Natura Impact Statement

Proposed Strategic Housing Development, 'Kenelm', at lands in Deer Park, Howth, Co. Dublin.

prepared for GLL PRS Holdco Ltd.

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Table of Contents

1 Introduction

1 This report has been prepared by Scott Cawley Ltd. for the applicant, GLL PRS Holdco Limited who is seeking permission for a proposed Strategic Housing Development in lands at Deer Park, , Howth, Co. Dublin (hereinafter referred to as the proposed development) at Irish Grid Reference O 27676 39262.

2 This Natura Impact Statement (NIS) has been prepared in accordance with the provisions of Part XAB of the Planning and Development Act, 2000 (as amended) and in accordance with the requirements 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).

3 It considers the implications of the proposed development, on its own and in combination with other plans or projects, for European sites[1] in view of the conservation objectives of those sites. It includes a scientific examination of evidence and data to identify and assess the implications of the proposed development for any European sites in view of the conservation objectives of those sites. It considers whether the proposed development, by itself and in combination with other plans or projects, would adversely affect the integrity of any European sites. In reaching a conclusion in this regard consideration is given to any mitigation measures necessary to avoid or reduce any potential negative impacts.

4 The purpose of this NIS is to provide an examination, analysis and evaluation of the potential impacts of the proposed development on European sites and to present findings and conclusions with respect to the proposed development in light of the best scientific knowledge in the field. This NIS will inform and assist the competent authority, An Bord Pleanála, in carrying out its Appropriate Assessment as to whether or not the proposed development will adversely affect the integrity of any European sites, either alone or in combination with other plans and projects, taking into account their conservation objectives.

5 The proposed development is neither connected with nor necessary to the management of any European sites.

2 Legislative Context

6 The Birds and Habitats Directives - Council Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (the Birds Directive) and Council Directive 92 /43 /EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive) – require Ireland to establish protected sites as part of a European wide network of sites (the Natura 2000 network which are known in Ireland as European sites) for habitats and species that are of international importance for conservation. In Ireland, European sites include Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). SACs are selected for habitats listed on Annex I of the Habitats Directive (including priority Annex I habitat types which are in danger of disappearance) and species listed on Annex II. SPAs are selected for bird species (listed on Annex I of the Birds Directive), regularly-occurring populations of migratory bird species (such as ducks, geese and waders), and areas of international importance for migratory birds. The specified habitats and species for which each SAC and SPA is selected, correspond to the qualifying interests (in the case of SACs) or special conservation interest species (in the case of SPAs) for the sites, for which conservation objectives are prepared.

7 Article 6(3) of the Habitats Directive states that:

[1] The Natura 2000 network of sites are defined under the Habitats Directive (Article 3) as a European ecological network of special areas of conservation, composed of sites hosting the natural habitat types listed in Annex I and species listed in Annex II, and special protection areas classified pursuant to the Birds Directive (2009/147/EC). The aim of the network is to aid the long-term survival of Europe's most valuable and threatened species and habitats. In Ireland, these sites are designed as *European sites* – as defined under the Planning and Development Acts and/or Birds and Habitats Regulations as (a) a candidate site of Community importance, (b) a site of Community importance, (c) a candidate special area of conservation, (d) a special area of conservation, (e) a candidate special protection area, or (f) a special protection area. They are commonly referred to in Ireland as candidate Special Areas of Conservation (cSACs) and Special Protection Areas (SPAs).

'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 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.'

8 This provision is transposed into Irish law by Part XAB of the Planning and Development Acts 2000 as amended. Section 177U(4) of the said Acts provides for screening for Appropriate Assessment as follows:

'The competent authority shall determine that an appropriate assessment of [...] a proposed development [...] is required if it cannot be excluded, on the basis of objective information, that the [...] proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site.'

9 Section 177U(5) provides as follows:

'The competent authority shall determine that an appropriate assessment of a […] proposed development, […], is not required if it can be excluded, on the basis of objective information, that the […] proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site.'

10 Section 177T(1) and (2) provide that a NIS is '*a statement, for the purposes of Article 6 of the Habitats Directive, of the implications of a proposed development, on its own or in combination with other plans or projects, for one or more than one European site, in view of the conservation objectives of the site or sites' and specifies that it 'shall include a report of a scientific examination of evidence and data, carried out by competent persons to identify and classify any implications for one or more than one European site in view of the conservation objectives of the site or sites'*.

11 The Court of Justice of the European Union (CJEU) has made a number of rulings in relation to Appropriate Assessment, regarding when it is required, its purpose and the standards it should meet. Two of the key rulings include, Case C-127/02 Waddenzee where the CJEU found that '*Any plan or project not directly connected with or necessary to the management of the site is to be subject to an appropriate assessment of its implications for the site in view of the site's conservation objectives if it cannot be excluded, on the basis of objective information, that it will have a significant effect on that site, either individually or in combination with other plans or projects*' and that the plan or project may only be authorised '*where no reasonable scientific doubt remains as to the absence of such effects*', and Case C-258/11 where the CJEU found that *'[The Appropriate Assessment] cannot have lacunae and must contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the works proposed on the protected site concerned*'.

12 Consideration has been given in the preparation of this report, to the evolution in interpretation and application of directives and national legislation arising from jurisprudence of the European and Irish courts, in respect of Article 6 of the Habitats Directive.

3 Methodology

3.1 Scientific and Technical Competence Relied Upon

13 This NIS was authored by Lorna Gill BA MSc and reviewed by Caroline Kelly BSc. MSc. Senior Ecologist and approved by Andrew Speer Technical Director of Scott Cawley Ltd. The background and experience of the author of this report is set out below with details on reviewers set out in Appendix I.

14 Lorna Gill is a Consultant Ecologist with Scott Cawley. Lorna holds an MSc in Conservation and Biodiversity from the University of Exeter and an honours degree in Natural Sciences with a specialisation in Zoology from Trinity College Dublin. Lorna is experienced in carrying out field surveys in Ireland including wintering birds, breeding birds, bats and other protected mammals. Other experience includes monitoring badger sett closures, radiotracking bats, manual bat call analysis and the use of GIS software. At Scott Cawley,

Lorna's work also includes data analysis and the preparation of Appropriate Assessment reports and Ecological Impact Assessments for residential and other commercial projects across the country. Recent ecological assessments as part of an EIAR include an assessment as part of an EIAR for Strategic Housing Development (SHD) at Abingdon, Shanganagh Road, Shankill, Dublin 18 (Bord Pleanála Ref: 308418). This is a development of 193 no/ build to rent apartments and associated works. The application has been granted with conditions. An assessment as part of an EIAR for the construction of 2 no. two storey Information Communication Technology (ICT) facilities in Grange Castle West, Milltown, Newcastle, Co. Dublin (Ref SD20A/0324). The application is currently subject to additional information. An assessment as part of an EIAR for the construction of a 110kV GIS substation compound and grid connection at Grange Castle, Co. Dublin (Bord Pleanála Ref: PL06S.309201).

3.2 Guidance and Approach

15 This NIS has been prepared having regard to the following documents.

European Commission Guidance

- *Assessment of Plans and Projects Significantly Affecting Natura 2000 sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC* (European Commission, 2001)
- *Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC* (European Commission, 2019)
- *Communication from the Commission on the Precautionary Principle* (European Commission 2000)[2]
- *Nature and Biodiversity Cases – Ruling of the European Court of Justice* (European Commission 2006)
- *Article 6 of the Habitats Directive – Rulings of the European Court of Justice* (European Commission Final Draft September 2014)

Irish Guidance

- *Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities* (Department of Environment, Heritage and Local Government 2010 revision)
- Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities. *Circular NPW 1/10 & PSSP 2/10* (NPWS, 2010)
- *OPR Practice Note PN01. Appropriate Assessment Screening for Development Management* (Office of the Planning Regulator, 2021)

[2] The precautionary principle is a guiding principle that derives from Article 191 of the Treaty on the Functioning of the European Union and has been developed in the case law of the European Court of Justice (e.g. ECJ case C-127/02 – Waddenzee, Netherlands).

This guidance document notes that the precautionary principle "*covers those specific circumstances where scientific evidence is insufficient, inconclusive or uncertain and there are indications through preliminary objective scientific evaluation that there are reasonable grounds for concern that the potentially dangerous effects on the environment, human, animal or plant health may be inconsistent with the chosen level of protection*".

Applying the precautionary principle in the context of screening for appropriate assessment requires that where there is uncertainty or doubt about the risk of significant effects on a European site(s), it should be assumed that significant effects are likely and AA must be carried out.

16 In addition, regard has been had to the following guidance in characterising impacts, including determining magnitude and significance of impacts, as relevant in the application to Appropriate Assessment and European sites:

- *Guidelines for Ecological Impact Assessment in the UK and Ireland* (Chartered Institute of Ecology and Environmental Assessment, 2018)

3.3 Assessment Methodology

17 The proposed development (including the proposed design, construction methodologies and operational effects) was analysed and assessed to identify the potential impacts associated with the proposed development that could affect the ecological environment.

18 From this, the zone of influence of the proposed development was defined. Based on the identified impacts, and their zone of influence, the European sites potentially at risk of any direct or indirect impacts were identified.

19 In establishing which European sites are potentially at risk (in the absence of mitigation) from the proposed development, a source-pathway-receptor approach was applied. In order for an impact to occur, there must be a risk enabled by having a source (e.g. water abstraction or construction works), a receptor (e.g. a European site or its Qualifying Interest(s) (QIs) or Special Conservation Interest(s) (SCIs) species), and a pathway between the source and the receptor (e.g. pathway by air for air borne pollution, or a pathway by a watercourse for mobilisation of pollution). For an impact to occur, all three elements must exist; the absence or removal of one of the elements means there is no possibility for the impact to occur.

