Anas acuta*) [A054]	*"To maintain the favourable conservation condition of Pintail in North Bull Island SPA"*		No
Shoveler (*Anas clypeata*) [A056]	*"To maintain the favourable conservation condition of Shoveler in North Bull Island SPA"*		No
Oystercatcher (*Haematopus ostralegus*) [A130]	*"To maintain the favourable conservation condition of Oystercatcher in North Bull Island SPA"*		No
Golden Plover (*Pluvialis apricaria*) [A140]	*"To maintain the favourable conservation condition of Grey Plover in North Bull Island SPA"*		No

Qualifying Interest	Conservation Objective as per NPWS (2015d)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Grey Plover (*Pluvialis squatarola*) [A141]	*"To maintain the favourable conservation condition of Grey Plover in North Bull Island SPA"*	3. During periods of high rainfall, the public surface water drainage system overflows into the foul water drainage system which can then become overloaded, releasing untreated foul water into Dublin Bay from overflows along South Dublin Bay. This will not constitute a likely significant effect, as the proposed development will not measurably increase the loading on the system. **There is no pathway for impacts between the proposed development and these qualifying interests. Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development will not significantly affect this European site in view of its Conservation Objectives for these Qualifying Interests.**	No
Knot (*Calidris canutus*) [A143]	*"To maintain the favourable conservation condition of Knot in North Bull Island SPA"*		No
Sanderling (*Calidris alba*) [A144]	*"To maintain the favourable conservation condition of Sanderling in North Bull Island SPA"*		No
Dunlin (*Calidris alpina alpina*) [A149]	*"To maintain the favourable conservation condition of Dunlin in North Bull Island SPA"*		No
Black-tailed Godwit (*Limosa limosa*) [A156]	*"To maintain the favourable conservation condition of Black-tailed Godwit in North Bull Island SPA"*		No
Bar-tailed Godwit (*Limosa lapponica*) [A157]	*"To maintain the favourable conservation condition of Bar-tailed Godwit in North Bull Island SPA"*		No
Curlew (*Numenius arquata*) [A160]	*"To maintain the favourable conservation condition of Curlew in North Bull Island SPA"*		No

Qualifying Interest	Conservation Objective as per NPWS (2015d)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Redshank (*Tringa totanus*) [A162]	*"To maintain the favourable conservation condition of Redshank in North Bull Island SPA"*		No
Turnstone (*Arenaria interpres*) [A169]	*"To maintain the favourable conservation condition of Turnstone in North Bull Island SPA"*		No
Black-headed Gull (*Chroicocephalus ridibundus*) [A179]	*"To maintain the favourable conservation condition of Black-headed Gull in North Bull Island SPA"*		No
Wetlands [A999]	*"To maintain the favourable conservation condition of the wetland habitat in North Bull Island SPA as a resource for the regularly occurring migratory waterbirds that utilise it"*	The Conservation Objective for Wetlands is defined by a single Attribute, namely "Habitat area", the Target for which is "*The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 1,713 hectares, other than that occurring from natural patterns of variation*". As the proposed development does not provide for any reduction in the permanent area of this habitat within the site, it has no potential to delay or interrupt the achievement of this Conservation Objective. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development will not significantly affect this European site in view of its Conservation Objectives for this Qualifying Interest.**	No

Table 3.5 Evaluation of the likely significant effects of the proposed development in view of the Conservation Objectives of the North Dublin Bay SAC [000206]

Qualifying Interest	Conservation Objective as per NPWS (2013c)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Mudflats and sandflats not covered by seawater at low tide [1140]	*"To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in North Dublin Bay SAC"*	The Attributes of this Conservation Objective focuses on "*Habitat Area*", "*Community Extent*"*, "Community Structure:* Mytilus edulis *density", "Community Distribution"*. Mudflats and sandflats not covered by seawater at low tide are located at the south-eastern side of Dollymount Strand on Bull Island (NPWS, 2013c). *Construction Phase Impacts* During the construction of the proposed development, there is potential for accidental discharge of sediment and pollutants to reach Dublin Bay via the Stradbrook Stream. However, considering the distance between the proposed development site and the assimilative capacity of Dublin Bay, any water quality impacts would have dissipated by the time they reached the North Dublin Bay SAC. *Operational Phase Impacts* 1. As described in Section 2.3, Ringsend WwTP is currently being upgraded in order to comply with the Urban Wastewater Treatment Directive. During the operational phase of the proposed development, wastewater will be conveyed to the Ringsend WwTP, which is currently treating wastewater for up to 2 million people. Considering this as well as the assimilative capacity of Dublin Bay, the proposed development will not measurably increase the foul water being supplied to Ringsend WwTP. 2. Untreated surface water from the site (i.e. accidental hydrocarbon leaks and subsequent discharge) has the potential to flow into the Stradbrook Stream and eventually into Dublin Bay. However, given the location of this site to the proposed development via the Stradbrook Stream, and the assimilative capacity of Dublin Bay, potential likely significant effects can be excluded. 3. During periods of high rainfall, the public surface water drainage system overflows into the foul water drainage system which can then become overloaded, releasing untreated foul water into Dublin Bay from overflows along South Dublin Bay. This will not constitute	No

Qualifying Interest	Conservation Objective as per NPWS (2013c)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
		a likely significant effect, as the proposed development will not measurably increase the loading on the system. **There is no pathway for impacts between the proposed development and this qualifying interest. Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development will not significantly affect this European site in view of its Conservation Objectives for this Qualifying Interest.**	
Annual vegetation of drift lines [1210]	*"To restore the favourable conservation condition of Annual vegetation of drift lines in North Dublin Bay SAC"*	The location of Annual vegetation of drift lines within the North Dublin Bay SAC is unknown as it has not been mapped. In line with the Precautionary Principle, this Qualifying Interest is assumed to be present in suitable habitat close to the Ringsend WwTP outfall location. The Attributes of this Conservation Objective focuses on "*Habitat area*", "*Habitat distribution*", *"Physical structure", "Vegetation structure* and *"Vegetation composition"*. Annual vegetation of drift lines are a terrestrial habitat and thus have no hydrological connection to the proposed development. **There is no pathway for impacts between the proposed development and this qualifying interest. Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development will not significantly affect this European site in view of its Conservation Objectives for this Qualifying Interest.**	No
***Salicornia* and other annuals colonising mud and sand [1310]**	*"To restore the favourable conservation condition of* Salicornia *and other annuals colonizing mud and sand in North Dublin Bay SAC"*	The Attributes of this Conservation Objective focuses on "*Habitat Area*", *"Habitat Distribution", "Physical Structure", "Vegetation Structure"* and *"Vegetation Composition"*. *Salicornia* and other annuals colonising mud and sand are located at the north-western side of Bull Island (NPWS, 2013c). <u>*Construction Phase Impacts*</u> During the construction of the proposed development, there is potential for accidental discharge of sediment and pollutants to reach Dublin Bay via the Stradbrook Stream. However, considering the distance between the proposed development site and the assimilative capacity of Dublin Bay, any water quality impacts would have dissipated by the time they reached the North Dublin Bay.	No

Qualifying Interest	Conservation Objective as per NPWS (2013c)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
		Operational Phase Impacts 1. As described in Section 2.3, Ringsend WwTP is currently being upgraded in order to comply with the Urban Wastewater Treatment Directive. During the operational phase of the proposed development, wastewater will be conveyed to the Ringsend WwTP, which is currently treating wastewater for up to 2 million people. Considering this as well as the assimilative capacity of Dublin Bay, the proposed development will not measurably increase the foul water being supplied to Ringsend WwTP. 2. Untreated surface water from the site (i.e. accidental hydrocarbon leaks and subsequent discharge) has the potential to flow into the Stradbrook Stream and eventually into Dublin Bay. However, given the location of this site to the proposed development via the Stradbrook Stream, and the assimilative capacity of Dublin Bay, potential likely significant effects can be excluded. 3. During periods of high rainfall, the public surface water drainage system overflows into the foul water drainage system which can then become overloaded, releasing untreated foul water into Dublin Bay from overflows along South Dublin Bay. This will not constitute a likely significant effect, as the proposed development will not measurably increase the loading on the system. **There is no pathway for impacts between the proposed development and this qualifying interest. Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development will not significantly affect this European site in view of its Conservation Objectives for this Qualifying Interest.**	
Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]	*"To maintain the favourable conservation condition of Atlantic Salt meadows (*Glauco-Puccinellietalia maritimae*) in North Dublin Bay SAC"*	The Attributes of this Conservation Objective focuses on "*Habitat Area*", *"Habitat Distribution", "Physical Structure", "Vegetation Structure"* and *"Vegetation Composition"*. Atlantic Salt meadows *(Glauco-Puccinellietalia maritimae)* and Mediterranean salt meadows *(Juncetalia maritime)* are located at the north-western and north-eastern sides of Bull Island, respectively (NPWS, 2013c).	No

Qualifying Interest	Conservation Objective as per NPWS (2013c)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Mediterranean salt meadows (*Juncetalia maritime)* [1410]	*"To maintain the favourable conservation condition of Mediterranean salt meadows (*Juncetalia maritime*) in North Dublin Bay SAC"*	*Construction Phase Impacts* During the construction of the proposed development, there is potential for accidental discharge of sediment and pollutants to reach Dublin Bay via the Stradbrook Stream. However, considering the distance between the proposed development site and the assimilative capacity of Dublin Bay, any water quality impacts would have dissipated by the time they reached the North Dublin Bay. *Operational Phase Impacts* 1. As described in Section 2.3, Ringsend WwTP is currently being upgraded in order to comply with the Urban Wastewater Treatment Directive. During the operational phase of the proposed development, wastewater will be conveyed to the Ringsend WwTP, which is currently treating wastewater for up to 2 million people. Considering this as well as the assimilative capacity of Dublin Bay, the proposed development will not measurably increase the foul water being supplied to Ringsend WwTP. 2. Untreated surface water from the site (i.e. accidental hydrocarbon leaks and subsequent discharge) has the potential to flow into the Stradbrook Stream and eventually into Dublin Bay. However, given the location of this site to the proposed development via the Stradbrook Stream, and the assimilative capacity of Dublin Bay, potential likely significant effects can be excluded. 3. During periods of high rainfall, the public surface water drainage system overflows into the foul water drainage system which can then become overloaded, releasing untreated foul water into Dublin Bay from overflows along South Dublin Bay. This will not constitute a likely significant effect, as the proposed development will not measurably increase the loading on the system. **There are no pathway for impacts between the proposed development and these qualifying interests. Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development will not significantly affect this European site in view of its Conservation Objectives for these Qualifying Interests.**	No

Qualifying Interest	Conservation Objective as per NPWS (2013c)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Embryonic shifting dunes [2110]	*"To restore the favourable conservation condition of Embryonic shifting dunes in North Dublin Bay SAC"*	The Attributes of these Conservation Objectives focuses on "*Habitat Area*", *"Habitat Distribution", "Physical Structure", "Vegetation Structure"* and *"Vegetation Composition"*. These Qualifying Interests are located at the south-eastern side of Bull Island (NPWS, 2013c). These are terrestrial habitats and thus have no hydrological connection to the proposed development. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development will not significantly affect this European site in view of its Conservation Objectives for these Qualifying Interests.**	No
Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]	*"To restore the favourable conservation condition of Shifting dunes along the shoreline with* Ammophila arenaria *('white dunes') in North Dublin Bay SAC"*		
Fixed coastal dunes with herbaceous vegetation (grey dune) [2130]	*"To restore the favourable conservation condition of fixed coastal dunes with herbaceous vegetation ('grey dunes') in North Dublin Bay SAC"*		
Humid dune slacks [2190]	*"To restore the favourable conservation condition of Humid dune slacks in North Dublin Bay SAC"*		
Petalwort *Petalophyllum ralfsii [1395]*	*"To maintain the favourable conservation condition of Petalwort in North Dublin Bay SAC"*	The Attributes of this Conservation Objective focuses on "*Distribution of populations*", *"Population size", "Area of suitable habitat", "Hydrological conditions"* and *"Vegetation Structure".* Petalwort are located among the fixed dunes at the north-eastern side of Bull Island among (NPWS, 2013c). Petalwort is a terrestrial species and thus has no hydrological connection to the proposed development. **There are no pathway for impacts between the proposed development and this qualifying interest. Therefore, it can be concluded beyond reasonable scientific**	No

Qualifying Interest	Conservation Objective as per NPWS (2013c)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
		doubt that the proposed development will not significantly affect this European site in view of its Conservation Objectives for this Qualifying Interest.	

Table 3.6 Evaluation of the likely significant effects of the proposed development in view of the Conservation Objectives of the Baldoyle Bay SPA [004016].