20 The identification of source-pathway-receptor connection(s) between the proposed development and European sites essentially is the process of identifying which European sites are within the zone of influence of the proposed development, and therefore potentially at risk of significant effects. The zone of influence is defined as the area within which the proposed development could affect the receiving environment such that it could potentially have significant effects on the QI habitats or QI/SCI species of a European site, or on the achievement of their conservation objectives (as defined in CIEEM, 2018).

21 The identification of a source-pathway-receptor risk does not automatically mean that significant effects will arise. The likelihood of significant effects will depend upon the characteristics of the source (e.g. extent and duration of construction works), the characteristics of the pathway (e.g. direction and strength of prevailing winds for air borne pollution) and the characteristics of the receptor (e.g. the sensitivities of the European site and its QIs/SCIs). However, identification of the risk does mean that there is a possibility of ecological or environmental damage occurring, with the significance of the effect depending upon the nature and exposure to the risk and the characteristics of the receptor. In this case, where there is uncertainty, the precautionary principle has been applied.

22 This assessment has been undertaken in consideration of all potential impact sources and pathways connecting the proposed development to European sites, in view of the conservation objectives supporting the conservation condition of the sites' QIs/SCIs.

23 The conservation objectives relating to each European site and its QIs/SCIs are expressed generally for SACs as "to maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the cSAC has been selected", and for SPAs "to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA".

24 Following on from this, and as defined in the Habitats Directive, favourable conservation status (or condition, at a site level) of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable

25 The favourable conservation status (or condition, at a site level) of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis

26 Where site-specific conservation objectives have been prepared for a given European site, these include a series of specific attributes and targets against which effects on conservation condition, or integrity, can be measured, i.e. an impact which affects the achievement of favourable conservation condition, as measured by the attributes and targets, is an impact on site integrity.

27 In the case of some QIs/SCIs in certain European sites, the conservation objective is to restore rather than maintain conservation condition and this distinction is taken into account in the assessment; as is any legacy damage to European sites that has occurred since their designation, insofar as possible.

3.4 Desktop Study

28 The desktop data sources used to inform the assessment presented in this report are as follows (accessed on the 18 February 2021):

- Online data available on European sites and protected habitats/species as held by the National Parks and Wildlife Service (NPWS) from www.npws.ie[3], including conservation objectives documents
- Online data available on protected species as held by the National Biodiversity Data Centre (NBDC) from www.biodiversityireland.ie
- Information on the surface water network and surface water quality in the area available from www.epa.ie
- Information on groundwater resources and groundwater quality in the area available from www.epa.ie and www.gsi.ie
- Ordnance Survey of Ireland mapping and aerial photography available from www.osi.ie
- Information on the location, nature and design of the proposed development supplied by the applicant's design team
- Fingal Development Plan 2017-2023[4]
- Fingal Biodiversity Action Plan 2010 - 2015[5]
- National Biodiversity Action Plan 2017 – 2021[6]

3.5 Consultations

29 A consultation letter was submitted by email to the Development Applications Unit of the Department of Culture, Heritage and the Gaeltacht on 09 February 2021. The letter included an outline description of the

[3] The following SAC and SPA GIS boundary datasets are the most recently available at the time of writing: SAC_ITM_2019_12 and SPA_ITM_2019_12.

[4] The Fingal Development Plan 2017-2023 (Fingal County Council, 2017)

[5] The Fingal Biodiversity Action Plan 2010 - 2015 (Fingal County Council, 2010)

[6] National Biodiversity Action Plan 2017-2021 (NPWS, 2017)

proposed development, and a request for any comments on the proposal. No response has been received by Scott Cawley prior to submission of the planning application for the proposed development.

30 The Board in their Opinion on SHD proposals directed the Applicant to the statutory bodies that must be notified of the making of the application. One of those statutory bodies included was the Dept Department of Culture, Heritage and the Gaeltacht. A full copy of the application will be sent to the Department of Culture, Heritage and the Gaeltacht at the time of lodgement to An Bord Pleanála.

3.6 Baseline Surveys

31 This section describes the methodologies followed for the ecological surveys undertaken to inform the assessment presented in this NIS.

Table 1 Ecological surveys and survey dates

Survey	Survey Date(s)	Surveyor(s)
Habitat and flora surveys	22nd October 2019 3rd June 2020	Scott Cawley Ltd.
Terrestrial mammal surveys	22nd October 2019 3rd June 2020	Scott Cawley Ltd.
Breeding bird surveys	3rd June 2020 11th June 2020	Scott Cawley Ltd. and independent ornithologist John Fox
Wintering bird surveys	22nd October 2019 15th November 2019 29th November 2019 12th December 2019 23rd December 2019 10th January 2020 29th January 2020 13th February 2020 26th February 2020 12th March 2020 24th March 2020 26th November 2020 10th December 2020 15th December 2020 25th January 2021 29th January 2021 16th February 2021 25th February 2021 11th March 2021 15th March 2021	Scott Cawley Ltd. and independent ornithologists Hugh Delaney and Kathryn Sheridan
Winter bird camera monitoring	December 9th 2019 to March 30th 2020	Evercam

3.6.1 Habitats and Flora

32 An initial habitat survey was undertaken of the proposed development site on 22nd October 2020 by Colm Clarke of Scott Cawley Ltd. Habitats on site were re-assessed later in the growing season on 3rd June 2020. Habitat surveys followed the methodology described in *Best Practice Guidance for Habitat Survey and*

Mapping[7]. All habitat types were classified using the *Guide to Habitats in Ireland*[8], recording the indicator species and recording any species of conservation interest. Vascular and bryophyte plant nomenclature generally follow that of The National Vegetation Database[9], having regard to more recent taxonomic changes to species names after the *New Flora of the British Isles*[10] and the British Bryological Society's *Mosses and Liverworts of Britain and Ireland: A Field Guide*[11].

3.6.2 Wintering Birds

33 Wintering bird surveys were undertaken across two wintering bird seasons, from October 2019 to March 2020 in the 2019/20 wintering bird season, and between November 2020 and March 2021 in the 2020/21 wintering bird season. Dates of surveys are included in Table 1 above.

34 Surveys were completed by independent ornithologists Hugh Delaney and Kathryn Sheridan as well as Colm Clarke, Cathal O'Brien, Shane Brien, Nicholas Fettes, Emmi Virkki, and Lorna Gill, all of Scott Cawley Ltd. Wintering bird surveys were conducted using a methodology based on the *Bird Monitoring Methods - A Manual of Techniques for Key UK Species*.

35 The study area covered the proposed development site, and the adjacent Deerpark Golf Course up to *c.* 300m[12] from the proposed development site boundary. The Golf Course section was surveyed visually using binoculars/scope by a team of two surveyors on each survey visit. The proposed development site was checked for evidence of usage by wildfowl such as swans or geese (e.g., droppings). Birds were identified by sight and general location and activity were recorded using the British Trust for Ornithology (BTO) species and activity codes. Observations of birds at Claremont Strand were also undertaken from a vantage point north of the Howth DART station at high, low, and mid-tide, on each survey date.

36 In addition to the winter bird surveys, the applicant engaged Evercam Ltd. to install 8 no. cameras in areas identified by Scott Cawley Ltd. as having been used by brent geese in the past, see Figure 1, and which were known (in November 2019) to continue to be used by brent geese and other wintering wetland bird species associated with protected sites. These cameras collected data on the use of Deerpark Golf Course lands by brent geese and other wintering bird species between December 2019 and March 2020. The data collected was utilised by Scott Cawley to complement information collected from field surveys and to inform their assessment of the proposed development.

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[7] Smith, G.F., O'Donoghue, P., O'Hora, K. & Delaney, E. (2011) *Best Practice Guidance for Habitat Survey and Mapping*. The Heritage Council Church Lane, Kilkenny, Ireland.

[8] Fossitt, J.A. (2000) A Guide to Habitats in Ireland. Heritage Council, Kilkenny.

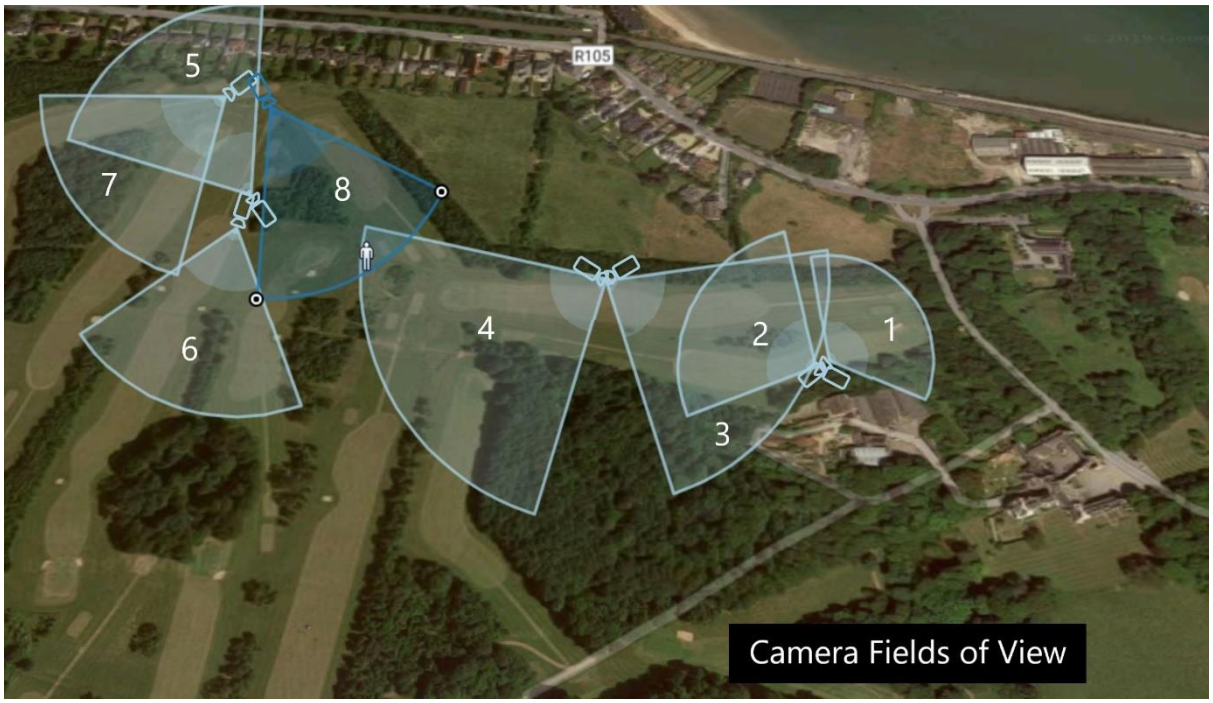
[9] Weekes, L.C. & FitzPatrick, Ú. (2010) The National Vegetation Database: Guidelines and Standards for the Collection and Storage of Vegetation Data in Ireland. Version 1.0. Irish Wildlife Manuals, No. 49. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland.