Qualifying Interest	Conservation Objective as per NPWS (2013e)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]	*"To maintain the favourable conservation condition of Light-bellied Brent Goose in Baldoyle Bay SPA"*	The Attributes of these Conservation Objectives focus on "*Population trend*" and "*Distribution*". As explained in Table 3.2, the site of the proposed development or the habitats adjacent to it do not contain suitable habitat feeding, roosting or nesting habitat for these species. <u>*Construction Phase Impacts*</u> During the construction of the proposed development, there is potential for accidental discharge of sediment and pollutants to reach Dublin Bay via the Stradbrook Stream. However, considering the distance between the proposed development site and the assimilative capacity of Dublin Bay, any water quality impacts would have dissipated by the time they reached the Baldoyle Bay SPA. There is no potential for noise and vibration impacts to cause disturbance to these species in the Baldoyle Bay SPA due to the size of the proposed development, the distance and the ambient noise levels already present. <u>*Operational Phase Impacts*</u> 1. As described in Section 2.3, Ringsend WwTP is currently being upgraded in order to comply with the Urban Wastewater Treatment Directive. During the operational phase of the proposed development, wastewater will be conveyed to the Ringsend WwTP, which is currently treating wastewater for up to 2 million people. Considering this as well as the	No
Shelduck (*Tadorna tadorna*) [A048]	*"To maintain the favourable conservation condition of Shelduck in Baldoyle Bay SPA"*		No
Ringed Plover (*Charadrius hiaticula*) [A137]	*"To maintain the favourable conservation condition of Ringed Plover in Baldoyle Bay SPA"*		No
Golden Plover (*Pluvialis apricaria*) [A140]	*"To maintain the favourable conservation condition of Golden Plover in Baldoyle Bay SPA"*		No
Grey Plover (*Pluvialis squatarola*) [A140]	*"To maintain the favourable conservation condition of Grey Plover in Baldoyle Bay SPA"*		No

Qualifying Interest	Conservation Objective as per NPWS (2013e)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Bar-tailed Godwit (*Limosa lapponica*) [A157]	*"To maintain the favourable conservation condition of Bar-tailed Godwit in Baldoyle Bay SPA"*	assimilative capacity of Dublin Bay, the proposed development will not measurably increase the foul water being supplied to Ringsend WwTP. 2. Untreated surface water from the site (i.e. accidental hydrocarbon leaks) has the potential to flow into the Stradbrook Stream and eventually into Dublin Bay. However, given the location of this site to the proposed development via the Stradbrook Stream, and the assimilative capacity of Dublin Bay, potential likely significant effects can be excluded. 3. During periods of high rainfall, the public surface water drainage system overflows into the foul water drainage system which can then become overloaded, releasing untreated foul water into Dublin Bay from overflows along South Dublin Bay. This will not constitute a likely significant effect, as the proposed development will not measurably increase the loading on the system. **There are no pathway for impacts between the proposed development and these qualifying interests. Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development will not significantly affect this European site in view of its Conservation Objectives for these Qualifying Interests.**	No
Wetlands [A999]	*"To maintain the favourable conservation condition of the wetland habitat in Baldoyle Bay SPA as a resource for the regularly occurring migratory waterbirds that utilise it"*	The Conservation Objective for Wetlands is defined by a single Attribute, namely "Habitat area", the Target for which is "*The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 263 hectares, other than that occurring from natural patterns of variation*". As the proposed development does not provide for any reduction in the permanent area of this habitat within the site, it has no potential to delay or interrupt the achievement of this Conservation Objective. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development will not significantly affect this European site in view of its Conservation Objectives for this Qualifying Interest.**	No

Table 3.7 Evaluation of the likely significant effects of the proposed development in view of the Conservation Objectives of the Dalkey Islands SPA [004172].

Qualifying Interest	Conservation Objective as per NPWS (2022a)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Roseate Tern (*Sterna dougallii*) [A192]	*"To maintain the favourable conservation condition of Roseate Tern in Dalkey Islands SPA"* as per Rockabill SPA (NPWS, 2013i)	The Attributes of these Conservation Objectives focus on "*Breeding population abundance*", *"Productivity rate", "Distribution", "Prey biomass availability", "Barriers to connectivity"* and "*Disturbance at breeding site*". As explained in Table 3.2, the site of the proposed development or the habitats adjacent to it do not contain suitable habitat feeding, roosting or nesting habitat for these species. These qualifying interests feed in Dublin Bay around Dún Laoghaire Harbour and their conservation objectives for the Dalkey Islands SPA may therefore be affected as a result of the proposed development. <u>*Construction Phase Impacts*</u> During the construction of the proposed development, there is potential for accidental discharge of sediment and pollutants to reach the Dalkey Islands SPA via the Stradbrook Stream and Dublin Bay. There is no potential for noise and vibration impacts to cause disturbance to these species in the Dalkey Islands SPA due to the size of the proposed development, the distance and the ambient noise levels already present. <u>*Operational Phase Impacts*</u> 1. As described in Section 2.3, Ringsend WwTP is currently being upgraded in order to comply with the Urban Wastewater Treatment Directive. During the operational phase of the proposed development, wastewater will be conveyed to the Ringsend WwTP, which is currently treating wastewater for up to 2 million people. Considering this as well as the assimilative capacity of Dublin Bay, the proposed development will not measurably increase the foul water being supplied to Ringsend WwTP. 2. Untreated surface water from the site (i.e. accidental hydrocarbon leaks) has the potential to flow into the Stradbrook Stream and eventually into Dublin Bay. However, given the location of this site to the proposed development via the Stradbrook Stream, and the assimilative capacity of Dublin Bay, potential likely significant effects can be excluded.	Yes
Common Tern (*Sterna hirundo*) [A193]	*"To maintain the favourable conservation condition of Common Tern in Dalkey Islands SPA"* as per Rockabill SPA (NPWS, 2013i)		Yes
Arctic Tern (*Sterna paradisaea*) [A194]	*"To maintain the favourable conservation condition of Arctic Tern in Dalkey Islands SPA"* as per Rockabill SPA (NPWS, 2013i)		Yes

Qualifying Interest	Conservation Objective as per NPWS (2022a)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
		3. During periods of high rainfall, the public surface water drainage system overflows into the foul water drainage system which can then become overloaded, releasing untreated foul water into Dublin Bay from overflows along South Dublin Bay. This will not constitute a likely significant effect, as the proposed development will not measurably increase the loading on the system. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development has the potential to cause likely significant effects on this European site in view of its Conservation Objectives for these Qualifying Interests.**	

Table 3.8 Evaluation of the likely significant effects of the proposed development in view of the Conservation Objectives of the Rockabill to Dalkey Island SAC [003000].

Qualifying Interest	Conservation Objective as per NPWS (2013g)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Reefs [1170]	*"To maintain the favourable conservation condition of Reefs in Rockabill to Dalkey Island SAC"*	The Attributes of these Conservation Objectives focus on "*Habitat area*", *"Habitat distribution",* and "*Community structure*". Reefs are located around the south coast of Howth Head surround the entirety of Dalkey Island (NPWS, 2013g). <u>*Construction Phase Impacts*</u> During the construction of the proposed development, there is potential for accidental discharge of sediment and pollutants to reach Dublin Bay via the Stradbrook Stream. However, considering the distance between the proposed development site and the assimilative capacity of Dublin Bay, any water quality impacts would have dissipated by the time they reached the Rockabill to Dalkey Island SAC. <u>*Operational Phase Impacts*</u> 1. As described in Section 2.3, Ringsend WwTP is currently being upgraded in order to comply with the Urban Wastewater Treatment Directive. During the operational phase of the proposed development, wastewater will be conveyed to the Ringsend WwTP, which is currently treating wastewater for up to 2 million people. Considering this as well as the assimilative capacity of Dublin Bay, the proposed development will not measurably increase the foul water being supplied to Ringsend WwTP. 2. Untreated surface water from the site (i.e. accidental hydrocarbon leaks) has the potential to flow into the Stradbrook Stream and eventually into Dublin Bay. However, given the location of this site to the proposed development via the Stradbrook Stream, and the assimilative capacity of Dublin Bay, potential likely significant effects can be excluded. 3. During periods of high rainfall, the public surface water drainage system overflows into the foul water drainage system which can then become overloaded, releasing untreated foul water into Dublin Bay from overflows along South Dublin Bay. This will not constitute a likely significant effect, as the proposed development will not measurably increase the loading on the system.	No

Qualifying Interest	Conservation Objective as per NPWS (2013g)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
		There are no pathway for impacts between the proposed development and this qualifying interest. Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development will not significantly affect this European site in view of its Conservation Objectives for this Qualifying Interest.	
Harbour Porpoise (*Phocoena phocoena*) [1351]	*"To maintain the favourable conservation condition of Harbour Porpoise in Rockabill to Dalkey Island SAC"*	The Attributes of these Conservation Objectives focus on "*Access to suitable habitat*", and "*Disturbance*". There will be no works occurring in or adjacent to suitable Harbour Porpoise habitat. Therefore, there is no potential for Harbour Porpoise to be restricted access to suitable habitat, nor will there be any disturbance impacts to Harbour Porpoise in the Rockabill to Dalkey Island SAC as a result of the proposed development. **There are no pathway for impacts between the proposed development and this qualifying interest. Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development will not significantly affect this European site in view of its Conservation Objectives for this Qualifying Interest.**	No

Table 3.9 Evaluation of the likely significant effects of the proposed development in view of the Conservation Objectives of the Howth Head Coast SPA [004113].

Qualifying Interest	Conservation Objective as per NPWS (2022b)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Kittiwake (*Rissa tridactyla*) [A188]	*"To maintain the favourable conservation condition of Kittiwake in Howth Head Coast SPA"* as per Saltee Islands SPA (NPWS, 2011c)	The Attributes of these Conservation Objectives focus on "*Breeding population abundance*", *"Productivity rate", "Distribution", "Prey biomass availability", "Barriers to connectivity"* and "*Disturbance at breeding site*". As explained in Table 3.2, the site of the proposed development or the habitats adjacent to it do not contain suitable habitat feeding, roosting or nesting habitat for these species. *Construction Phase Impacts* During the construction of the proposed development, there is potential for accidental discharge of sediment and pollutants to reach Dublin Bay via the Stradbrook Stream. However, considering the distance between the proposed development site and the assimilative capacity of Dublin Bay, any water quality impacts would have dissipated by the time they reached the Howth Head Coast SPA. There is no potential for noise and vibration impacts to cause disturbance to these species in the Howth Head Coast SPA due to the size of the proposed development, the distance and the ambient noise levels already present. *Operational Phase Impacts* 1. As described in Section 2.3, Ringsend WwTP is currently being upgraded in order to comply with the Urban Wastewater Treatment Directive. During the operational phase of the proposed development, wastewater will be conveyed to the Ringsend WwTP, which is currently treating wastewater for up to 2 million people. Considering this as well as the assimilative capacity of Dublin Bay, the proposed development will not measurably increase the foul water being supplied to Ringsend WwTP. 2. Untreated surface water from the site (i.e. accidental hydrocarbon leaks) has the potential to flow into the Stradbrook Stream and eventually into Dublin Bay. However, given the location of this site to the proposed development via the Stradbrook Stream, and the assimilative capacity of Dublin Bay, potential likely significant effects can be excluded.	No

Qualifying Interest	Conservation Objective as per NPWS (2022b)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
		3. During periods of high rainfall, the public surface water drainage system overflows into the foul water drainage system which can then become overloaded, releasing untreated foul water into Dublin Bay from overflows along South Dublin Bay. This will not constitute a likely significant effect, as the proposed development will not measurably increase the loading on the system. **There are no pathway for impacts between the proposed development and this qualifying interest. Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development will not significantly affect this European site in view of its Conservation Objectives for this Qualifying Interest.**	

Table 3.10 Evaluation of the likely significant effects of the proposed development in view of the Conservation Objectives of the Howth Head SAC [000202].

Qualifying Interest	Conservation Objective as per NPWS (2016a)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	*"To maintain the favourable conservation condition of Vegetated sea cliffs of the Atlantic and Baltic coasts in Howth Head SAC"*	The Attributes of these Conservation Objectives focus on "*Habitat length*", *"Habitat distribution", "Physical structure", Vegetation structure"* and *"Vegetation composition"*. Vegetated sea cliffs of the Atlantic and Baltic coasts are located around the east coast of Howth Head (NPWS, 2016a). This is a terrestrial habitat and thus has no hydrological connection to the proposed development. **There are no pathway for impacts between the proposed development and this qualifying interest. Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development will not significantly affect this European site in view of its Conservation Objectives for this Qualifying Interest.**	No
European dry heaths [4030]	*"To maintain the favourable conservation condition of European dry heaths in Howth Head SAC"*	The Attributes of these Conservation Objectives focus on "*Habitat area*", *"Habitat distribution", "Ecosystem function", "Community diversity", "Vegetation composition"* and *Vegetation structure"*. This is a terrestrial habitat and thus has no hydrological connection to the proposed development. **There are no pathway for impacts between the proposed development and this qualifying interest. Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development will not significantly affect this European site in view of its Conservation Objectives for this Qualifying Interest.**	No

Table 3.11 Evaluation of the likely significant effects of the proposed development in view of the Conservation Objectives of the Ireland's Eye SPA [004117].

Qualifying Interest	Conservation Objective as per NPWS (2022c)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Cormorant (*Phalacrocorax carbo*) [A017]	*"To maintain the favourable conservation condition of Cormorant in Ireland's Eye SPA"* as per Saltee Islands SPA (NPWS, 2011c)	The Attributes of these Conservation Objectives focus on "*Breeding population abundance*", *"Productivity rate", "Distribution", "Prey biomass availability", "Barriers to connectivity"* and "*Disturbance at breeding site*" with *"Disturbance at marine areas immediately adjacent to the colony"* listed as additional Conservation Objectives for Guillemot and Razorbill. As explained in Table 3.2, the site of the proposed development or the habitats adjacent to it do not contain suitable habitat feeding, roosting or nesting habitat for these species. <u>*Construction Phase Impacts*</u> During the construction of the proposed development, there is potential for accidental discharge of sediment and pollutants to reach Dublin Bay via the Stradbrook Stream. However, considering the distance between the proposed development site and the assimilative capacity of Dublin Bay, any water quality impacts would have dissipated by the time they reached the Ireland's Eye SPA. There is no potential for noise and vibration impacts to cause disturbance to these species in the Ireland's Eye SPA due to the size of the proposed development, the distance and the ambient noise levels already present. <u>*Operational Phase Impacts*</u> 1. As described in Section 2.3, Ringsend WwTP is currently being upgraded in order to comply with the Urban Wastewater Treatment Directive. During the operational phase of	No
Herring Gull (*Larus argentatus*) [A184]	*"To maintain the favourable conservation condition of Herring Gull in Ireland's Eye SPA"* as per Saltee Islands SPA (NPWS, 2011c)		No
Kittiwake (*Rissa tridactyla*) [A188]	*"To maintain the favourable conservation condition of Kittiwake in Ireland's Eye SPA"* as per Saltee Islands SPA (NPWS, 2011c)		No
Guillemot (*Uria aalge*) [A199]	*"To maintain the favourable conservation condition of Guillemot in Ireland's Eye SPA"* as per Saltee Islands SPA (NPWS, 2011c)		No

Qualifying Interest	Conservation Objective as per NPWS (2022c)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Razorbill (*Alca torda*) [A200]	*"To maintain the favourable conservation condition of Razorbill in Ireland's Eye SPA"* as per Saltee Islands SPA (NPWS, 2011c)	the proposed development, wastewater will be conveyed to the Ringsend WwTP, which is currently treating wastewater for up to 2 million people. Considering this as well as the assimilative capacity of Dublin Bay, the proposed development will not measurably increase the foul water being supplied to Ringsend WwTP. 2. Untreated surface water from the site (i.e. accidental hydrocarbon leaks) has the potential to flow into the Stradbrook Stream and eventually into Dublin Bay. However, given the location of this site to the proposed development via the Stradbrook Stream, and the assimilative capacity of Dublin Bay, potential likely significant effects can be excluded. 3. During periods of high rainfall, the public surface water drainage system overflows into the foul water drainage system which can then become overloaded, releasing untreated foul water into Dublin Bay from overflows along South Dublin Bay. This will not constitute a likely significant effect, as the proposed development will not measurably increase the loading on the system. **There are no pathway for impacts between the proposed development and these qualifying interests. Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development will not significantly affect this European site in view of its Conservation Objectives for these Qualifying Interests.**	No

3.4 Summary of Likely Significant Effects

In Section 3.1, it was established that twelve European sites, namely the South Dublin Bay and River Tolka Estuary SPA, the South Dublin Bay SAC, the North Bull Island SPA, the North Dublin By SAC, the Baldoyle Bay SPA, the Baldoyle Bay SAC, the Dalkey Islands SPA, the Rockabill to Dalkey Island SAC, the Howth Head Coast SPA, the Howth Head Coast SAC, the Ireland's Eye SPA and the Ireland's Eye SAC occur within the zone of influence of the proposed development and that there are no pathways for effects between the proposed development and any other European sites. The SAC and SPAs were described in detail in Section 3.2.

In Section 3.3, it was established, in light of best scientific knowledge, that the proposed development will give rise to ecological impacts which would constitute likely significant effects on the SAC or SPAs, in view of the sites' Conservation Objectives. This finding had regard to the nature, size and location of the proposed development, the assimilative capacity of Dublin Bay, the existing levels of noise and visual disturbance in the area and the sensitivities of the Qualifying Interest of the sites concerned. A summary of the qualifying interests in each European site likely to be affected is provided in Table 3.12 below.

Table 3.12 Summary of the European sites likely to be affected by the proposed development and the Qualifying Interests likely to be affected in each site.

European site	Qualifying Interest
South Dublin Bay and River Tolka Estuary SPA [004024]	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Oystercatcher (*Haematopus ostralegus*) [A130] Ringed Plover (*Charadrius hiaticula*) [A137] Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Bar-tailed Godwit (*Limosa lapponica*) [A157] Redshank (*Tringa totanus*) [A162] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Roseate Tern (*Sterna dougallii*) [A192] Common Tern (*Sterna hirundo*) [A193] Arctic Tern (*Sterna paradisaea*) [A194]
South Dublin Bay SAC [000210]	Mudflats and sandflats not covered by seawater at low tide [1140] *Salicornia* and other annuals colonising mud and sand [1310]
Dalkey Islands SPA [004172]	Roseate Tern (*Sterna dougallii*) [A192] Common Tern (*Sterna hirundo*) [A193] Arctic Tern (*Sterna paradisaea*) [A194]

4. IN-COMBINATION ASSESSMENT

Article 6(3) of the Habitats Directive requires that AA be carried out in respect of any plan or project which is likely to have a significant effect on one or more European sites, "either individually or in combination with other plans or projects". Therefore, regardless of whether or not the likely effects of a plan or project are significant when considered in isolation, the potential for the plan or project to significantly affect European sites in combination with other past, present or foreseeable future plans or projects must also be assessed.

In the case of the proposed development, this AA Screening Report has found that the proposed development, individually, is likely to have significant effects on three European sites. Therefore, the assessment of the proposed development must proceed to Stage 2 (AA). The in-combination assessment of likely significant effects on these European sites arising from the proposed development, in combination with other plans or projects, should be undertaken at that stage.

5. CONCLUSION

In accordance with Article 6(3) of the Habitats Directive, Part 5 of the Birds and Natural Habitats Regulation, Part XAB of the Planning and Development Acts, the relevant case law, established best practice and the Precautionary Principle, this AA Screening Report has examined the details of the proposed Dalguise House Large-Scale Residential Development and its potential to significantly affect European sites. This report has concluded, on the basis of objective information, that the proposed development, either individually or in combination with other plans or projects, is likely to give rise to impacts which would constitute significant effects on three European sites, namely the South Dublin Bay and River Tolka Estuary SPA, the South Dublin Bay SAC and the Dalkey Islands SPA, in view of their Conservation Objectives.

In light of this conclusion, it is the considered opinion of ROD, as the author of this AA Screening Report, that Dún Laoghaire Rathdown County Council, as the Competent Authority in this case, in completing its AA Screening in respect of the proposed development, should find that the proposed development, either individually or in combination with other plans or projects, is likely to have a significant effect on three European sites, namely the South Dublin Bay and River Tolka Estuary SPA, the South Dublin Bay SAC and the Dalkey Islands SPA, in view of their Conservation Objectives. Therefore, Dún Laoghaire Rathdown County Council should determine that AA is required in respect of the proposed development.

The Council's AA determination must contain complete, precise and definitive findings and conclusions in relation to the implications of the proposed development for the integrity of the South Dublin Bay and River Tolka Estuary SPA, the South Dublin Bay SAC and the Dalkey Islands SPA. A Natura Impact Statement (NIS) should be prepared to provide the Council with the scientific information upon which it will base its findings and conclusions. The NIS should take the form of a comprehensive examination, analysis and evaluation, including recommendations, in respect of the implications of the proposed development, individually and in combination with other plans and projects, for the integrity of the European sites concerned.

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APPENDIX A

Description of the Proposed Development

5.0 DESCRIPTION OF THE PROPOSED PROJECT

5.1 Introduction

This Chapter, in accordance with Article 5(1)(a) of the EIA Directive, provides: *"…information on the site, design, size and other relevant features of the project".*

The assessment provided in the following Chapters, undertaken by the various specialists, is underpinned by the description of the project as set out below.

5.2 Background to the Site

5.2.1 Site History

In terms of the site history, Dalguise House appears on the First Edition Ordnance map of 1837, where it is named '*Richmond Cottage*'. On that map the footprint of the main body of the house appears similar to the present footprint of the main house, but the 1837 map shows a large south western extension or wing that is no longer there. The curved outline of the large walled garden appears on the 1837 map as, do the stable yard and some of the present stable buildings. On the 1837 map there is a gate lodge shown at the shared entrance to Dalguise and Carrick Brennan from Monkstown Road, but this does not have the same footprint as the present gate lodge at that location.

On the 25 inch 1907 Ordnance map the house has been renamed as Dalguise. The present three storey western extension is on the 1907 map, but the earlier southern wing at the west end of the house is gone. The footprint of the gate lodge at Monkstown Road appears to be similar to that of the present gate lodge at that location. At the south end of the lane, the 1907 map shows two further gate lodges, one each for Dalguise and Carrick Brennan, strongly suggesting that the gate lodge at the Monkstown Road end of the lane was intended to serve both houses.

One previous planning application, lodged under ABP Reg. Ref. 30694920, has been made in respect of the subject site: a Strategic Housing Development (SHD) of 300 No. units, subsequently reduced by ten in the Permission to comprise 266 No. apartment units across 8 No. blocks, ranging in height from 5 to 9 storeys, and 24 No. houses, including within the existing structures on the site (total 290 No. units). A creche was also provided under the application, as well as communal recreational facilities and 314 No. car parking spaces and 654 No. bicycle parking spaces.

In addition to the existing vehicular and pedestrian access, it was proposed to provide a further access to Monkstown Road, via Purbeck, and to facilitate additional pedestrian/cycle connects to adjoining roads to the east and west. The scheme was for 'conventional' residential units – not BTR.

That Application was granted by An Bord Pleanála, subject to 31 No. conditions. This included a condition requiring a reduction in height (by one storey) of 2 No. blocks. The condition meant the removal of 10 No. apartments, reducing the overall number of dwelling units to 290 No. The decision was subject to Judicial Review and was subsequently overturned by the High Court. According to the Judgment, the judge found that ABP had erred in their conclusion that the submitted EIA Screening Report adequately described the effects that the proposed development would have on the environment. He also found that ABP had not given adequate reasons for its EIA Screening decision that the proposed development would have an insignificant effect on cultural heritage. The judge further held that in its decision to grant permission ABP erred by relying on a Specific Planning Policy Requirement concerning building height guidelines and found that the height of the proposed development did materially contravene Dún Laoghaire-Rathdown's building height policy.

In the light of the foregoing, no extensive development has been undertaken on the land in recent years.

5.2.3 Site Location and Surrounding Area

The subject site of c. 3.58 hectares lies on an existing residential property within the built-up area of Monkstown approximately 1.5 km west of Dún Laoghaire town centre and c. 1.5 km southeast of Blackrock village. The site is within walking distance of Monkstown Village, c. 250 m, which provides a range of local services.

The site is connected to Monkstown Road to the north via an avenue of c. 80m which serves as the vehicular and pedestrian access. It is bounded to the north by modern residential dwellings at Drayton Close, Purbeck and Heathfield; to the south by rear gardens of houses at Brook Court; to the east by the rear gardens and sides of houses at Richmond Park and family hub housing; and residential developments to the west, Southdale, Arundel and The Orchard. The housing in the area is a mix of ages, with more modern infill developments to the rear of large older structures along Monkstown Road.

In terms of statutory designations, Dalguise House is the only Protected Structure (RPS No. 870) on the site according to the *Dún Laoghaire- Rathdown County Development Plan 2022-2028.*

The site is located within 500m (5 minutes' walk) from the Salthill and Monkstown Dart Station. This station provides service for Dart suburban rail service direct to Connolly Station, where it connects to the national rail network. There are also a number of bus stops within 200 metres of the site, served by routes 7 and 7A, which connect the site to Mountjoy Square to the north to Brides Glen Luas/Loughlinstown. A further bus stop at Temple Hill (c. 800 m to the west) is served by routes 4; 46E; 84; 84A.

The proposed development will be fully accessible for pedestrians, cyclists, and the mobility impaired and disabled. All the surrounding main roads have adequate width footpaths on both sides and crossing facilities at junctions. Along the R119 Monkstown Road footpath width on the south side is approximately 1.8m and between 2-2.5m on the northern side. In terms of cyclist accessibility, cycle facilities are present along the R119 Monkstown Road. These connect to express routes to the city centre along both the Blackrock Road and Coast Road corridors. These major routes are subject to ongoing improvement as part of the implementation of the GDA Cycle Network Plan and the BusConnects programme.

The site is served by an existing schools' network of 16 No. primary schools (incl. 7 No Special education schools) and 8 No. post-primary schools, as well as 31 No. existing childcare facilities within c. 2km of the proposed development. A total of 31 No. operational childcare facilities were identified within a c. 2km radius of the subject site (equivalent to a c. 15-minutes' drive time).

Other adult education and training facilities such as the Lumen Dominican Centre, Dún Laoghaire Community Training Centre, Tivoli Training Centre, and Blackrock Education Centre are also available to local residents. Additionally, there are also third level institutions such as the National Film School, UCD Michael Smurfit Graduate Business School and the Dun Laoghaire Institute of Art, Design, and Technology which are located within 1-2km from the subject lands.

The subject site is supported by a number of local community facilities, including the Urban Junction, Central Dun Laoghaire Senior Citizens, The Beat Youth Café, Blackrock Community Men's Shed, Kill o' the Grange Parish Hall, Boylan Community Centre, Foxrock Parish Pastoral Centre, Holy Family Parish Resource Centre, Mountown Community Facility. The Blackrock Library and the DLR Lexicon are located just over 1km from the subject site.

Extensive open space and recreational grounds are located in the area, including several parks such as Dunedin Park, Vesey Gardens, Temple Park, De Vesci Gardens, Soldiers and Sailors Park, Longford Park, Belgrave Square, and Apna Park (Picnic site) along with the Soldiers and Sailors playground which are located under 1km from the subject lands.

There are also a number of sports facilities such as the Monkstown Pool & Fitness Centre, Blackrock College RFC, Newpark School Sports Centre, Newpark Swimming Pool, Harbour Splash and the Monkstown Swimming Pool in close proximity the subject lands.

The study area is located within c.2km from a number or larger retail centres such as Dún Laoghaire Shopping Centre, Bloomfields Shopping Centre, Frascati Shopping Centre, Blackrock Village Centre, and the Park Pointe Retail Centre along with a few marketplaces such as the Blackrock Market, the People's Park Sunday Market and the Blackrock Food Market.

There are also a number of supermarkets and greengrocers in close proximity including, Tesco, SuperValu, ALDI, Lidl, Avoca Food Market, Dunnes Stores, and T. Murphy along with a number of local convenience shops.

5.2.4 Site Specific Flood Risk Assessment (SSFRA)

As stated in Section 10.3.2 and Section 10.4.2.2 of Chapter 10 (Hydrology), a Stage 3 Flood Risk Assessment was carried out by McCloy Consulting in 2023 for the proposed development site. This flood risk assessment has been carried out in accordance with the OPW publication *"The Planning System and Flood Risk Assessment Guidelines for Planning Authorities".*

The site-specific hydraulic modelling revealed that proposed development is outside the present day and climate change 1% AEP and 0.1% AEP fluvial floodplain of the Stradbrook Stream. It has also shown that the proposed development will not have any off-site effect / increase in flood risk elsewhere. The site has been shown to be partly affected by flooding, however. Therefore, the 'sequential approach' has been applied to the existing flood scenario at the site as follows (McCloy Consulting, 2023):

- Highly vulnerable development (residential) has been wholly located in Flood Zone C / outside the 0.1% AEP floodplain.
- Less vulnerable development (access roads, car parking) has been located in Flood Zone C / outside the 0.1% AEP floodplain with the exception of the watercourse crossing and associated access roads in the vicinity which are necessary to provide site access. Finished levels in those areas are subsequently raised relative to adjacent flood levels and have a post-development probability of flooding equivalent to Flood Zone C. It is noted that proposed levels of the watercourse crossing and connecting roads will ensure they lie outside / above the 0.1% AEP flood level.
- Open green space (non-amenity) areas are sited within Flood Zone A but are considered appropriate as such under the OPW Guidelines.