[10] Stace, C. (2019) *New Flora of the British Isles*. *4th Edition*. C&M Floristics.

[11] Atherton, I., Bosanquet, S. & Lawley, M. (2010) *Mosses and Liverworts of Britain and Ireland: A Field Guide*. Latimer Trend & Co., Plymouth.

[12] For birds, disturbance effects would not be expected to extend beyond a distance of c.300m, as noise levels associated with general construction activities would attenuate to close to background levels at that distance. The disturbance zone of influence for waterbirds is based on the relationship between the noise levels generated by general construction traffic/works (BS 5228:2009 Code of Practice for Noise and Vibration Control on Construction and Open Sites – Part 1 Noise) and the proximity of those noise levels to birds – as assessed in Cutts, N. Phelps, A. & Burdon, D. (2009) *Construction and Waterfowl: Defining Sensitivity, Response, Impacts and Guidance*, and Wright, M., Goodman, P & Cameron, T. (2010) Exploring Behavioural Responses of Shorebirds to Impulsive Noise. *Wildfowl* (2010) 60: 150–167. At 300m, noise levels are below 60dB or, in most cases, are approaching the 50dB threshold below which no disturbance or displacement effects would arise.

Figure 1: Evercam camera layout



3.6.3 Breeding Birds

37 Breeding bird surveys were undertaken in the proposed development site on the 3rd June 2020 by Colm Clarke of Scott Cawley, and on 11th June 2020 by independent ornithologist John Fox, using a methodology adapted from the *Bird Monitoring Methods - A Manual of Techniques for Key UK Species (*Gilbert, Gibbons, & Evans, 1998). The study area encompassed the proposed development site and immediate vicinity. Lands within the study area were slowly walked in a manner allowing the surveyor to come within 50m of all habitat features. Birds were identified by sight and song, and general location and activity were recorded using the British Trust for Ornithology (BTO) species and activity codes.

3.6.4 Survey Limitations

38 Due to timing of engagement of Scott Cawley Ltd. by the client, the full winter bird season (generally taken as October- March inclusive) could not be covered for either the 2019/2020 surveys or 2020/2021 surveys. Surveys in 2019/2020 commenced on 22nd October, thereby missing the first 3 weeks of the winter bird season, and surveys in 2020/2021 commenced on 24th November thereby missing the first 7 weeks of the winter bird season. This is not considered a limitation given that there were two winter seasons covered and the period not covered on both years consisted of early in the winter bird season when birds are less likely to forage inland.

4 Description of the Proposed Development

39 A full description of the proposed development is included in the planning application documentation. The proposed development site currently comprises a greenfield site which is bounded to the south by the Deer Park Golf Course, to the east by a side road that leads to Howth Castle, to the north by the Howth Road, and to the west by private dwellings.

40 In brief, the proposed development will comprise residential units set out in 3 no. apartment blocks, with blocks A and B over a basement for parking. Blocks A, B and C will have a height up to a maximum of six storeys, 19.57m, of apartments over a basement, excavated to a depth of 4.5m to 7m, for car parking. The development will consist of a total of 162 no. residential units, which includes 29 no. one bed, 104 no. two bed and 29 no. three bed apartments. There will be 3 no. resident services and amenity rooms (1 no. in each block A-C) to accommodate co-working space, a community room and a meeting room.

41 The proposed development also includes 132 no. car parking spaces at basement level (underlying Blocks A & B) including 6 no. accessible spaces, 13 no. electric vehicle spaces and 4 no. car sharing spaces. 325 no. residents bicycle parking spaces (long-stay) at basement level, and 30 no. visitor bicycle parking spaces (short-stay) at surface level.

42 The proposed development includes communal amenity space in the form of courtyards and roof gardens, public open space of 1,161 sq.m including a botanic garden and pocket park; a single storey ESB sub-station and switch room; the demolition of 2 no. sections of the existing demesne northern boundary wall to provide, a primary access (vehicular/pedestrian/cyclist) to the northwest and a separate pedestrian/cyclist access to the northeast; restoration and refurbishment of the remaining extant northern and eastern demesne boundary wall; change of use and regrading of part of the Deer Park Golf Course from active recreation use to passive amenity parkland and planting of a woodland belt on the southern boundary; undergrounding of existing ESB overhead lines, and, relocation of the existing gas main; and, all ancillary site development works including waste storage and plant rooms at basement level, drainage, landscaping/boundary treatment and lighting.

Surface water

43 There is no existing surface water infrastructure within the proposed development site. On Howth Road, to the north west of the site, there is an existing 450mm diameter surface water sewer that discharges north towards the coast into Baldoyle Bay.

44 A new 150mm diameter HDPE water main pipe will be installed on site. It is proposed to provide 1no. connection to the existing water main system on Howth Road. The watermain connection will incorporate a bulk water meter and sluice valves to the requirements of Irish Water.

Foul water

45 There is no existing foul sewer infrastructure within the proposed development site boundary. There is an existing 400mm diameter concrete foul sewer and manhole to the north of the site, adjacent to Howth Road.

46 The proposed development will be served by a gravity foul network and it is proposed to provide 1no. connection from the site drainage system into the existing public 400mm diameter wastewater network. A new 225mm diameter foul sewer will connect into the existing foul manhole to the north of the site. This connection will serve as the proposed developments foul connection to the I.W wastewater network. During operation, foul water generated by the proposed development comprising 328 Population Equivalent (P.E.) will ultimately be discharges to the Ringsend Wastewater Treatment Plant (WWTP) and treated prior to discharge into Dublin Bay.

Sustainable Drainage Systems (SuDS)

47 The proposed development will be situated within an urban environment and therefore the available applicable SuDS measures are limited within the proposed development site. Below are the applicable SuDS measures which have been chosen for the site[13]. The proposed development will comprise of

[13] SUDS measures are included in the design but not for the purposes of avoiding or reducing any potential harmful effects to any European sites. Rather, their inclusion is due to the fact that in the Greater Dublin Area, SUDS are required for new developments under the objectives of the GDSDS and the relevant County Development Plans (see Appendix II for reference). For example, Policy SW04 of the Fingal County Development Plan 2017-2023 states that Fingal will "Require the use of sustainable drainage systems (SuDS) to minimise and limit the extent of hard surfacing and paving and require the use of sustainable drainage techniques where appropriate, for new development or for extensions to existing developments, in order to reduce the potential impact of existing and predicted flooding risks".

podium areas between the blocks of apartments. A significant portion of the podium area comprises of pathways which allows for permeable paving to be incorporated. Other measures such as green roofs, permeable paving, rain gardens, bioretention systems & tree pits and attenuation tanks have also been identified as suitable measures.

48 Whilst certain aspects of the development – such as SUDS – are referenced in the application documentation, absolutely no reliance has been placed on any such measure for the purposes of conducting AA Screening (even though those measures are not directed to the protection of any European site which might potentially be affected by the proposed development).

5 Overview of the Receiving Environment

5.1 European Sites

49 There are no European sites within or directly adjacent to the boundaries of the proposed development site. There are 9 SACs within *c.* 15km of the proposed development and 11 SPAs within *c.* 20km. As birds are mobile, and some wintering goose species can travel up to 20km between roosting and feeding sites[14], it is possible that wintering birds occurring in the vicinity of the proposed development site are associated with SPAs located a significant distance from the proposed development site. The closest European site to the proposed development is Baldoyle Bay SAC; *c*. 170m to the north.

50 The European sites present in the vicinity of the proposed development are listed in
51 Table 2, along with their qualifying interests and proximity to the proposed development, and shown on Figure 2 and Figure 3.