Furthermore, the site-specific hydraulic modelling has shown that the proposed development will not have any off-site effect / increase in flood risk elsewhere.

5.2.5 Existing Site Access

The site is currently accessed via the vehicular entrance to Dalguise House off the R119 Monkstown Road. The site is currently served by a single access point only.

5.3 The Need for the Proposed Project

The proposed project, a large-scale residential development, is supported by planning policy at all tiers. The project delivers a significant number of new homes as required to meet housing objectives outlined throughout the relevant policy documents. The relevant national, regional and local planning policy is outlined in in Chapter 3 (Planning and Development Context) and further in the supporting planning documentation.

The Applicant GEDV Monkstown Owner Limited will operate the proposed scheme as part of the Greystar group. Greystar is the global leader in rental housing; it provides a full suite of services from design, development and operation of high-quality residential assets worldwide, with developments in Europe, North and South America, Asia and Australia. With over 750,000 units managed globally, Greystar has been delivering residential rental opportunities for over 30 years and has been operating in Ireland since 2019.

Greystar currently operates two schemes in Ireland:

- Griffith Wood, Dublin 9 (342 No. units) operational since December 2021; and
- Dublin Landings, North Wall Quay (268 No. units) operational since December 2019.

Dalguise will be the first scheme in Ireland that Greystar have brought from design to operation. The scheme will reflect Greystar's long-term experience as a world class operator and will deliver the quality of residential units and associated amenities that residents of Greystar's schemes expect within an accessible, high-quality environment all of which result in an exceptional living experience.

Greystar are long term operators and holders of residential communities. This is a very different approach to other developers in the market whose investment ethos is to sell on completion. Greystar is highly motivated by the long-term success of the scheme as a high quality, well integrated residential community that is directly managed by a team of on site, directly hired personnel.

Greystar's central management system is critical to its success. Each development has dedicated on-site staff, who provide a 24-hour service. This ensures that any repairs or operational difficulties can be addressed promptly. Management staff are familiar with the specific development and residents, which also improves residents' experiences and supports Greystar's high-quality services. The on-site management also ensures that car, motorcycle and cycle parking can be managed effectively, and that mobility measures set out in a Travel Plan can be implemented successfully.

The provision of publicly accessible services such as the Restaurant, Childcare Facility and public open space accords with Greystar's goals to integrate their developments with the local community and area.

The Applicants for this scheme are market leaders in the delivery and operation of Build-to-Rent (BTR) developments and they consider this development will be their flagship development in Ireland and that it will set the standard for BTR developments in the country.

Furthermore, the Applicant (GEDV Monkstown Owner Limited) is making a significant positive contribution towards enabling an affordable housing sector in Ireland. As part of the proposed development, the applicant is providing 20% of units for social and affordable homes in accordance with the Affordable Housing Act 2021.

5.4 Overview of Construction Phase and Construction Works

For full construction related details, refer to the *Construction Environmental Management Plan* (CEMP) prepared by ByrneLooby and Roughan & O'Donovan Consulting Engineers. A summary is provided below.

5.4.1 Construction Phase

The construction of the project is planned to take between 36 to 42 months. The current phasing suggests that the project will be split into three phases, with the accompanying infrastructure and green spaces being constructed with each phase. Please refer to Figure 3 of the CEMP for proposed indicative construction phasing details.

The proposed bridge at Purbeck shall be constructed during Phase 1. The refurbishment works to Dalguise House and the Coach House buildings will be in Phase 1, with the works in parallel by a specialist contractor with suitable experience working on Protected / Historic structures. The removal of the existing swimming pool and vinery will occur at the early stages to facilitate the construction compound. The installation of buried services and landscaping works shall be coordinated with the building substructure works, and the programming of the works shall be scheduled depending on the dismantling of scaffolds to buildings, the suitable planting period etc.

The final phasing and associated Construction Traffic Management Plans shall be submitted by the appointed Contractor to Dun Laoghaire Rathdown County Council for approval.

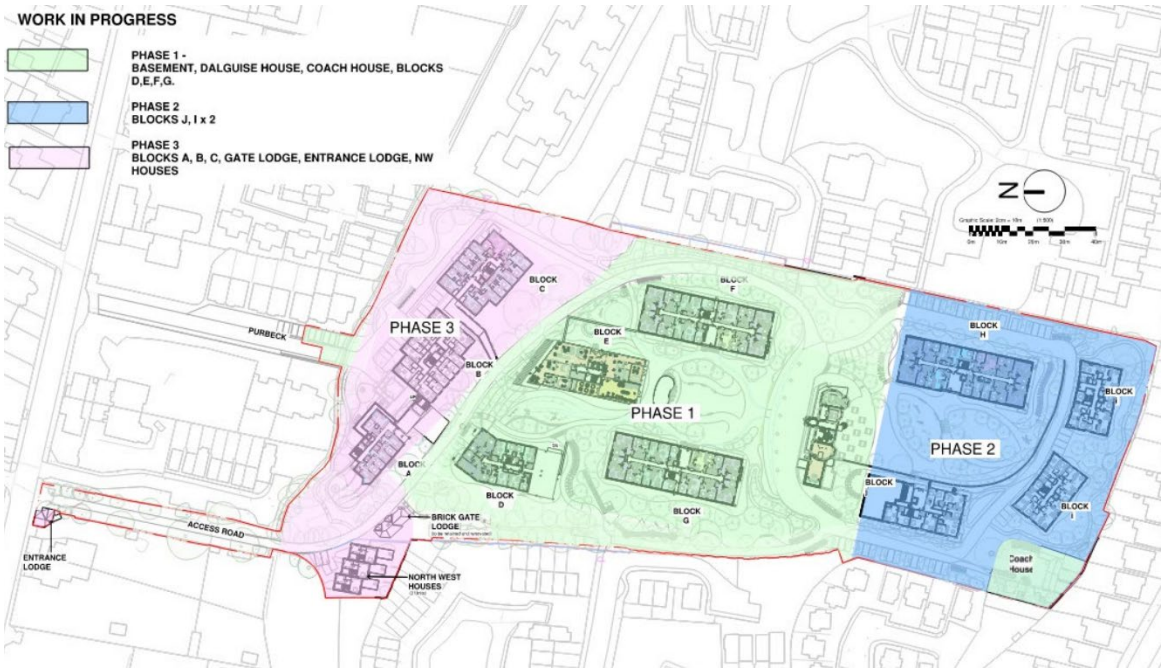

Figure 5.1: Illustrative Plan showing proposed construction phasing.

5.4.2 Proposed Construction Works

The proposed development will be divided into a number of phases as set out in the preceding section. Works in each phase will consist of the following:

Phase 1:

Phase 1 will incorporate the basement. A second and more comprehensive site investigation was carried out in early 2022. A total of eight rotary cores were carried out across the site and the bedrock was identified at 10.5m to 14.0m below ground level. This is well in excess of any basement excavations, and as such, it is not envisaged that any rock breaking will be required as part of the works. The majority of the excavations can utilise battered excavations (see drawing W3683-DR-1040-02), but some vertical temporary retaining walls will be required along the northern and western boundaries in close proximity to existing trees to be retained (see drawing W3683-DR-1040-02). The temporary retaining walls will include bored piles. All excavation banks shall be protected and inspected regularly. The accompanying drawing W3683-DR-1040-02 identifies the basement / undercroft excavation extent and the proximity to the site boundaries.

The foundations in the basement area will be integral to the basement slab. Some anti-floatation anchors will be necessary at basement level, below podium areas, and the set-out of the anchors will be subject to further monitoring of the groundwater levels over the coming period. The superstructure will then be constructed from the podium level, as outlined in the following sections. Access to this phase will be via the existing roadway, with a cellweb build-up provided on areas of the roadway that overlay with the tree Root Protection Zone (RPZ). The bridge crossing at the Stradbrook Stream will also be constructed in this initial phase.

Phase 2:

The excavations at Phase 2 will overlap with the completion of excavations at Phase 1. As noted in the site investigation, bedrock should not be encountered during excavations, and the bulk dig in Phase 1 shall be achieved using battered slopes to a safe angle of repose. All excavation banks shall be protected and inspected regularly. Excavations near trees to be retained shall incorporate specific construction techniques as outlined by the Arborist. The foundations in Phase 2 shall consist of shallow reinforced concrete strips or pad foundations. The superstructure will then be constructed from the foundation, as outlined in the following sections. Access to this phase will be via the existing roadway. An existing septic tank serving Dalguise House will be removed at the footprint of Block J. The site investigations to date do not indicate any contamination in the area, however, a Remediation Plan as set out in the Engineering Services Report shall be implemented for the removal of the tank and backfill.

Phase 3:

The third phase will include the construction of the final blocks. As with Phase 1, some of the excavations are adjacent to existing trees to be retained, and as a result, a temporary retaining wall shall be employed along the southern boundary of Block A, B and C. The foundations in the basement area will be integral with the basement slab. Some antifloatation anchors will be necessary at the undercroft level, below podium areas, and the set-out of the anchors will be subject to further monitoring of the groundwater levels over the coming period. The superstructure will then be constructed from the podium level, as outlined in the following sections. Access to this phase shall be via a new temporary roadway constructed with a CellWeb buildup over RPZs. Finally, any temporary piling platforms will be agreed in advance with the Arborist.

5.4.3 Construction Working Hours

Unless required otherwise by Dún Laoghaire-Rathdown County Council, it is proposed that standard construction working hours should apply, i.e.: 7am to 7pm Monday to Friday, and 8am to 2pm on Saturday. No works shall take place on site on Sundays or Bank Holidays.

It may be necessary for some construction operations to be undertaken outside these times, for example, service diversions and connections; concrete finishing and fit-out works; etc. There may also be occasions where it is necessary to make certain deliveries outside these times, for example, where large loads are limited to road usage outside peak times. Any proposed works outside of normal working hours will be identified in advance, and the Local Authority and local neighbours will be notified of the likely affects (see Section 10). This update will be from the designated Community Liaison Officer who will issue a monthly Community Liaison Plan which will be circulated to the relevant stakeholders. Works outside of normal working hours shall not progress without written approval from the Local Authority

5.4.4 Construction Traffic

The works associated with the new development will result in additional traffic on the neighbouring road network, with vehicle movements associated with the removal of excavated material, demolition waste, construction waste, and the delivery of new materials, concrete trucks etc.

The primary access routes to the site shall be determined by the Contractor in their *Construction Traffic Management Plan* (CTMP). Primary vehicle movements shall be limited to access/egress via the existing access to the Dalguise House lands off Monkstown Road. The Contractor will identify primary access routes that provide the most direct access to the M50 and limit access along local roads. Based on the quantities of excavation and fill to be moved to or from the site, construction waste removal, and general site deliveries for the intended construction works, HGV traffic is estimated to be a maximum of 13 No. two-way movements per hour. The figures below identify two routes to/from the site to the M50.

- Route 1 (Accessing the site, same return trip): Via the M50 onto the N31 at Leopardstown, left onto the N11 (Stillorgan Road), right onto N31 (Mount Merrion Avenue), right onto Frascati Road, left on to R119 (Monkstown Road).

- Route 2 (Accessing the site, same return trip): Via M11/M50 to the south, onto the N11 (Bray Road) through Cherrywood / Cornelscourt onto the Stillorgan Road, right onto N31 (Mount Merrion Avenue), right on to Frascati Road, left on to R119 (Monkstown Road).

Figure 5.2: Construction Route 1 (Source EPA Maps).

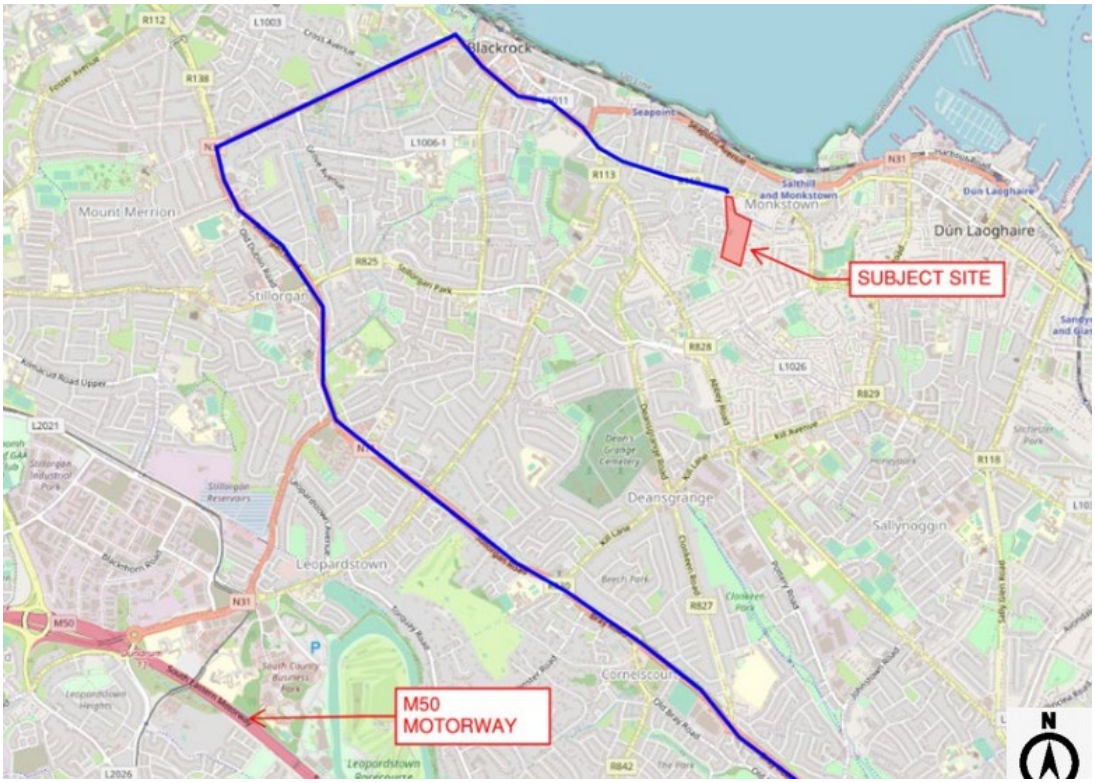

Figure 5.3: Construction Route 2 (Source EPA Maps)

The following are some measures that will be implemented to accommodate smooth traffic flows:

- At the entrance, suitable laybys with a temporary one-lane traffic light system shall be provided, with priority to vehicles entering the site.
- Site entrance gate will be set back a minimum of 18m from the footpath edge to ensure all vehicles leave the road before stopping.
- Appropriate sight lines will be provided;
- Advanced warning provided to all users on the road and directional signage for site traffic.

In addition to construction vehicles, it is projected that the works will result in approximately 150 to 200 construction workers on site during typical construction period, with a maximum of 400 construction personnel on site concurrently during short period of peak activity. Given typical construction working hours the majority of these personnel are expected to arrive to site in advance of the 08:00 – 09:00 morning peak hour and to depart before or after the 17:00 – 18:00 evening peak hour depending on the shift working pattern.

Some construction workers will arrive on foot, cycle or use public transport. In addition, many construction workers come to site in groups by car or van. Vehicular movements carrying construction personnel can be broken down as follows:

- 400 peak staff working on site (Max);
- 40% arrive during AM or PM Peak Hours = 160no., 30% arrive via public transport, walk or cycle = 48no., Total arrive via car/van 112, (Average Car Occupancy = 2.2 (including driver)). Maximum additional movements AM/PM Peak (400 staff) 51 cars/vans
- With up to 200 staff normally on site
- Normal additional movements AM Peak 26 cars/vans

This volume of construction traffic estimated to be generated during peak traffic hours is lower than the peak volumes of non-construction traffic projected for the operational phase of the development. Beyond the bulk earthworks stage, other stages during construction are estimated to have lower HGV volumes and lower traffic volumes overall. The projected peak volume of construction traffic, including both truck and staff movements, is lower than the peak traffic volumes projected for the fully occupied development during the operational stage.

Detailed measures shall be developed further as part of the CTMP developed by the Contractor in consultation with the Design Team and Dún Laoghaire Rathdown County Council prior to commencement of works.

The principal objective of the CTMP is to ensure that the impacts of all building activities generated during the construction of the proposed development upon both the public (off-site) and internal (on-site) worker's environments, are fully considered and proactively managed/programmed respecting key stakeholders requirements thereby ensuring that both the public's and construction workers safety is maintained at all times, disruptions minimised and undertaken within a controlled hazard free / minimised environment. It is noted that the impact of the construction works will be temporary in nature.

The CTMP shall be prepared in accordance with the principles outlined below and shall always comply with the requirements of:

- Chapter 8 of the Department of the Environment Traffic Signs Manual, current edition, published by The Stationery Office, and available from the Government Publications Office, Sun Alliance House, Molesworth Street, Dublin 2;
- Guidance for the Control and Management of Traffic at Road Works (June 2010) prepared by the Local Government Management Services Board; and
- Any additional requirements detailed in the Design Manual for Roads and Bridges & Design Manual for Urban Roads & Streets (DMURS).

In order to ensure satisfactory operation of the construction stage the following is proposed:

- Provision of sufficient on-site parking and compounding to ensure no potential overflow onto the local network.

Site offices and compound shall be located within the green space area just south of Dalguise House. The site will be able to accommodate employee and visitor parking throughout the construction period with construction of temporary hardstanding areas.

Finally, truck wheel washes will be installed and any specific recommendations regarding construction traffic management made by the Local Authority will be adhered to.

The following mitigation measures shall be incorporated into the CTMP:

- During the pre-construction phase, the site will be securely fenced off from adjacent properties, public footpaths and roads.
- The surrounding road network will be signed to define the access and egress routes for the development.
- The traffic generated by the construction phase of the development will be strictly controlled in order to minimise the impact of this traffic on the surrounding road network.
- All road works will be adequately signposted and enclosed to ensure the safety of all road users and construction personnel.
- All employees' and visitors' vehicle parking demands will be accommodated on-site.
- A programme of street cleaning if/when required.
- Any associated directional signage
- Any proposals to facilitate the delivery of abnormal loads to the site
- Measures to obviate queuing of construction traffic on the adjoining road network.

5.4.5 Construction Waste

AWN Consulting Ltd have developed a Resource & Waste Management Plan (RWMP) see Appendix 18.1 of the EIAR. This RWMP includes information on the legal and policy framework for Construction and Demolition (C&D) waste management in Ireland, estimates of the type and quantity of waste to be generated by the proposed development and makes recommendations for management of different waste streams. The RWMP should be viewed as a live document and should be regularly revisited throughout a project's lifecycle. Section 6 of the enclosed CEMP provides details.

5.5 Description of the Operational Phase of the Proposed Project

In summary, the proposed development is a 7 year permission for a Large Scale Residential Development comprising 3 No. three storey 3-bed terraced houses (GFA 569 sq m), and 490 No. Build-to-Rent units (consisting of 2 No. studio units; 289 No. 1-beds; 20 No. 2-beds/3 persons; 166 No. 2-beds/4-persons; and 13 No. 3-beds) (with an option for the use of 4 No. of the BTR Units to cater for short-term stays of up to 14 days at any one time to cater inter alia for visitors and short-term visits to residents of the overall scheme) residential amenities and residential support facilities; a childcare facility; and restaurant/café.

Vehicular and pedestrian access and egress is provided at two points on Monkstown Road: the existing entrance to Dalguise; and at Purbeck.

The proposal also includes alterations at Purbeck including the relocation of 4 No. existing car parking spaces to facilitate the construction of a new vehicular and pedestrian bridge over the Stradbrook Stream.

The proposed development comprises the construction of 493 No. residential units in total consisting of 486 No. new build and 7 No. residential units. The 7 No. residential units be located within the existing Dalguise House, Gate Lodge (Brick Lodge) and Coach House, all of which are proposed to be reused and repurposes as part of the subject proposal.

The residential mix is broken down as follows:

- 3 No. 3 storey 3-bed terraced houses.
- 490 No. Build-to-Rent units (consisting of 2 No. studio units; 289 No. 1-beds; 20 No. 2-beds/3 persons; 166 No. 2-beds/4-persons; and 13 No. 3-beds)

An option for the use of 4 No. of the BTR Units to cater for short-term stays of up to 14 days at any one time to cater *inter alia* for visitors and short-term visits to residents of the overall scheme is also proposed. Residential amenities, residential support facilities, a childcare facility and restaurant/café are also provided.

The table below provides the key development statistics.

Development Statistic	Proposed Development
Site Area	3.58 ha
No. of Residential Units	493
Density	138 units per hectare
Height	3 – 9 storeys
Dual Aspect	54%
Balconies	64%
Plot Ratio	1.13
Site Coverage	22%
Car and Cycle Parking	228 no. spaces (19 no. undercroft car parking spaces, 148 no. basement car parking spaces, 61 no. surface car parking spaces, (this includes 8 no. car spaces for café/restaurant, 6 no. childcare facility and 6 no. car share spaces). 971 no. Bicycle Spaces and 20 cargo bike spaces.

5.5.1 Demolition

The demolition and part-demolition of existing structures (total demolition area 967 sq m), including:

- White Lodge a 2 storey house (192 sq m);
- Swimming pool extension to the southeast of Dalguise House (250 sq m);
- Residential garage and shed to the southwest of Dalguise House (285 sq m);
- Lean-to structures to the south of the walled garden (142 sq m);
- Part-demolition of Lower Ground Floor at Dalguise House (9 sq m);
- Demolition of single storey extension to the south of the Coach House (29 sq m) and three ancillary single-storey structures (8 sq m, 8 sq m, and 31 sq m) within the yard;
- Demolition of potting shed (13 sq m);
- Removal of 2 no. glasshouses; and
- Alterations to, including the creation of 3 No. opes and the removal of a 12.4 m section of the walled garden wall to the east.

5.5.2 Residential Development

The development with a total gross floor area of approximately 47,382 sq m (including a basement of 5,396 sq m and undercroft parking 1,403 sq m; and 46,154 sq m of new build, and 1,228 sq m retained existing buildings), will consist 493 No. residential units, comprising:

- 3 No. three storey 3-bed terraced houses;
- 490 No. Build-to-Rent units, residential amenities and residential support facilities;
- A childcare facility; and restaurant/café.

The proposed housing mix is as follows:

	Apartments	Houses	Total	
Studio	2		**2 (0.4%)**	
1 bed	289		**289 (58.6%)**	
2 bed (3 person)	20		**20 (4.1 %)**	
2 bed (4 person)	166		**166 (33.7 %)**	
3 bed	13	3	**13 (2.6%)**	**3 (0.6%)**
	490	**3**	**493**	

The proposed residential units will be arranged as follows:

Northwest Houses

The proposed development includes 3 No. 3-bed terraced houses located at the north west of the site at the main Dalguise House entrance. The 3 no. houses are three-storey in height and have a total gross floor area of 569 sq m.

Block A

Block A is located at the Purbeck entrance to the south of the site and is 7 storeys in height. The building has a gross floor area of 2,015 sq m and comprises a childcare facility, which is 540 sq m over Ground and First Floor Levels; and 19 no. apartment units, including 15 No. 1-beds and 4 No. 2-beds/4-person units.

Block B & Block C

Block B & Block C are located to the south of the site at the main vehicular entrance and are 7 storeys over undercroft parking. Each building has a gross floor area of 3,695 sq m and comprises 48 no. apartments units (total 96 no. apartment units) including, 33 No. 1-beds, 1 No. 2-beds/3 persons and 14 No. 2-beds/4-person units.

Block D

Block D is located to the west of the site and is 7 storeys over basement level car park. The building has a gross floor area of 4,325 sq m and comprises 52 no. apartment units, comprising 25 No. 1-beds, 26 No. 2-beds/4-persons, 1 No. 3-bed unit.

Block E

Block E is located in the centre of the southern part of the site and is 9 storeys over a basement level car park. The building has a gross floor area of 5,946 sq m comprising:

- 66 No. apartment units including 40 No. 1-beds, 26 No. 2-beds/4-person units;
- Residents' support facilities including a concierge/lobby (75 sq m);
- Residents' amenities (gym, yoga studio, residents' lounge/co-working space; lobby 485 sq m) at Ground Floor Level;
- Residents' amenities (bookable rooms 42 sq m) at First Floor; and
- Residents' amenities (residents' lounge; games room; screen room; private lounge; kitchen 350 sq m) with roof terrace (106 sq m) at Eighth Floor Level.

Block F and G

Block F and G are the central blocks flanking the main lawn area creating a formal setting to Dalguise House. Each building is 7 storeys over basement level car park and has a gross floor area of 5,469 sq m. Each building contains 76 No. apartment units (total 152 no. apartment units) including 46 No. 1-beds, 5 No. 2-beds/3-persons, 23 No. 2-beds/4-persons, 2 No. 3-bed units.

Block H

Block H is located at the southern end of the site and forms a courtyard with the walled garden. The building is 5 storeys over lower ground and has a gross floor area of 4,252 sq m. The building contains 54 No. apartment units including 30 No. 1-beds, 1 No. 2-beds/3-persons, 21 No. 2-beds/4-persons, 2 No. 3-bed units.

Block I (1 & 2)

Block I (1 & 2) are mews style apartment buildings located at the southern end of the site behind the Walled Garden. Each building is 3 storeys with a gross floor area of 1,038 sq m. Each building comprises 12 No. apartment units including 3 No. 1-beds, 3 No. 2-beds/3 persons, 6 No. 2-beds/4-person units.

Block J

Block J is a mews style apartment building located at the southern end of the site to the west of the Garden Wall. The building is 4 storeys in height and has a gross floor area of 1,844 sq m. It comprises 20 No. apartment units including 13 No. 1-beds; 1 No. 2-bed/4-persons, 6 No. 3-bed units.

Dalguise House and other Historic Buildings

The development includes the refurbishment, adaptation and reuse of:

- the two storey Dalguise Lodge (Entrance Lodge) (GFA 55 sq m) comprising residential support facilities;
- a single storey Gate Lodge (GFA 55 sq m) comprising 1 No. 1-bed unit; and
- two storey Coach House and single storey Stableman's House (GFA 319 sq m) to provide 3 No. apartment units (1 No. 1-bed, 2 No. 2-bed/4 persons).

The refurbishment, adaptation and change of use of Dalguise House (GFA 799 sq m) from a single residential dwelling to provide:

- 3 No. apartment units (2 No. studios and 1 No. 2-bed/3 person) at First Floor Level;
- a restaurant/cafe at Lower Ground Floor Level (GFA 273 sq m);
- and residents' amenities at Ground Floor Level (library, residents' lounge, events space, bar/bookable room, 157 sq m).

Works to the existing structures include:

- removal of existing internal partitions and doors, alterations to internal layout including provision of new partitions and doors to Dalguise Lodge (Entrance Lodge);
- the removal of existing internal partitions and doors, and alterations to internal layout including provision of new partitions and doors to Gate Lodge (Brick Lodge);
- replacement of existing roof, windows and doors, non-original mezzanine floor and stairs of Coach House, creation of new internal and external opes, reconstruction of chimney, construction of new stairs, provision of new internal partitions and doors, replacement of the demolished single storey structure to south of Coach House with a 42 sq m single storey extension, including construction of a link between Coach House and Stableman's House;
- replacement of existing roofs, windows, doors, creation of new external opes and provision of new internal partitions and doors to Stableman's House;
- restoration of Coach House yard walls;
- removal of security bars from windows, internal partitions, doors, two secondary staircases, non-original fireplaces; and the reconfiguration of internal layout including introduction of new partitions, doors and fireplaces, in-fill of former secondary staircases; removal of an existing window at rear facade of Lower Ground Level, alterations to ope and replacement with a new external door; reinstatement of external wall fabric in place of demolished lean-to at the rear facade; and removal of external door to swimming pool on eastern facade and closure of ope; and creation of new external ope at Lower Ground Floor rear façade, provision of external plant (connected to the new ope by ducting), waste storage area, water tank at surface level adjoining the western façade, enclosed within a screen at Dalguise House).