Table 2 European sites in the vicinity of the proposed development

European Site Name [Code] and its Qualifying interest(s) / Special Conservation Interest(s) (*Priority Annex I Habitats)	**Location Relative to the Proposed Development Site**
Special Area of Conservation (SAC)	
Baldoyle Bay SAC [000199] 1140 Mudflats and sandflats not covered by seawater at low tide 1310 Salicornia and other annuals colonizing mud and sand 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) 1410 Mediterranean salt meadows (*Juncetalia maritimi*) NPWS (2012) *Conservation Objectives: Baldoyle Bay SAC 000199.* Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht[15]	*c.* 170m north of the proposed development
Howth Head SAC [000202] 1230 Vegetated sea cliffs of the Atlantic and Baltic coasts 4030 European dry heaths	*c.* 675m south and east of the proposed development

[14] Scottish Natural Heritage (2016) Guidance: Assessing connectivity with Special Protection Areas (SPAs). Version 3

[15] The versions of the conservation objectives documents referenced in this table are the most recent published versions at the time of writing – 06/05/2021

European Site Name [Code] and its Qualifying interest(s) / Special Conservation Interest(s) (*Priority Annex I Habitats)	Location Relative to the Proposed Development Site
NPWS (2016) *Conservation Objectives: Howth Head SAC 000202.* Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.	
North Dublin Bay SAC [000206] 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 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) 1395 Petalwort *Petalophyllum ralfsii* 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 NPWS (2013) *Conservation Objectives: North Dublin Bay SAC 000206.* Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.	*c.* 1.3km south-west of the proposed development
Rockabill to Dalkey Island SAC [003000] 1170 Reefs 1351 Harbour porpoise *Phocoena phocaena* NPWS (2013) *Conservation Objectives: Rockabill to Dalkey Island SAC 003000.* Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.	*c.* 1.8km north-east of the proposed development
Ireland's Eye SAC [002193] 1220 Perennial vegetation of stony banks 1230 Vegetated sea cliffs of the Atlantic and Baltic coasts NPWS (2017) *Conservation Objectives: Ireland's Eye SAC 002193.* Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.	*c.* 1.8km north-east of the proposed development
Malahide Estuary SAC [000205] 1140 Mudflats and sandflats not covered by seawater at low tide 1310 Salicornia and other annuals colonising mud and sand 1330 Atlantic salt meadows *(Glauco-Puccinellietalia maritimae)* 1410 Mediterranean salt meadows *(Juncetalia maritimi)* 2120 Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) 2130 Fixed coastal dunes with herbaceous vegetation (grey dunes) NPWS (2013) *Conservation Objectives: Malahide Estuary SAC 000205.* Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.	*c.* 6.3km north-west of the proposed development

European Site Name [Code] and its Qualifying interest(s) / Special Conservation Interest(s) (*Priority Annex I Habitats)	Location Relative to the Proposed Development Site
South Dublin Bay SAC [000210] 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 NPWS (2013) *Conservation Objectives: South Dublin Bay SAC 000210.* Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.	*c.* 7.8km south-west of the proposed development
Lambay Island SAC [000204] 1170 Reefs 1230 Vegetated sea cliffs of the Atlantic and Baltic coasts 1364 Grey seal *Halichoerus grypus* 1365 Harbour seal *Phoca vitulina* NPWS (2013) *Conservation Objectives: Lambay Island SAC 000204. Version 1*. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.	*c.* 11km north-east of the proposed development
Rogerstown Estuary SAC [000208] 1130 Estuaries 1140 Mudflats and sandflats not covered by seawater at low tide 1310 Salicornia and other annuals colonising mud and sand 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) 1410 Mediterranean salt meadows (*Juncetalia maritimi*) 2120 Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) 2130 Fixed coastal dunes with herbaceous vegetation (grey dunes) NPWS (2013) *Conservation Objectives: Rogerstown Estuary SAC 000208*. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.	*c.* 11.6km north-west of the proposed development
Special Protection Area (SPA)	
North Bull Island SPA [004006] 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*	*c.* 1.3km south-west of the proposed development

European Site Name [Code] and its Qualifying interest(s) / Special Conservation Interest(s) (*Priority Annex I Habitats)	**Location Relative to the Proposed Development Site**
A157 Bar-tailed Godwit *Limosa lapponica* A160 Curlew *Numenius arquata* A162 Redshank *Tringa totanus* A169 Turnstone *Arenaria interpres* A179 Black-headed Gull *Croicocephalus ridibundus* A999 Wetlands & Waterbirds NPWS (2015) *Conservation Objectives: North Bull Island SPA 004006.* Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.	
Ireland's Eye SPA [004117] A017 Cormorant *Phalacrocorax carbo* A184 Herring Gull *Larus argentatus* A188 Kittiwake *Rissa tridactyla* A199 Guillemot *Uria aalge* A200 Razorbill *Alca torda* NPWS (2021) *Conservation objectives for Ireland's Eye SPA [004117].* Generic Version 8.0. Department of Housing, Local Government and Heritage.	*c.* 1.6km north-east of the proposed development
Baldoyle Bay SPA [004016] 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 Wetland and Waterbirds NPWS (2013) *Conservation Objectives: Baldoyle Bay SPA 004016. Version 1.* National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.	*c.* 1.7km north-west of the proposed development
Howth Head Coast SPA [004113] A188 Kittiwake *Rissa tridactyla* NPWS (2021) *Conservation objectives for Howth Head Coast SPA [004113].* Generic Version 8.0. Department of Housing, Local Government and Heritage.	*c.* 1.7km east of the proposed development
Malahide Estuary SPA [004025] A005 Great Crested Grebe *Podiceps cristatus* A046 Light-bellied Brent Goose *Branta bernicla hrota* A048 Shelduck *Tadorna tadorna* A054 Pintail *Anas acuta* A067 Goldeneye *Bucephala clangula* A069 Red-breasted Merganser *Mergus serrator* A130 Oystercatcher *Haematopus ostralegus*	*c.* 5.7km north-west of the proposed development

European Site Name [Code] and its Qualifying interest(s) / Special Conservation Interest(s) (*Priority Annex I Habitats)	Location Relative to the Proposed Development Site
A140 Golden Plover *Pluvialis apricaria* A141 Grey Plover *Pluvialis squatarola* A143 Knot *Calidris canutus* A149 Dunlin *Calidris alpina* A156 Black-tailed Godwit *Limosa limosa* A157 Bar-tailed Godwit *Limosa lapponica* A162 Redshank *Tringa totanus* A999 Wetland and Waterbirds NPWS (2013) *Conservation Objectives: Malahide Estuary SPA 004025.* Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.	
South Dublin Bay and River Tolka Estuary SPA [004024] 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 *Croicocephalus ridibundus* A192 Roseate Tern *Sterna dougallii* A193 Common Tern *Sterna hirundo* A194 Arctic Tern *Sterna paradisaea* A999 Wetland and Waterbirds NPWS (2015) *Conservation Objectives: South Dublin Bay and River Tolka Estuary SPA 004024*. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.	*c.* 6.9km south-west of the proposed development
Lambay Island SPA [004069] A009 Fulmar *Fulmarus glacialis* A017 Cormorant *Phalacrocorax carbo* A018 Shag *Phalacrocorax aristotelis* A043 Greylag Goose *Anser anser* A183 Lesser Black-backed Gull *Larus fuscus* A184 Herring Gull *Larus argentatus* A188 Kittiwake *Rissa tridactyla* A199 Guillemot *Uria aalge* A200 Razorbill *Alca torda* A204 Puffin *Fratercula arctica*	*c.* 10.7km north-east of the proposed development

European Site Name [Code] and its Qualifying interest(s) / Special Conservation Interest(s) (*Priority Annex I Habitats)	Location Relative to the Proposed Development Site
NPWS (2021) *Conservation objectives for Lambay Island SPA [004069].* Generic Version 8.0. Department of Housing, Local Government and Heritage	
Rogerstown Estuary SPA [004015] A043 Greylag Goose *Anser anser* A046 Light-bellied Brent Goose *Branta bernicla hrota* A048 Shelduck *Tadorna tadorna* A056 Shoveler *Anas clypeata* A130 Oystercatcher *Haematopus ostralegus* A137 Ringed Plover *Charadrius hiaticula* A141 Grey Plover *Pluvialis squatarola* A143 Knot *Calidris canutus* A149 Dunlin *Calidris alpina alpina* A156 Black-tailed Godwit *Limosa limosa* A162 Redshank *Tringa totanus* A999 Wetlands NPWS (2013) *Conservation Objectives: Rogerstown Estuary SPA 004015*. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.	*c.* 11.2km north-west of the proposed development
Dalkey Islands SPA [004172] A192 Roseate Tern *Sterna dougallii* A193 Common Tern *Sterna hirundo* A194 Arctic Tern *Sterna paradisaea* NPWS (2021) *Conservation objectives for Dalkey Islands SPA [004172].* Generic Version 8.0. Department of Housing, Local Government and Heritage.	*c.* 12km south of the proposed development
Rockabill SPA [004014] A148 Purple Sandpiper *Calidris maritima* A192 Roseate Tern *Sterna dougallii* A193 Common Tern *Sterna hirundo* A194 Arctic Tern *Sterna paradisaea* NPWS (2013) *Conservation Objectives: Rockabill SPA 004014*. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.	*c.* 19.8km north of the proposed development
Skerries Islands SPA [004122] A017 Cormorant *Phalacrocorax carbo* A018 Shag *Phalacrocorax aristotelis* A046 Light-bellied Brent Goose *Branta bernicla hrota* A148 Purple Sandpiper *Calidris maritima* A169 Turnstone *Arenaria interpres* A184 Herring Gull *Larus argentatus* NPWS (2021) *Conservation objectives for Skerries Islands SPA [004122].* Generic Version 8.0. Department of Housing, Local Government and Heritage.	*c.* 19.9km north of the proposed development