5.5.3 Non-Residential Development

The proposed development will deliver non-residential facilities consisting of the proposed café /restaurant (273 sq m) located at the Lower Ground Floor of Dalguise House at the center of the site, and the childcare facility (540 sq m), located at the ground and first floor of Block A at the Purbeck entrance to the site.

The proposed non-residential uses will serve both the residents of the proposed development and be accessible to the existing community.

5.5.4 Ancillary Works

The development will also consist of the:

- the construction of a garden pavilion;
- the provision of balconies and terraces, communal open space including roof gardens, public open spaces, hard and soft landscaping, landscaping works including the removal of trees, alterations to boundaries;
- the provision of: 227 No. car parking spaces (148 No. at basement level; 20 No. at undercroft; and 59 No. at surface level);
- motorbike spaces;
- level changes;
- ESB Substations (at Block D and Block H);
- plant areas;
- waste storage areas;
- provision of cycle parking (including cargo bike spaces) at basement and surface level;
- signage/wayfinding; and
- all ancillary site development works above and below ground.

Provision is made in the landscaping proposals for potential future pedestrian and cycle connections that would facilitate permeability through the site boundaries with the residential estates of Arundel and Richmond Park, respectively, and the former Cheshire Home site, subject to agreement with those parties and/or Dún Laoghaire-Rathdown County Council, as appropriate.

5.5.5 Landscape Strategy and Design

The proposed landscape strategy has been developed by the landscape architects in close collaboration with other disciplines in the design team. Focus was placed on retaining the existing trees on site where possible with minimal re-grading in root protection areas. Therefore, this has impacted the distribution of the communal open space and public open space.

The general landscape design objectives are to:

- Establish a high-quality parkland space that is in keeping with the historical era of Dalguise House.
- Retention and enhancement of existing historical features such as the tree lined avenue approach to Dalguise House, the house lodges, stable buildings and the walled garden.
- Retention of high-quality mature trees, and increased tree planting
- Maximise views from the scheme towards the coastline and views within the central open space and walled garden towards the historical Dalguise House
- Create a predominantly public landscape with open space for locals and visitors to enjoy with greater permeability and accessibility to the wider townscape.
- Facilitate pedestrian/cycle links with the wider neighbourhood.
- Introduce environmental elements that residents and visitors can interact with and learn from.
- Increase biodiversity and management of the site.
- Introduce SUDS in a way that benefits amenity.
- Minimal intervention is being sought with manicured areas only where it would be in keeping from a historical perspective.

Proposed Tree Planting Species

There are a large range of trees on site including native, ornamental varieties and complimentary species. There is also a range of tree ages and condition with the majority of trees being mature and of fair condition as per the submitted Tree Survey prepared by Leinster Tree Services.

The scheme proposes to use many of the same species as the existing trees with some additional complimentary species to increase biodiversity and sustainability of tree cover. Tree species were selected based on suitability to local soil conditions and microclimate, longevity and biodiversity.

Proposed trees have been categorised into different types for different positions/areas within the landscape masterplan. These include:

- Large parkland trees
- Native/naturalistic trees
- Ornamental trees
- Swale trees
- Edible trees
- Main avenue trees

Trees planted will be a combination of Mature and Semi-Mature species. Clear Stem Trees will be specified to have a range of sizes: 60-70 Girth for the Large Parkland Trees, 40-45 Girth 30-35 Girth for other categories. These will have a minimum of 2m clear stem.

Multi Stem Trees will be specified to be at least 4-5m high with canopy lifted by at least 1m. Espaliers will be 3-4m high.

Where possible trees will be planted in tree pits as part of the SUDs strategy and to increase the health of the trees. This will not be possible where there are root protection zones. Trees within the podium will either be planted in raised landscape mounds or within raised planters to ensure they receive enough build up for healthy, sustainable growth.

Proposed Overall Planting Species

The soft landscape strategy proposes seeding the majority of grass areas with a long meadow mixture with the exception of the central lawn area and grass within 1m of paths/roads, which will have a shorter flowering lawn mixture. Grass mixtures along swales and pond edges will consist of suitable wetland and dry swale species. Woodland floors will remain as is, apart from where there is too much disruption to the understorey. In these areas a woodland meadow mix will be seeded.

Along the main avenue there will be some bulb planting punctuating the route in areas and bulb planting will also be used selectively in the main garden areas and central lawn.

Along the periphery of the site native shrub planting and hedges will be introduced in areas that are free from root protection zones.

Edible plants (all edible forest layers) will be specified within the walled garden and climbers will be planted at the base of the walled garden wall and entrance archways to achieve a secret garden character, thus reintroducing the kitchen garden use to the walled garden.

Ornamental planting is proposed directly around the blocks, in some areas this will be low level planting to account for lower build ups and a no dig planting method within root protection zones. In other areas this will also include taller species to allow for more structural interest. Marginal (both dry and wet), emergents and submerged aquatics will be proposed around the pond area, whereas a wet meadow mix will be used at the base of the swales, and a dry swale mix on the banks. A mix of sedum and biodiverse roof planting will be planted within the green/blue roofs and sedum boxes will also be provided on the tops of bicycle sheds.

Specifications of healthy, full specimens at a density that allows for instant impact will ensure that the site feels like a mature landscape from the start. Species are selected based on their suitability of particular positions – dry swales / shade etc. in addition to their aesthetics and ecological criteria.

Refer to the Landscape Soft works drawings (C0135 L300 series) submitted by Cameo and Partners.

Hard Landscaping

The hard landscape elements have been carefully selected for their proposed function and durability, and their ability to enhance the space and honour its historical parkland character. In parts of the site where there are existing trees and therefore root protection zones, paving that can be laid using a no dig construction method. Sustainability has also been a key consideration with a desire to use as much of the high-quality materials on site as possible. Materials that will benefit the SUDs strategy have also been proposed where possible, such as permeable resin bound paving, permeable concrete blocks, gravel suds pavers and reinforced grass.

The main avenue will be resurfaced with a buff macadam over the existing tarmac, this will repair the surface and create a shared surface aesthetic that is fitting for its parkland setting, but also durable and fit for purpose. As it will be laid on top of the existing tarmac it will have less impact on root protection zones. Paths will be permeable resin bound gravel. A limited number of woodland paths will be laid with loose bark chip and timber edging using a no dig construction to protect tree roots, these paths are in locations where there are root protection zones and level differences, such spaces are not counted as contributing to the communal nor public open spaces. Where raised decking, bridges and elevated walkways are necessary composite timber decking will be used to ensure longevity. With timber being used for structures within the woodland – such as the yoga platform, elevated bird hide and elevated tree walk.

The existing granite cobbles from the path that leads up to Dalguise House will be retained and used around the main house. These will be supplemented with new granite cobbles, (chosen to match existing), and used around the Coach House. Private terraces will be laid with granite flags. The two other feature paving areas, such as the area around the outdoor pavilion within the central lawn will consist of large high quality, polished concrete slabs. These materials should complement and further enhance the existing hard materials and natural surroundings.

Reinforced grass system will be used for the Fire emergency route that runs up the northern to help retain the parkland character.

Play Strategy

The play strategy proposes three different types of play experience within the site:

- Play off the ground - Play which is mainly elevated off the ground to ensure minimal disruption to root protection areas and a different level of interaction with the existing trees and canopy. This includes the tree top walk and elevated play nets.
- Natural looking & sculptural play - Play made out of timber and stone which feels in keeping with its natural environment. This includes Stepping Stumps, Existing Fallen Logs, Timber Climbing Ramp, Logs, Play Boulders, Jumping Discs, Timber Stilted Balance Beam.
- Naturally occurring play - Play encouraged by landscape features - such as depressions and mounds, slopes, dry swales, woodland, wildflowers.

This amounts to 1,134 sq m of dedicated play spaces across the site, some of which is within the public open space and other areas that fall within the communal space. However, there are opportunities for informal play across the landscape. The play areas are spread across the site, with most of the areas provide a variety of equipment that appeals to different ages - 0-5yrs, 5-11yrs, and 11yr plus. The play spaces are all interconnected by pedestrian routes. The elevated tree walk will not be restricted to certain ages, but adult supervision will be necessary for under 5yrs. The yoga platform is not specifically identified as a play space, but is expected to attract older children. The proposed play equipment will be designed and manufactured in accordance with standards EN 1176 and EN 1177. There will be a mix of impact absorbing play surfaces including loose bark mulch in areas of root protection zones and bonded rubber mulch that looks like bark mulch within the gardens where root zones are not impacted. Within the walled garden a high quality artificial grass will be used as the play safety surface to ensure that it is fitting with the Walled garden character.

A list of all play equipment can be found within the landscape package prepared by Cameo and Partners.

Environment Strategy

As per Criterion 4, in accordance with the requirements of DLRCC all new developments are to incorporate the principles of 'SuDs'. The aim of 'SuDs' inclusion across the development is to provide an effective system separate from the foul network to mitigate the adverse effects of storm water run-off on the environment, through enhanced quality systems and on local infrastructure to aid in preventing downstream flooding. The features proposed shall reduce runoff volumes, pollution concentrations and enhance groundwater recharge and biodiversity.

The proposed development 'SuDs' features shall consist of:

a. Green/Blue-roof – this allows the roof areas of the proposed apartments to use a filter layer to direct rainfall events into a storage layer below.
b. Permeable Paving – this system allows rainwater to be directed into car parking bays whereby the rainwater can filter through gaps in the paving blocks and percolate into the subsoil or to swales.
c. Tree Pits – tree pits will be located along the existing avenue to capture runoff for the existing hard standing area.
d. Swales – it is proposed to allow storm water to be directed locally into swales when the permeable paving is overflowing to delay storm water from entering the main drainage network.
e. Attenuation Tanks – as noted above, for extreme storm events, a dedicated system to contain the storm water flows generated during a 1-in-100-year storm, increased by 20% for climate change are required by DLR. It is proposed to use underground storage tanks in three locations for this purpose.
f. Low Water Usage Appliances – low water usage appliances should also be utilised to aid in the reduction of water usage on the development.
g. Oil Separator – prior to final disposal of storm water from the development drainage network into the Stradbrook Stream (at two locations), the effluent will pass through an oil separator to remove any hydrocarbons which may have entered the network from car parking areas

5.5.6 Public Open Space

This landscape consists of a sequence of different open spaces that are open to the public.

The landscape masterplan provide 5,759 sq m of public open space that is accessible and usable by all, well over and above the 15% requirement of 5,370 sq m. This includes the following areas:

- The central lawn; this area comprises of a formal lawn with meadow planting and mounds to the sides, circuitous paths and planting beyond. It includes an outdoor pavilion with indoor and external seating opportunities and other opportunities for seating within the lawn, with views towards Dalguise House, framed by the trees. There is no play equipment in this area, but the landscape mounds and meadow will provide a playable landscape.
- The woodland area west and north of Block G; this area comprises of several play nodes at ground, the elevated walkway and elevated play nets and the surrounding woodland landscape.
- The Walled Garden; this area includes the terrace directly to the south of Dalguise House which has provision for outdoor eating and drinking with views of the house to the north and the restored walled garden to the south. The Walled Garden will be split into a more active area with play to the north and a quiet, reflective space to the south, where people can grow and pick edible plants and rest in this sheltered spot. Plant beds will contain mainly edible plants and trees, including herbs, fruits, nuts and vegetables, but also plants of botanical interest. An edible forest approach will be used with the trees planted in an orchard style. The walled garden wall will be retained while access into the walled garden will generally be at points where there is already a break in the wall. Two existing trees of value will be retained within the design. There will be interesting structures within the garden - such as a long pergola trained with fruit trees. Along the paths there will be benches for rest and relaxation. Within the planting there will be areas for beehives, insect hotels and bird tables. Growing information boards will be positioned in key areas to educate people about the edible forest approach.

5.5.7 Communal Open Space

The proposals allow for 3,867 sqm of communal open space (above the required 3,864 sqm based upon the communal open space for the apartments and the additional communal open space to compensate for units without, or with a shortfall in private open space). This includes the following:

- The garden area between Blocks D & E; which consists of a play area with water play, seating provision, and associated planting including a raised planter.
- The communal roof terrace on Block E, which includes outdoor dining and seating provision enclosed within raised planters with views of the coastline to the north and a viewing deck.
- The outdoor terrace at ground level at Block E.
- The outdoor terrace between Blocks B and C at the entrance from the main avenue.
- The space between Block E and Block F, which includes a play area and seating.

- The courtyard by the Coach House.
- Woodland areas to the north and south of the site that include resting and play opportunities and sculpture interspersed within the woodland environment.
- In most places informal boundaries exist between communal and public open spaces.

5.5.8 Access

The site is currently accessed via a driveway from the R119 Monkstown Road. This access point leads to the historical winding avenue that leads up to Dalguise House. The road is currently narrow and not conforming to standards for a two-way route. Increasing the width of this road for two-way traffic would have a detrimental effect on the existing trees. Therefore, another access route through the adjoining Purbeck development is proposed. This new access route will be the main vehicular access and lead directly into the basement of the development where there will be underground parking. This was heavily influenced by the desire to retain as many high value trees as possible in this part of the site.

The existing winding avenue that leads up to Dalguise House will be repaired and resurfaced with Buff macadam, but this will be done on top of the existing surface, so further excavation will not be necessary. In most areas the width of the original road will be retained with distinct incidences of road widening for passing bays with setdown/delivery spaces also provided. However, these passing bay areas have been carefully chosen so as not to encroach on existing root protection zones. The road will act as a shared surface, and not be the main vehicular route into the development, therefore widening the road for a pavement is not necessary.

Provision is made in the landscaping proposals for potential future pedestrian and cycle connections that would facilitate permeability between the site and adjoining residential estates of Arundel and Richmond Park, respectively, and the former Cheshire Home site, subject to agreement with those parties and/or Dún Laoghaire-Rathdown County Council, as appropriate.

The access route to the west and the southern eastern access will enable cycle access in addition to pedestrian access with a wide gate and paths leading on from these access points. The third access point to Cheshire Homes development to the northeast will be for pedestrians only, as a bark chip path connects with the site so as not to interfere with root protection zones, having regard to the trees to be retained and the existing site levels. All pedestrian/cycle access points will be secured with lockable cast iron gates, but these are intended to stay open for the majority of the time.

These proposed access points can be seen on the General Arrangement Drawing supplied by Cameo+Partners Ltd as part of the submission.

5.5.9 Car Parking and Cycle Parking

The proposed development provides car parking for both the residential and non-residential components of the scheme, totaling in 228 no. spaces, comprising:

- 208 no. residential spaces
- 8 no. café/restaurant car spaces
- 6 no. childcare facility spaces (setdown and staff parking)
- 6 no. car share spaces to the south of Block G.

The parking proposal also includes 20 no. cargo bike spaces and 8 no. motorcycle spaces.

In terms of cycle parking, the total residential cycle parking provision will be 716 no. long stay spaces and 255 no. short stay spaces (a total of 971 no. spaces).

5.5.10 Site Utilities

Foul Infrastructure

The wider area is served by the Ringsend Wastewater Treatment Plant, which has treated Dublin's wastewater since 1906 and is the largest plant in Ireland providing 40% of the Country's treatment capacity (water.ie). The plant includes secondary treatment with capacity PE of 1640000 (EPA Maps, 2022). There are no other EPA licenced waste-water treatment facilities within 10 km of the site.

The Irish Water service drawings identifies that a main combined sewer exists running under on the line of the Stradbrook/Monkstown Stream was obtained. The main is a 450mm diameter vitrified clay (VC) line flowing towards Carrickbrennan Road with an existing manhole for connection 1 at the Western end of the Purbeck Lodge and Dalguise House site intersection while proposed connection 2 is adjacent western boundary to the Drayton Close estate.

A further 450mm diameter Irish Water/ DLRCC Vitrified Clay (VC) combined line exists, which runs from the Monkstown Valley development onto the application site, current entrance/exit roadway, and onto Monkstown Road, down Albany Avenue before connecting onto a main combined line on Seapoint Avenue.

Dalguise House is served by a separate septic tank and percolation area located in the lands outside to the Walled Garden on the western boundary. This will be removed during the construction phase.

Water Supply

Irish Water is responsible for managing and delivering water services to homes and businesses served by Public Water Supplies and Wastewater Agglomerations.

Potable water supply for Monkstown (as well as Blackrock, Booterstown, Clonkeen, Deansgrange, Dún Laoghaire Town, Foster's Avenue, Roebuck, Oatlands, Orpen, Pottery Road and Stradbrook) is from the Stillorgan Reservoir (DLR Co Council, 2022). Stillorgan is a treated-water reservoir that receives water that has been processed in Ballymore Eustace or Vartry, before it is dispersed through the network of pipes to a total population of 200,000 people in South Dublin. It is located approximately 3km from the site.

There is an existing 160 dia. HPPE or equivalent, Irish Water water main on Monkstown Road this was located during a previous site walk over (12 January 2022) and has been confirmed by Irish Water.

Electricity and Gas Infrastructure

The development shall be supplied from the local ESB Networks Medium Voltage Network, which includes Medium Voltage Sub-Stations on Brighton Avenue and at Richmond Park. The development will be supplied from the Monkstown Road direction, with potential future linkage to the Richmond Park substation, and to locate 2 No. Substations within the development, one in Block E and one to the rear of the site at Block H. The location and ratings of Sub-Station shall be considered to satisfy architectural and engineering design freedom and also to satisfy the statutory requirements of ESB Networks.

As part of the development, a low-pressure gas distribution network shall be extended by Gas Networks Ireland from the existing gas supply network, to supply gas to the various tenant units proposed throughout the development. It is not proposed to supply gas services to individual residential units.

Telecommunications

All main roads / boulevards within the development shall contain ducting / cable ways and chambers as deemed necessary for the servicing of the site. The immediate surroundings of the site are currently serviced by Eir and Virgin Media infrastructure, which will be extended within the site to meet the needs of the development. Fibre-to-the-Home will be extended to each unit within the development to provide the development with high-speed broadband, TV and telecommunication requirements.

APPENDIX B

Proposed Development Drawings

NOTE : THE FOOTPRINTS OF ADJOINING PROPERTIES ARE TAKEN FROM THE MOST CURRENT OS MAP PROVIDED TO THE ARCHITECT

SITE LAYOUT PLAN
1 : 500

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Drawing Notes:

= Indicates Extent of Application
Site Area within Application = 26787.7 m²
= Indicates Adjacent Site in Ownership of Applicant
= Wayleave
= Part V allocation
WSA = Waste Storage Area
= Access / Connection to surrounding Neighbourhoods.
Site Access

Issues & Revisions

Revision Number	Date	Drwn	Details of Issue / Revision
P01	12.10.22		Issued for Planning
P02	19.05.23		Response to RFI

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Client Details:
GEDV Monkstown Owner Limited,3rd Floor Kilmore House, Park Lane, Spencer Dock, Dublin 1.

Project Details:
Dalguise
Monkstown

Drawing Title:
Proposed Site Layout Plan

Job No.	Sheet Size:	Scale @A0:	Status	Purpose of Issue
P21-066D	A0_	1:500		PLANNING PERMISSION

Issue Date:	Drawn By:	Reviewed By:		Revision
28/07/22	MG	EOB	MKS-RAU-ZZ-XX-XX-DR-AR-002	P02

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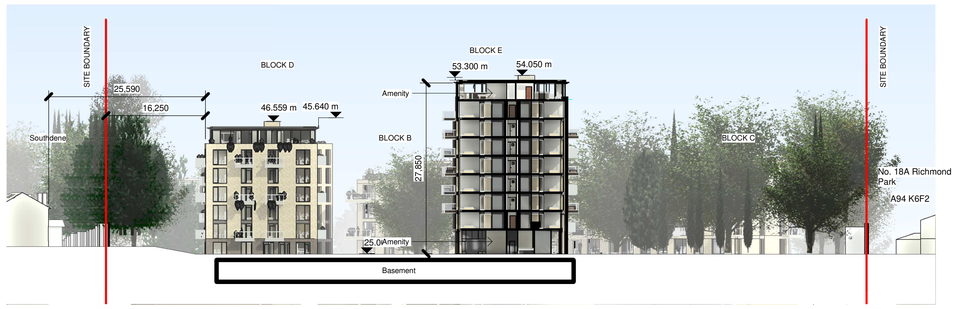
Section B - B
1 : 500



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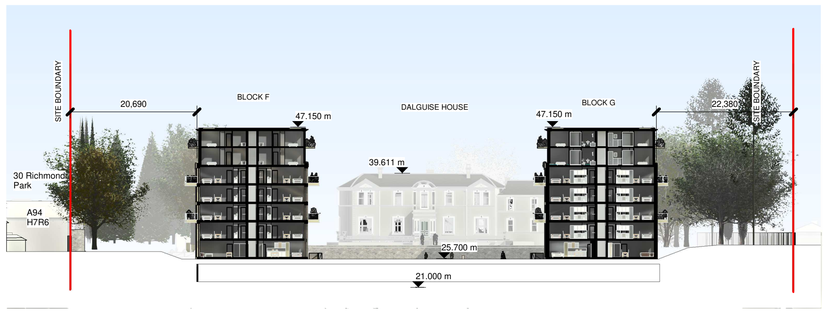

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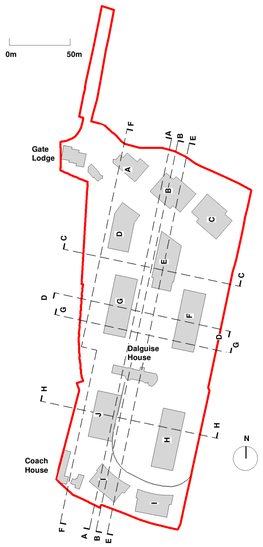

Block J

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Drawing Notes:

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Site Area within Application = 35767.1 m²
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Issues & Revisions

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P01	12.10.22		Issued for Planning
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Drawing Title:
GA-Site-Proposed Sections - Sheet 01

Job No.	Sheet Size:	Scale @A1:	Status	Purpose of Issue
P21-066D	A1_	1:500	P01	PLANNING PERMISSION

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18/10/22	MG	EOB	MKS-RAU-ZZ-XX-DR-AR-300	P02

Section E-E
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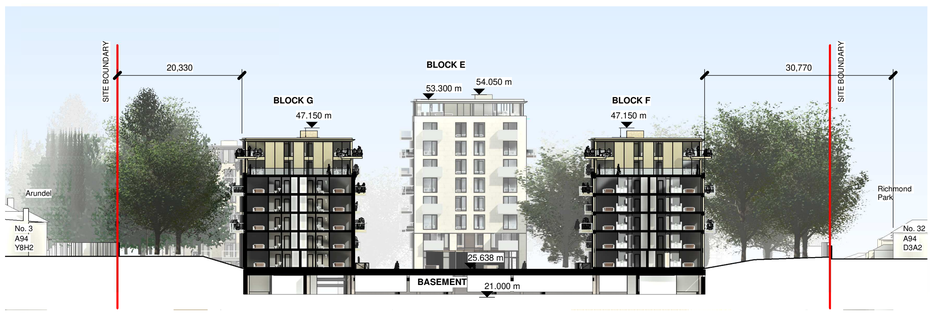
Section F-F
1 : 500



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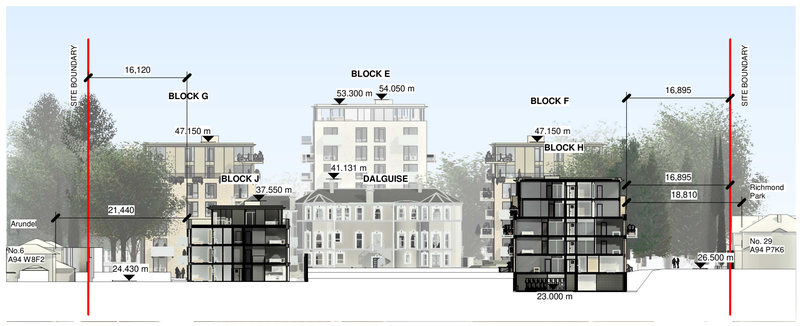

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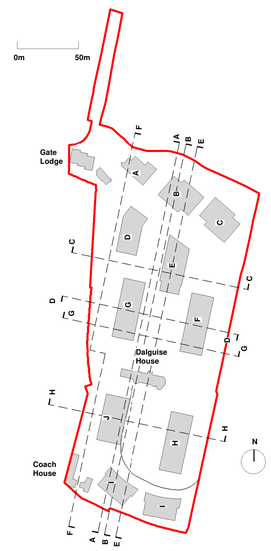

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= Indicates Adjacent Site in Ownership of Applicant
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Issues & Revisions

Revision Number	Date	Dwn	Details of Issue / Revision
P01	12.10.22		Issued for Planning
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Drawing Title:
GA-Site-Proposed Sections - Sheet 02

Job No.	Sheet Size:	Scale @A1:	Status	Purpose of Issue
P21-066D	A1_	1:500	P01	PLANNING PERMISSION

Issue Date:	Drawn By:	Reviewed By:		Revision
01/06/22	MG	EOB	MKS-RAU-ZZ-XX-DR-AR-301	P02

APPENDIX C

Water Quality Assessment

Data Summary: Macroinvertebrate and Water Chemical Survey of the Stradbrook Stream

Roughan & O'Donovan

P00007357

December 2021

Dr Bláithín Ní Ainín

Client: **Roughan & O'Donovan**

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Project reference: **P00007357**

Date of issue: **December 2021**

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Revision and Amendment Register

Version Number	Date	Section(s)	Page(s)	Summary of Changes	Approved by
1	09/12/21	All	All	First draft for client review	MKD
2	10/10/22			Finalisation and removal of watermark	BNA

Contents

List of Figures

List of Tables

1. Introduction

1.1 Background

APEM Ireland Ltd (APEM) was commissioned by Roughan and O'Donovan (ROD) to conduct freshwater macroinvertebrate surveys and chemical analysis on the Stradbrook Stream, Monkstown, Co. Dublin in advance of a Strategic Housing Development at Dalguise House. A single survey was conducted at each site, giving a general indication of baseline conditions of the stream prior to the construction phase of the project.

2. Methods

1.1 Sampling Locations

The Stradbrook stream runs from the west to the east of the development site, forming the northern edge of the site. Two locations were selected for the survey, upstream (Site 1 at Drayton Close) and downstream (Site 2 at Richmond Green) of the development area, so that data collected during the works can be used to determine if any impact from the works is occurring by comparing results to an upstream control site (Figure 1). Photos of both sites are provided in Appendix 1.

Figure 1 The two sampling sites surveyed on the Stradbrook Stream

1.2 Field Sampling

Macroinvertebrate sampling was conducted on the 12th of October 2021 according to the standard methodology used by the EPA (Toner *et al.,* 2005). Surveys were conducted in dry conditions and mild weather, with an air temperature of 13.5^{o}C. Water levels were moderate, suitable for kick sampling. A two-minute macroinvertebrate kick sample was conducted at each site using a standard 1 mm mesh size long-handled net, from the faster flowing riffle habitats. A further one-minute hand search was carried out to locate macroinvertebrates that remained attached to the underside of the cobbles. Samples were sorted 'bankside' and taxa present were recorded to the lowest possible level possible under field conditions; their relative abundance was also estimated and recorded. Voucher specimens were kept for each of the major groups – these were preserved in alcohol on site to be returned to the lab for as detailed (genus and species where possible) an identification as possible. The remaining sample material was returned to the stream.

In addition to the macroinvertebrate sampling, measurements of dissolved oxygen concentration, temperature, conductivity and pH were measured on-site using an YSI Professional Plus handheld multiparameter probe. Water samples were collected at each site and subsequently analysed. Additional Qualifying Criteria, as specified for Q value assessment, were recorded (described in Appendix 2).