Figure 2 : European sites within a 20km range of the proposed development

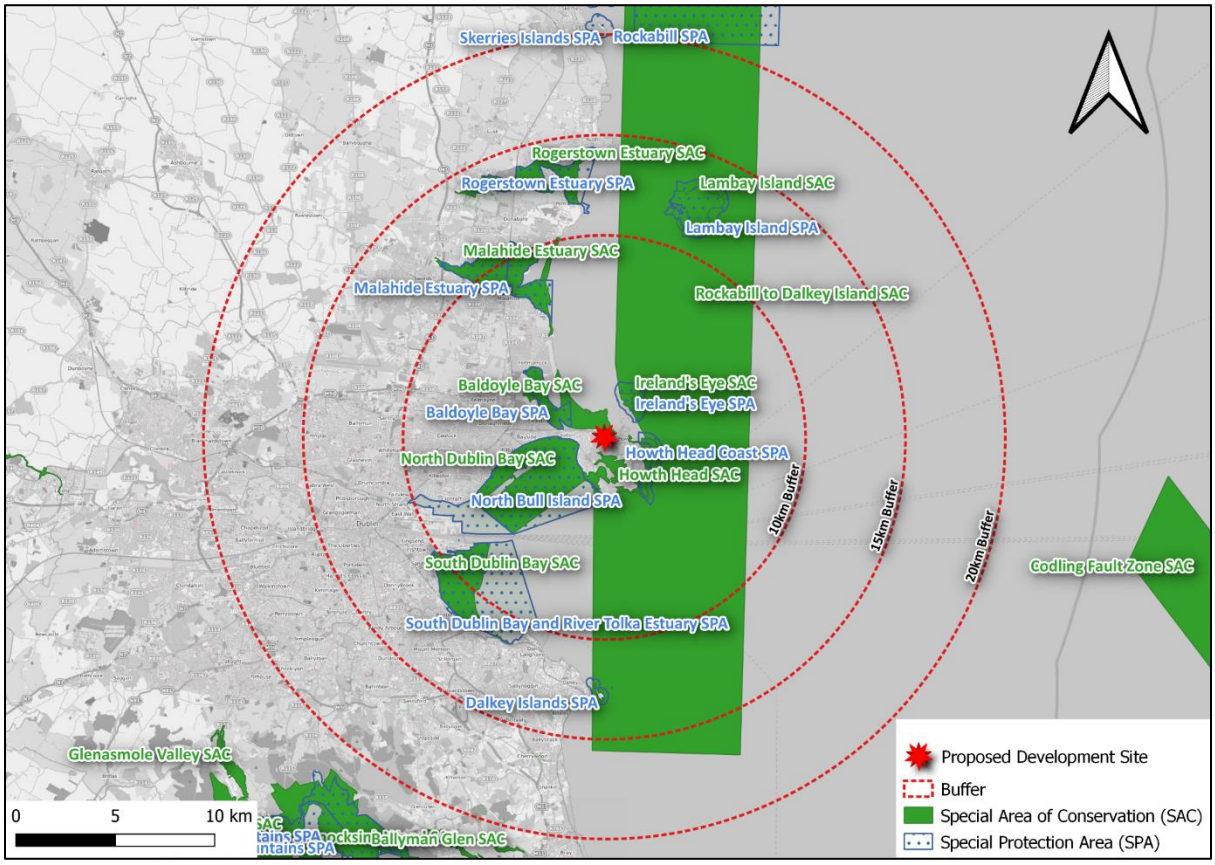
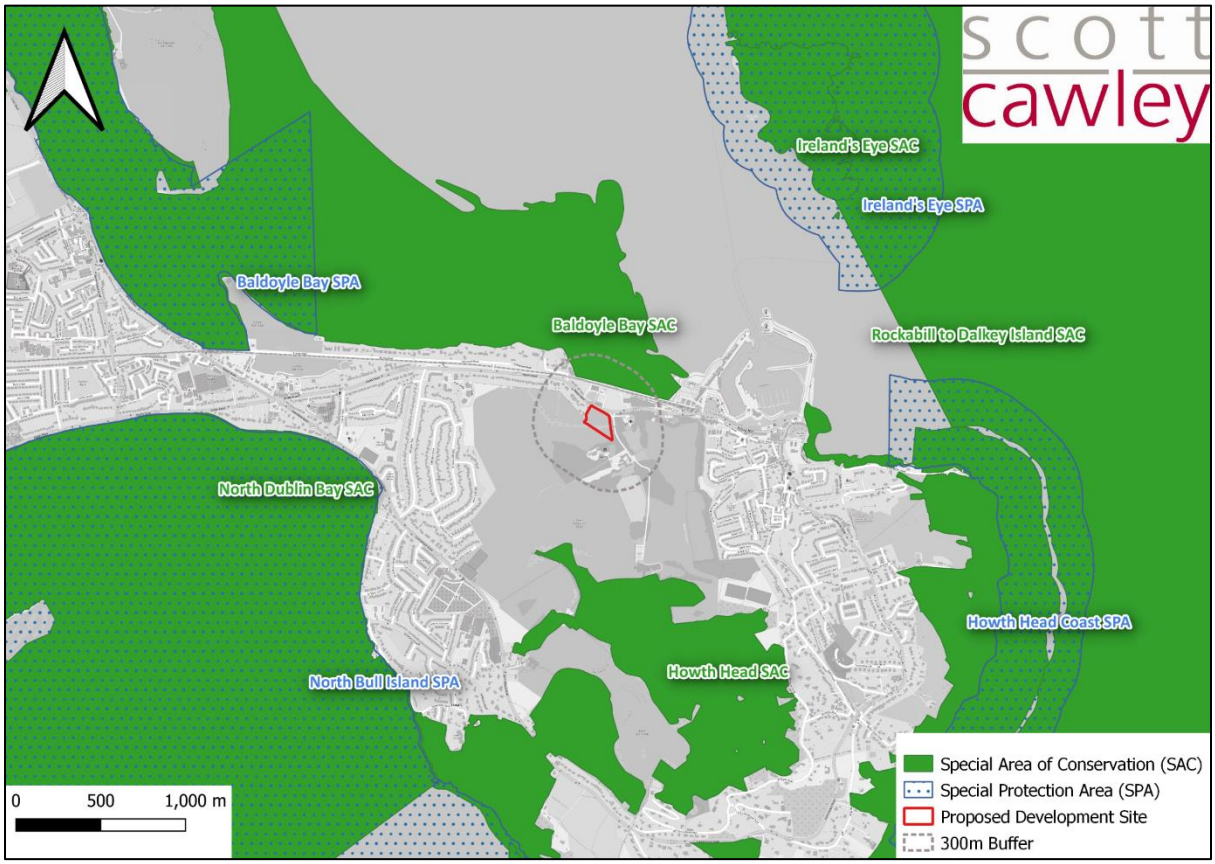


Figure 3: European sites within the vicinity of the proposed development site



5.1.1 Habitats

52 The proposed site comprises of amenity and dry meadow grassland, with boundary hedgerows and treelines and small areas of scrub. Other habitats surrounding the proposed development site include residential properties to the west, Deerpark golf course with amenity grassland and woodland to the south and east, and Howth Road immediately to the north with Claremont Strand *c*. 130m to the north.

53 There are no Annex I habitats present within the proposed development site.

5.1.2 Flora and Fauna Species

54 A National Biodiversity Data Centre (NBDC) database search of a custom polygon approximately 2km around the proposed development site returned records of the following Annex II flora species, Annex I bird species and Annex II/Annex IV fauna species:

- Petalwort *Petalophyllum ralfsii* in 1975
- Common Dolphin *Delphinus delphis* in 2013 (strandings data)
- Common Porpoise *Phocoena phocoena* in 2012 (strandings data)
- Risso's Dolphin *Grampus griseus* in 2015 (strandings data)
- Common Seal *Phoca vituline* in 2018
- Grey Seal *Halichoerus grypus* in 2018
- Brown Long-eared Bat *Plecotus auritus* in 2014
- Lesser Noctule *Nyctalus leisleri* in 2006
- Pipistrelle sp. *Pipistrellus pipistrellus sensu lato* in 2014
- Soprano Pipistrelle *Pipistrellus pygmaeus* in 2014
- Arctic Tern *Sterna paradisaea* in 2014
- Bar-tailed Godwit *Limosa lapponica* in 2011
- Common Tern *Sterna hirundo* in 2014
- Dunlin *Calidris alpina* in 2011
- Great Northern Diver *Gavia immer* in 2011
- Little Egret *Egretta garzetta* in 2014
- Little Gull *Larus minutus* in 2011
- Mediterranean Gull *Larus melanocephalus* in 2011
- Peregrine Falcon *Falco peregrinus* in 2014
- Red-throated Diver *Gavia stellata* in 2011
- Roseate Tern *Sterna dougallii* in 1997
- Sandwich Tern *Sterna sandvicensis* in 2014

55 Harbour porpoise is a QI of Rockabill to Dalkey Islands SAC. Grey seal and harbour seal are a QI of Lambay Island SAC. Roseate tern is an SCI species for South Dublin Bay and River Tolka Estuary SPA, Dalkey Islands SPA and Rockabill SPA.

56 Common pipistrelle bat *Pipistrellus pipistrellus*, soprano pipistrelle bat *Pipistrellus pygmaeus*, Leisler's bat *Nyctalus leisleri*, and brown long-eared bat *Plecotus auratus* were recorded within the proposed development site in July and August 2020, however, these bat species are not listed as a QI of any European site in Ireland. No annex I bird species were recorded within the proposed development site during site

visits. There are no features present within the proposed development site that would provide suitable habitat for otter or marine mammals

57 The NBDC database search returned records of the following non-native invasive species listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) :

- Brazilian Giant-rhubarb *Gunnera manicata*
- Canadian Waterweed *Elodea canadensis*
- Giant hogweed *Heracleum mantegazzianum*
- Hottentot-fig *Carpobrotus edulis*
- Japanese knotweed *Fallopia japonica*
- Rhododendron *Rhododendron ponticum*
- Salmonberry *Rubus spectabilis*
- *Allium triquetrum*

58 There were no records for invasive flora species listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) within the site. No invasive species were identified during the site visits, and therefore there is no risk of spread to European sites.

5.1.2.1 Winter Birds

Peak Flock Counts

59 As birds are mobile, and some wintering goose species can travel up to 20km between roosting and feeding sites[16], it is possible that wintering birds occurring in the vicinity of the proposed development site are associated with SPAs located a significant distance from the proposed development site (see Figure 2). Light-bellied brent goose and other wintering bird species are known to use in-land green-field sites. The existing amenity grassland, within the red line boundary of the proposed for development, represents a suitable in-land feeding site for light-bellied brent goose and other wintering bird species which may forage inland.

60 Winter bird surveys carried out from October 2019 to March 2020 and November 2020 to March 2021 did not record any sightings of brent geese or signs of use of use by geese, such as droppings, within the indicative red line boundary of the proposed development site. However, light-bellied brent geese were frequently recorded within adjacent lands at Deerpark.

61 Winter bird surveys recorded eight SCI species associated with nearby SPAs. Peak counts of SCI species within the indicative red line boundary included 13 oystercatcher *Haematopus ostralegus* and one curlew *Numenius arquata,* using the amenity grassland to the south of the proposed development site, see Figures 4, 5 and 6 below and Appendix IV. No SCI species were recorded using the dry meadows grassland within the proposed development site. In addition, a peak count of 65 light-bellied brent goose *Branta bernicla hrota*, 40 black-headed gull *Chroicocephalus ridibundus*, 128 curlew *Numenius arquata*, 596 herring gull *Larus argentatus*, 35 dunlin *Calidris alpina*, 42 oystercatcher *Haematopus ostralegus* and two redshank *Tringa totanus* were recorded in the surrounding golf course and at Claremont Strand within the 300m buffer, see below in Table 3.

62 Peak counts of SCI species recorded were all significantly lower than 1% of the national population or, for gull species, 1% of the international population. A precautionary approach has been adopted for the assessment in assuming that any SCI listed bird species recorded within the 300m buffer form part of the SCI populations of any SPA sites within a potential foraging/commuting range for each species. Results of

[16] Scottish Natural Heritage (2016) Guidance: Assessing connectivity with Special Protection Areas (SPAs). Version 3

the winter bird surveys show that the proposed development site is not an important in-land or high tide roost site, used by significant numbers of wintering SCI birds. The surrounding areas within the 300m buffer have shown use by numbers of curlew which would equate to >13.6% of the North Bull Island SPA curlew population (in the event that all curlew recorded were from the North Bull Island SPA population). They were recorded in the area *c.*100m west of the proposed development site on three of the eleven survey days in the winter of 2019/2020 and three of the nine survey days in the winter of 2020/2021. The closure of Deer Park golf course during the 2020/2021 winter bird season, due to government public health (Covid-19) restrictions, may have led to increased suitability for the birds as a result of reduced disturbance events by recreational users.

Table 3: Peak counts of SCI bird species recorded during 2019/2020 and 2020/2021 winter bird surveys

Species	Peak count	SPA SCI baseline population	1% National[17]	1% International[18]
Within the proposed development site - amenity grassland (GA2)				
Oystercatcher (*Haematopus ostralegus*)	13	North Bull Island SPA[19] – 1,784 Peak count recorded is <1% of SPA population Malahide Estuary SPA[20]- 1,360 Peak count recorded is <1% of SPA population South Dublin Bay and River Tolka Estuary SPA[21]- 1,263 Peak count recorded is >1% of SPA population Rogerstown Estuary SPA[21]- 1,345 Peak count recorded is <1% of SPA population	690	8,200
Curlew (*Numenius arquata*)	1	North Bull Island SPA – 937 Peak count recorded is <1%	350	7600
Within 300m of the proposed development site				
Brent Goose (Light-bellied) (*Branta bernicla hrota*)	65	North Bull Island SPA – 1,548 Peak count recorded is >4% of SPA population Baldoyle Bay SPA[22]- 726 Peak count recorded is >8% of SPA population Malahide Estuary SPA- 1,104	360	400

[17] Crowe, O., & Holt, C. 2013. Estimates of waterbird numbers wintering in Ireland, 2006/07 – 2010/11. Irish Birds 9, 545-552

[18] Wetlands International. 2012. Waterbird Population Estimates, Fifth Edition. Summary Report Wetlands International, Wageningen The Netherlands (with estimates accessed 22/03/2021, available at http://wpe.wetlands.org/).

[19] NPWS (2014) North Bull Island Special Protection Area & South Dublin Bay and River Tolka Estuary Special Protection Area Conservation Objectives Supporting Document Version 1.

[20] NPWS (2013) Malahide Estuary Special Protection Area Conservation Objectives Supporting Document Version 1

[21] NPWS (2013) Rogerstown Estuary Special Protection Area Conservation Objectives Supporting Document Version 1.

[22] NPWS (2012) Baldoyle Bay Special Protection Area Conservation Objectives Supporting Document Version 1.

Species	Peak count	SPA SCI baseline population	1% National[17]	1% International[18]
		Peak count recorded is >5% of SPA population South Dublin Bay and River Tolka Estuary SPA- 525 Peak count recorded is >12% of SPA population Rogerstown Estuary SPA- 1,069 Peak count recorded is >6% of SPA population Skerries Islands SPA[23] - 242 Peak count recorded is >26% of SPA population		
Black-headed gull (*Larus ridibundus*)	40	North Bull Island SPA - 2,196 Peak count recorded is >1% of SPA population South Dublin Bay and River Tolka Estuary SPA - 3,040 Peak count recorded is >1% of SPA population	-	31,000
Curlew (*Numenius arquata*)	128	North Bull Island SPA – 937 Peak count recorded is >13% of SPA population	350	7,600
Herring Gull (*Larus argentatus*)	596	Ireland's Eye SPA[24]- 530 Peak count recorded exceeds the SPA population Lambay Island SPA[25] – 1806 Peak count recorded is >33% of SPA population Skerries Island SPA - 250 Peak count recorded exceeds the SPA population	-	10,200
Dunlin (*Calidris alpina*)	35	North Bull Island SPA – 4,146 Peak count recorded is <1% of SPA population Malahide Estuary SPA- 1,594 Peak count recorded is >2% of SPA population South Dublin Bay and River Tolka Estuary SPA- 2,753	570	13,300

[23] NPWS (2020) Skerries Islands Special Protection Area Standard Data Form

[24] Goodwillie et al. (1988) A Second Report on Areas of Scientific Interest in County Dublin

[25] NPWS (2020) Lambay Island Special Protection Area Standard Data Form

Species	Peak count	SPA SCI baseline population	1% National[17]	1% International[18]
		Peak count recorded is >1% of SPA population Rogerstown Estuary SPA- 2,745 Peak count recorded is >1% of SPA population		
Oystercatcher (*Haematopus ostralegus*)	42	North Bull Island SPA – 1,784 Peak count recorded is >2% of SPA population Malahide Estuary SPA- 1,360 Peak count recorded is >3% of SPA population South Dublin Bay and River Tolka Estuary SPA- 1,263 Peak count recorded is >3% of SPA population Rogerstown Estuary SPA- 1,345 Peak count recorded is >3% of SPA population	690	8,200
Redshank (*Tringa totanus*)	2	North Bull Island SPA – 1,431 Peak count recorded is <1% of SPA population Malahide Estuary SPA- 581 Peak count recorded is <1% of SPA population South Dublin Bay and River Tolka Estuary SPA- 713 Peak count recorded is <1% of SPA population Rogerstown Estuary SPA- 490 Peak count recorded is <1% of SPA population	300	760

63 The existing amenity grassland to the south of the application area will be reprofiled and reinstated as amenity grassland. This area represents a suitable in-land feeding site for light-bellied brent goose and other wintering bird species known to use in-land sites. Light-bellied brent goose typically move to inland feeding sites to graze when stocks of seagrass *Zostera* in intertidal areas of Dublin Bay become depleted, often using recreational pitches and amenity grassland. Light-bellied brent goose, and other wintering SCI Species, occurring in Dublin Bay are known to use a network of in-land feeding sites for supplementary feeding[26] [27].

[26] Benson, L. (2009). Use of Inland Feeding Sites by Light-bellied Brent Geese in Dublin 2008-2009: A New Conservation Concern? Irish Birds 8: 563-570.

[27] Scott Cawley (2017). Natura Impact Statement: Information for Stage 2 Appropriate Assessment – Proposed Residential Development, St. Paul's College, Sybil Hill, Raheny, Dublin 5. Report produce for Crekav by Scott Cawley. An Bord Pleanála case reference PL29N.302225

64 There were no signs of use of the proposed development site by light-bellied brent goose, i.e. no droppings present on the area of amenity grassland within the proposed development site. Peak flock counts of one curlew *Numenius arquata* and 13 oystercatcher *Haematopus ostralegus* were recorded using the amenity grassland within the proposed development.

65 There were sightings of brent geese, peak count of 65, using the amenity grassland to the west (*c*. 300m to the west) outside of the redline boundary for the proposed development site and *c*. 200m to the north in Claremont strand, during winter bird surveys in winter season 2019-2020 or 2020-2021. Flocks of curlew and oystercatcher were recorded using the amenity grassland within 300m of the proposed development with peak counts of 128 curlew and 42 oystercatcher.