1.3 Laboratory Analysis

Macroinvertebrate voucher specimen samples were processed in the APEM laboratory in accordance with the methodology described in the Environment Agency's Operational Instruction 024_08 (issued 28/01/2014). The invertebrates identified, under a binocular microscope, to the lowest possible level using the standard range of identification keys published by the Freshwater Biological Association, AIDGAP and others. A list of the macroinvertebrate taxa recorded, as well as their percentage relative abundance, can be found in Table 3. This list informed the calculation of all macroinvertebrate indices, including the Q-value. Water bottles were delivered to City Analysts Ltd for chemical analyses and results returned to APEM subsequently.

1.4 Metrics Calculation

Several metrics were applied to the benthic invertebrates collected at each site (Table 4). An EPA Q-value classification was assigned to each site. The Q-values were assigned based on the presence and relative abundance of sensitive groups and the consideration of additional qualifying criteria, as described by Toner *et al.* (2005), outlined in more detail in Appendix 2. Ecological status of the macroinvertebrate biological quality element of each site (as required by the Water Framework Directive) is reported in Table 4, based on the Q values assigned.

Additional standard metrics (Biological Monitoring Working Party (BMWP) score, Average Score Per Taxon (ASPT), Whalley Hawkes Paisley Trigg (WHPT), WHPT-ASPT and WHPT-NTAXA (number of taxa)) scores were calculated for each site, described in more detail in Appendix 2.

The BMWP and ASPT scores are similar to the Q-value, in that they are based on the sensitivity and tolerance of macroinvertebrate taxa to organic pollution. Families with low tolerance to pollution score higher in the BMWP and pollution-tolerant taxa score lower. BMWP index may depend on numerous other factors as well, such as physical habitat structure and may be altered significantly depending on whether the sampling process captures species found in some habitats but not in others. Standardisation of the BMWP score is provided by the ASPT, allowing robust comparisons among sites.

The WHPT is an enhancement of the BMWP, and is used in the UK for monitoring, assessing and classifying rivers in accordance with the requirements of the Water Framework Directive (WFD). This classification is generated by calculating the number of abundance weighted WHPT scoring families found during sampling (WHPT NTAXA), and the WHPT-ASPT, which standardises the WHPT score to an average per taxa to allow a standardised comparison among sites and comparing these values to the values that might be expected under undisturbed or reference conditions for that site. More detail on all macroinvertebrate metrics are given in Appendix 2.

3. Data Summary

The following results have also been provided to ROD as excel files.

3.1 Physico-chemical readings

Table 1 Summary of physicochemical readings recorded *in situ* at each site

Parameter	Unit	Site 1	Site 2
Temperature	(°C)	11.4	10.9
Dissolved Oxygen	(mg/l)	123	100
Dissolved Oxygen (calculation)	(%)	13.6	11.1
Salinity	ppt	0.22	0.22
Specific conductivity	µS/cm	453	458
pH		9.05	9.45
Additional Information	Substrate	Predominantly pebble and sand (75%), remaining a mix of cobble, gravel, silt and woody debris (25%)	Predominantly pebble (75%), remaining a mix of gravel, sand, silt and woody debris
	Notes	Piped underground directly upstream; Sewage Fungus visible; litter present; moderately silted; storm drains present	Sewage Fungus visible; litter present; moderately silted; storm drain present above bridge

Table 2 Summary of water quality parameters analysed in the laboratory for each site

Parameter	Unit	Site 1	Site 2
Alkalinity	mg/l	101	176
Ammonia as N	mg/l	0.265	0.290
BOD (biochemical oxygen demand)	mg/l O_2	3	**2***
Calcium, Soluble	mg/l	121.314	75.311
COD (chemical oxygen demand)	mg/l O_2	**8.0***	8.0
Copper, Soluble	µg/l	2.19	**2.00***
Dissolved Organic Carbon	mg/l	9.75	9.23
Hardness as CaCO3	mg/l	341	213
Nitrite as N02	mg/l	0.259	0.288
Nitrate as N03	mg/l	16.8	10.1
Iron - Total	ug/l	48.2	45.7
Cadmium, Soluble	ug/l	**0.2***	**0.2***
Iron, Soluble	ug/l	**7.2***	**7.2***
Zinc, Soluble	ug/l	6.1	**2.8***
Orthophosphate as P	mg/l	0.444	0.039
Phosphorus, Total as P	mg/l	0.599	0.158
Total Dissolved Solids	mg/l	508.000	235.000
Total Suspended Solids	mg/l	9	9
Arsenic - Dissolved	µg/l	5.0	1.3

*Values in bold are lower than laboratory limit of detection, and are presented at face value

3.2 Macroinvertebrates Survey Results and Indices

Table 3 Taxa list and % relative abundance of macroinvertebrate taxa recorded at each site

Order/Group	Family	Species/genus	Site 1	Site 2
Tricladida	Planariidae	*Polycelis nigra/tenuis*	<5%	<5%
		Dugesia lugubris/polychroa	<1%	<1%
Gastropoda	Tateidae	*Potamopyrgus antipodarum**	5-10%	5-10%
	Lymnaeidae			<5%
Oligochaeta			<1%	<5%
Hirudinea	Glossiphoniidae		<5%	<5%
		Glossiphonia complanata	Confirmed	
	Erpobdellidae		<5%	5-10%
		Trocheta pseudodina (bykowskii)	Confirmed	
Isopoda	Asellidae	*Asellus aquaticus*	<5%	<5%
Amphipoda	Gammaridae		>75%	>75%
		Gammarus duebeni	Confirmed	
Trichoptera	Limnephilidae			<1%

Order/Group	Family	Species/genus	Site 1	Site 2
		Micropterna sequax		Confirmed
Diptera	Ceratopogonidae			<1%
	Chironomidae		<5%	5-10%
Coleoptera	Elmidae			<1%

*Invasive alien species (IAS)

Table 4 Summary of macroinvertebrate indices including Q value assigned and total number of taxa observed at each site

Site	Q Value	WFD Ecological Status	BMWP*	ASPT*	WHPT*	WHPT – ASPT*	WHPT-NTAXA
Site 1	Q3	Poor	26	3.25	31.8	3.53	9
Site 2	Q3	Poor	41	3.73	52	4	13

*calculated based on presence/absence data as total abundance was not recorded.

4. References

Feeley, H.B., Bradley, C., Free, G., Kennedy, B., Little, R., McDonnell, N., Plant, C., Trodd, W., Wynne, C., and O'Boyle, S., 2020. A national macroinvertebrate dataset collected for the biomonitoring of Ireland's river network, 2007–2018. Sci Data 7, 280.

Toner, P., Bowman, J., Clabby, K., Lucey, J., McGarrigle, M., Concannon, C., Clenaghan, C., Cunningham, P., Delaney, J., O'Boyle, S., MacCarthaigh, M., Craig, M. and Quinn, R., 2005. Water Quality in Ireland: 2001– 2003. Environmental Protection Agency, Johnstown Castle Estate, Wexford, Ireland.

Appendix 1 Photos

Figure A Site 1 - Facing Upstream

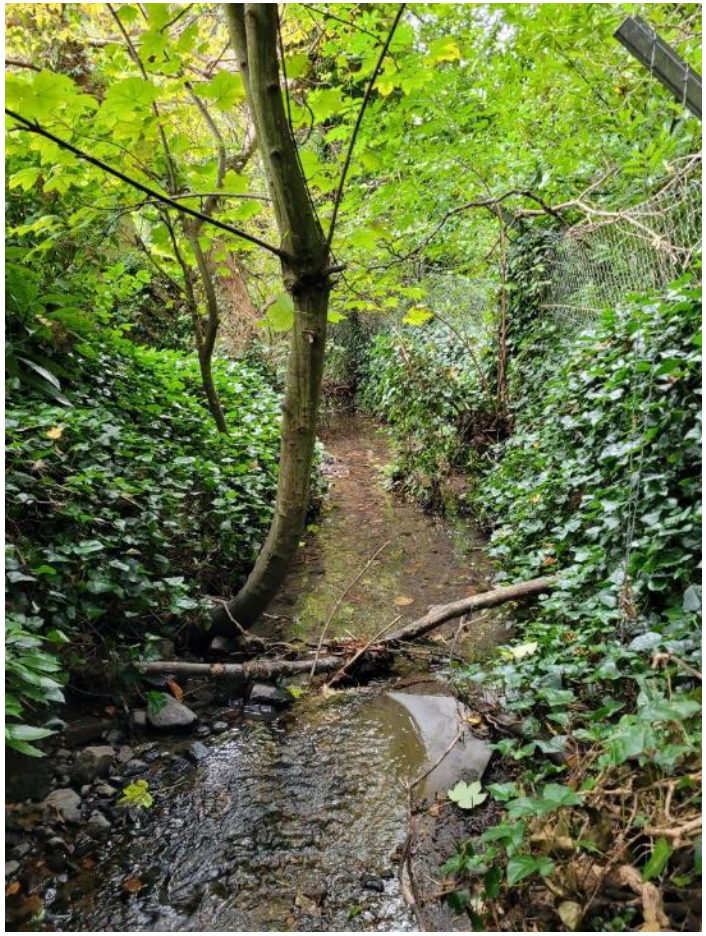

Figure B Site 1 - Facing Downstream

Figure C Site 1 - Sewage fungus

Figure D Site 1 - Storm drain

Figure E Site 2 - Facing upstream

Figure F Site 2 - Facing downstream

Figure G Site 2 - Storm drain adjacent to bridge

Figure H Site 2 - Sewage fungus at base of drain

Appendix 2 Macroinvertebrate Metrics

Q-Value Assessment

The EPA Q-value classification is assigned based on the assessment of the macroinvertebrate sample, which involves recording the taxa present at a suitable and attainable taxonomic resolution (under field conditions) and their categorical relative abundance determined using approximate counts (as described in Feeley *et al*., 2020). From this, the number of taxa present and categorical relative abundance of sensitive (Group A), less sensitive (Group B), tolerant (Group C), very tolerant (Group D) and most tolerant (Group E) taxa to organic pollution is examined. Additional Qualifying Criteria are also considered, consisting of recording the abundance of *Cladophora* spp, Macrophytes, and slime growths / sewage fungus, as well as the Dissolved Oxygen Saturation % and the level of substratum siltation. Then, based on the combination of number and relative abundance of the sensitive or tolerant groups present, a Q-value is assigned. Details on the assignment of the scores can be found in Toner *et al*., (2005).

In Ireland, macroinvertebrates are the main Biological Quality Element (BQE) determining the ecological status in rivers (required by the Water Framework Directive; WFD) and are based on the Q-value. The WFD requires BQE scores to be expressed as an Ecological Quality Ratio (EQR) to standardize and provide a common scale of ecological quality across participatory Member States using differing national methods. Intercalibration of the Q-value with the EQR and the corresponding ecological status are described in Table A.

Table A: EPA water quality status summary, comparing the Q-value, ecological quality ratio (EQR), corresponding Water Framework Directive (WFD) status and pollution gradient resulting from anthropogenic pressures (Feeley et al., 2020).

Q value Score	EQR	Pollution Gradient	WFD Ecological Status
Q5	1.0	Unpolluted	High
Q4-5	0.9	Unpolluted	High
Q4	0.8	Unpolluted	Good
Q3-4	0.7	Slightly Polluted	Moderate
Q3	0.6	Moderately Polluted	Poor
Q2-3	0.5	Moderately Polluted	Poor
Q2	0.4	Seriously Polluted	Bad
Q1-2	0.3	Seriously Polluted	Bad
Q1	0.2	Seriously Polluted	Bad

BMWP and ASPT

The Biological Monitoring Working Party (BMWP) index was designed to identify the degree of organic pollution based on the natural sensitivity of taxon to the pollution. Aquatic organisms

respond to chemical changes in water, in particular to the changes in dissolved oxygen concentrations. As pollution levels increase, the microbial oxygen demand rises, resulting in a decline in available oxygen concentrations. Many stream organisms require high dissolved oxygen concentration and are therefore not found in water bodies with lower oxygen concentrations. Macroinvertebrate families which are sensitive to pollution are assigned high BMWP scores, while pollution-tolerant taxa score low. In the BMWP system, benthic invertebrate taxa are assigned a score between 1 (tolerant to organic pollution) and 10 (intolerant to organic pollution). The BMWP score is the sum of the values for all families present in the sample. The number of BMWP-scoring families is typically recorded alongside the BMWP score, as is the Average Score Per Taxon (ASPT), which can be determined by dividing the BMWP score by the number of scoring taxa present. The BMWP score may vary significantly depending on whether the sampling process captures species found in some habitats but not in others. Standardisation of the BMWP score is therefore provided by the ASPT, with the average BMWP score per taxon allowing robust comparisons among sites.

WHPT and WHPT-ASPT

The Whalley Hawkes Paisley Trigg (WHPT) metric is used in the UK for monitoring, assessing and classifying rivers in accordance with the requirements of WFD based on assessing the ecological quality of the macroinvertebrates present when sampled. It is a revised version of the original BMWP index. Empirical data was used in the development of the WHPT index to assign abundance related sensitivity weights to taxa. The taxa included in the index are modified from those used for the BMWP index and a number of taxa were removed due to insufficient data; some additional families were included where sufficient data were available, and some existing BMWP composite taxa were split into their constituent families. The WHPT-ASPT values typically range from 1 (indicative of sites with high organic pollution and degradation) to 13 (indicative of sites with very low organic pollution and degradation). The WHPT-ASPT score standardises the WHPT score to an average per taxa to allow a robust comparison among sites.

In the UK, a WFD macroinvertebrate classification for a river site is generated by calculating the number of abundance weighted WHPT scoring families found during sampling (WHPT NTAXA), and the WHPT-ASPT, and comparing these values to the values that might be expected under undisturbed or reference conditions for that site. These undisturbed or reference scores are predicted by statistical models produced by the River Invertebrate Classification Tool (RICT) – as RICT predicts invertebrate communities at reference conditions. The observed values of WHPT ASPT and WHPT NTAXA are compared to the predicted values to generate an Environmental Quality Ratio (EQR). EQRs close to 1.0 indicate that invertebrate communities are close to their natural state. However, the RICT is only appropriate for use in the UK and is not used in Ireland.