66 Non-SCI species recorded using the proposed development site included buzzard *Buteo buteo,* goldfinch *Carduelis carduelis*, meadow pipit *Anthus pratensis,* mistle thrush *Turdus viscivorus,* song thrush *Turdus philomelos,* greenfinch *Chloris chloris,* robin *Erithacus rubecula,* blackbird *Turdus merula,* dunnock *Prunella modularis,* wren *troglodytes troglodytes,* blue tit *Cyanistes caeruleus,* long tailed tit *Aegithalos caudatus,* great tit *Parus major,* coal tit *Periparus ater,* hooded crow *Corvus cornix,* magpie *Pica pica* and rook *Corvus frugilegus.*

Figure 4: Brent geese, dunlin,, oystercatcher and redshank recorded on and within 300m of the proposed development site

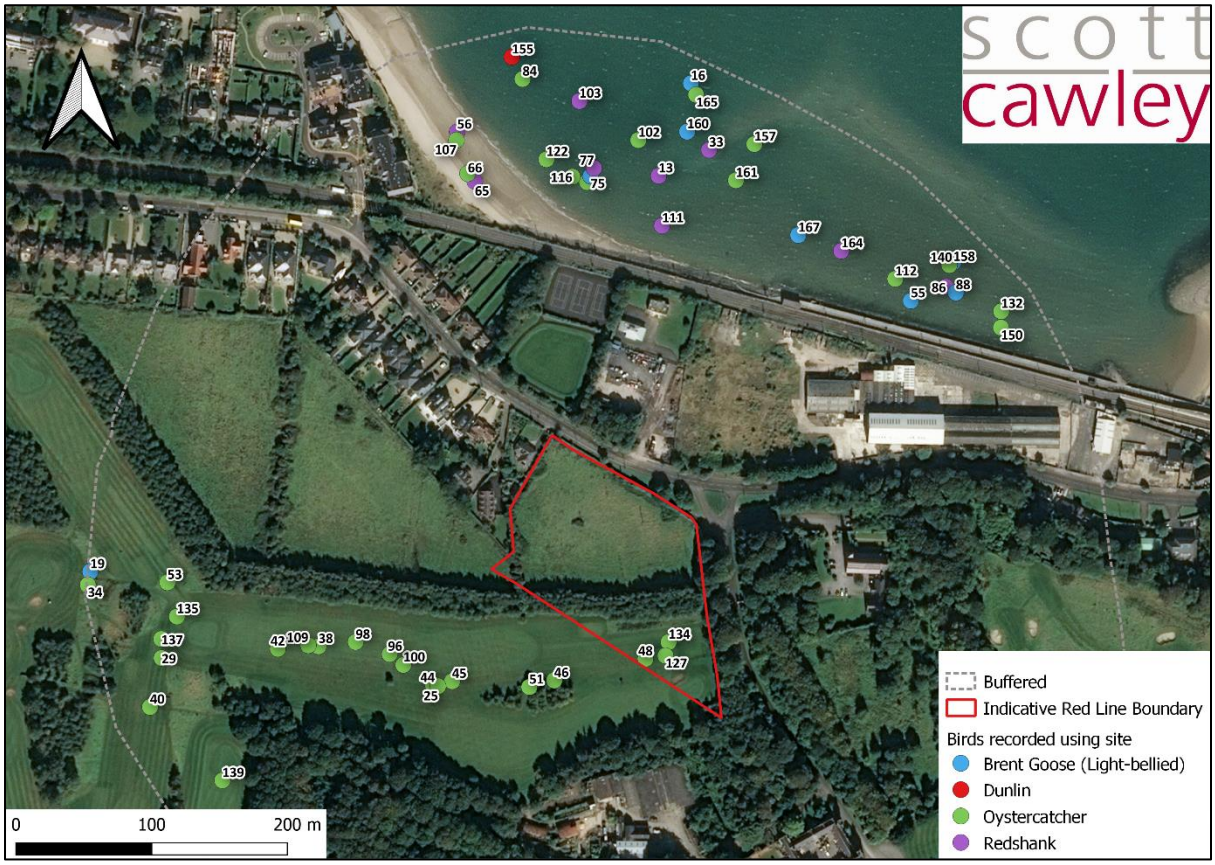


Figure 5: Black-headed gulls and herring gulls on and within 300m of the proposed development site

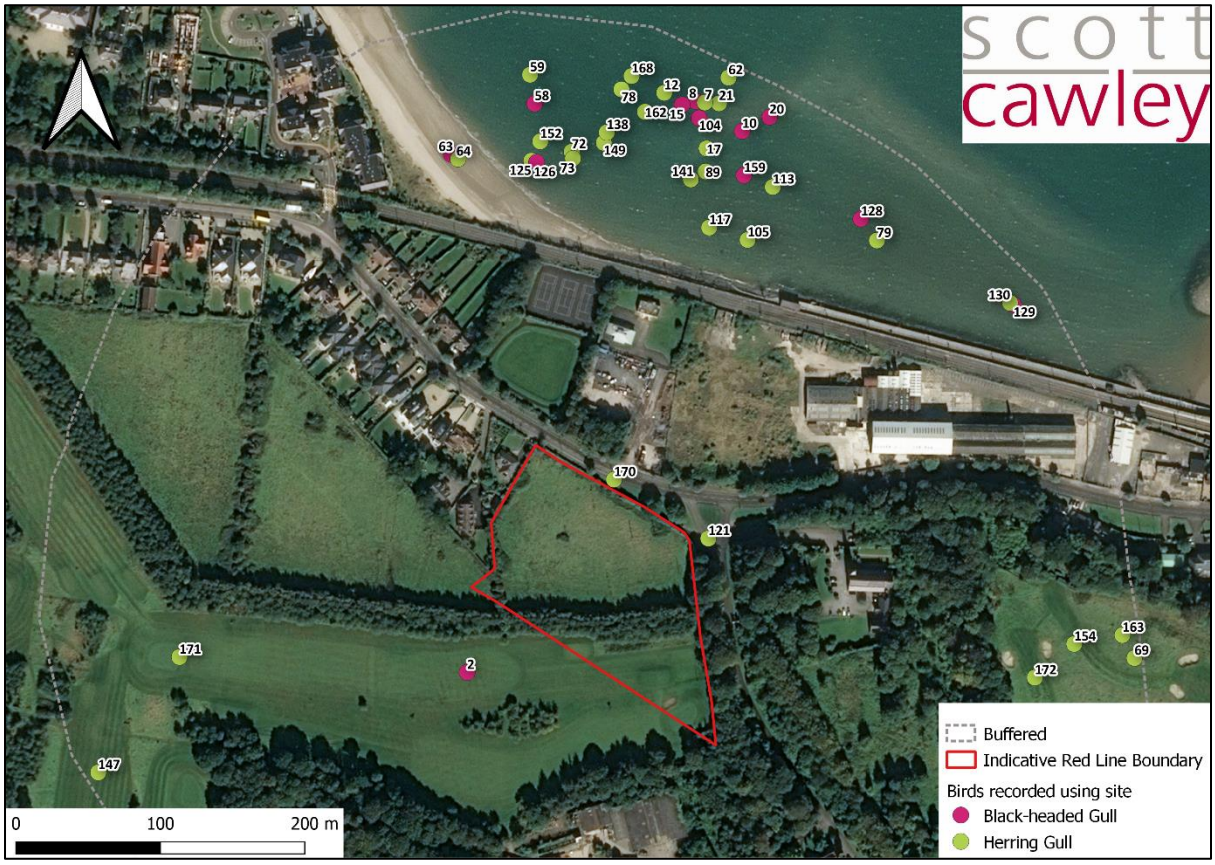


Figure 6: Curlew recorded on and within 300m of the proposed development site

Table 4: Peak counts of brent geese as recorded by Evercam's cameras in Winter 2019/2020

Species	Peak count	SPA SCI baseline population	1% National[28]	1% International[29]
Camera 1: Proposed development site - amenity grassland (GA2)				
Brent Goose (Light-bellied) (*Branta bernicla hrota*)	0	North Bull Island SPA – 1,548 Baldoyle Bay SPA- 726 Malahide Estuary SPA- 1,104 South Dublin Bay and River Tolka Estuary SPA- 525 Rogerstown Estuary SPA- 1,069 Skerries Islands SPA- 242	360	400
Cameras 2, 3 and 4: Within 300m of the proposed development site				
Brent Goose (Light-bellied) (*Branta bernicla hrota*)	100	North Bull Island SPA – 1,548 Peak count recorded is >6% of SPA population Baldoyle Bay SPA- 726 Peak count recorded is >13% of SPA population Malahide Estuary SPA- 1,104 Peak count recorded is >9% of SPA population South Dublin Bay and River Tolka Estuary SPA- 525 Peak count recorded is >19% of SPA population Rogerstown Estuary SPA- 1,069 Peak count recorded is >9% of SPA population Skerries Islands SPA- 242 Peak count recorded is >41% of SPA population	360	400
Cameras 5, 6, 7 and 8: Outside the 300m buffer of the proposed development site				
Brent Goose (Light-bellied) (*Branta bernicla hrota*)	180	North Bull Island SPA – 1,548 Peak count recorded is >11% of SPA population Baldoyle Bay SPA- 726 Peak count recorded is >24% of SPA population Malahide Estuary SPA- 1,104	360	400

[28] Crowe, O., & Holt, C. 2013. Estimates of waterbird numbers wintering in Ireland, 2006/07 – 2010/11. Irish Birds 9, 545-552

[29] Wetlands International. 2012. Waterbird Population Estimates, Fifth Edition. Summary Report Wetlands International, Wageningen The Netherlands (with estimates accessed 22/03/2021, available at http://wpe.wetlands.org/).

Species	Peak count	SPA SCI baseline population	1% National[28]	1% International[29]
		Peak count recorded is >16% of SPA population South Dublin Bay and River Tolka Estuary SPA- 525 Peak count recorded is >34% of SPA population Rogerstown Estuary SPA- 1,069 Peak count recorded is >16% of SPA population Skerries Islands SPA- 242 Peak count recorded is >74% of SPA population		

Flight Activity Surveys

67 Flight activity surveys were undertaken in November 2020 – March 2021. Results provide information on birds that use the airspace over the proposed development site and those that are potentially at risk of collision with the proposed building structures. A total of 6 SCI species were recorded flying over the proposed development site during flight activity surveys. Proposed building height was a maximum of 19.57m, therefore, any flights recorded as 20m or below were considered to be at risk of collision. A summary of flight activity survey results for SCI species is discussed in the below paragraphs. Full flight activity details are presented in Appendix III. Flight "passes" are the sum of the peak counts of each species recorded throughout the winter 2020/2021 season, as each pass is a possibility of collision.

Gulls

68 In total two black-headed gull passes (recorded on one occasion, on one of the nine survey days, with a peak flock count of two) and 582 herring gull passes (recorded on 174 occasions, on six of the nine survey days, with a peak flock count of 56) were recorded flying over the proposed development site. Of the 174 herring gull flights recorded, approximately 32.7% occurred at heights above the proposed building and the pair of black-headed gulls recorded were at collision risk height.

Light-bellied brent geese

69 One single light-bellied brent goose was recorded across the nine survey days flying over the proposed development site. The light-bellied brent goose flew over the proposed development site above the collision risk height.

Waders and Cormorants

70 In total 70 curlew passes (recorded on 11 occasions, on five of the nine survey days, with a peak flock count of 30), 19 oystercatcher (recorded on 6 occasions, on two of the nine survey days, with a peak flock count of 12) and one single cormorant were recorded flying over the proposed development site out of the nine survey days. All oystercatcher and cormorant flights (i.e. 100% of flights attributed to these species) were recorded at the collision risk height. Of the curlew flights, 88.9% were recorded at heights which represented a potential collision risk with the proposed building.

71 See Figures 7 and 8 below for a summary of flight patterns and Appendix III for full details.

Figure 7: Light-bellied brent goose, black-headed gull, cormorant, curlew and oystercatcher flight activity recorded over the proposed development site

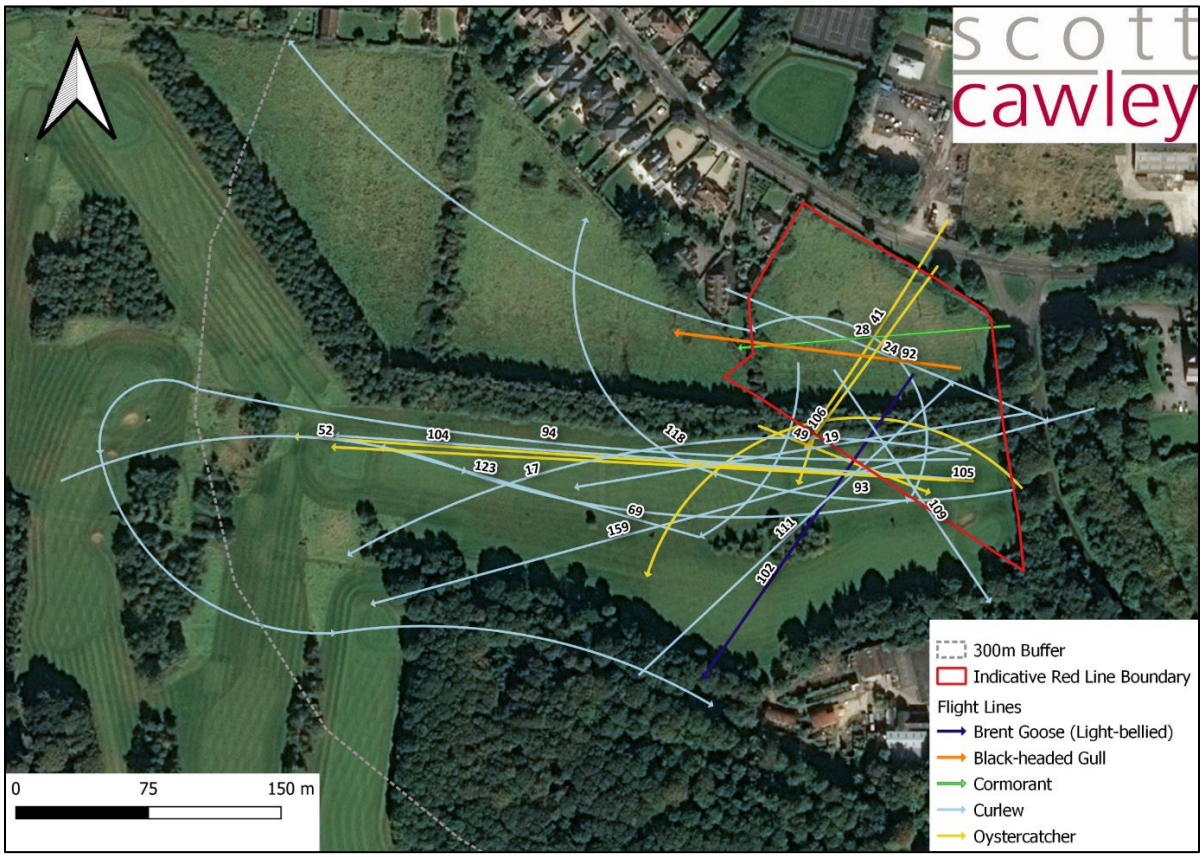
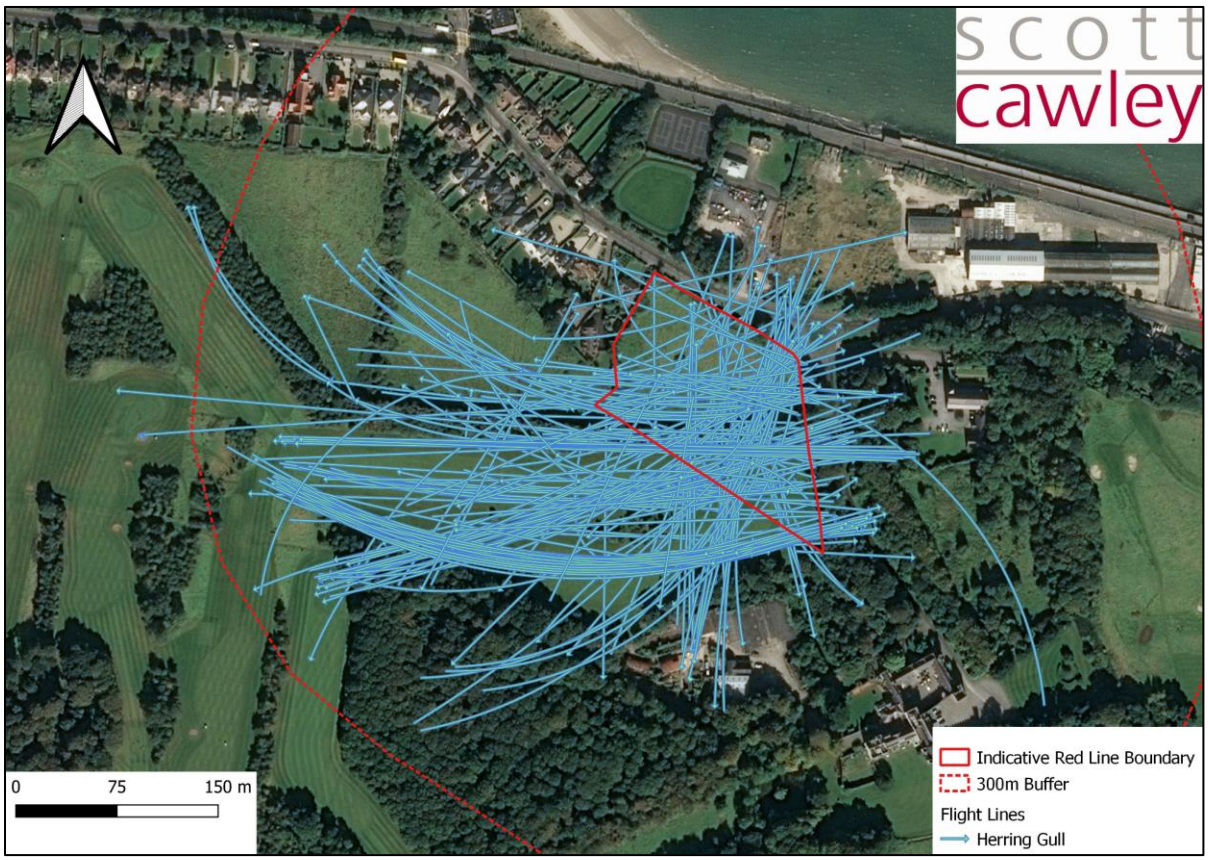


Figure 8: Herring gull flight activity recorded over the proposed development site



5.1.2.1 *Breeding Birds*

72 No SCI species for SPAs within 20km of the proposed development site were recorded singing, foraging, or roosting within the proposed development site. SCI bird species were observed flying over the proposed development site, including species associated with marine habitats in Dublin Bay to the southwest, and in the Irish Sea to the north. Six herring gull *Larus argentatus* flights were recorded, with a peak of two individuals and was the most frequent marine species that flew over the site. Two flights consisting of individual cormorants *Phalacrocorax carbo* were recorded flying over the site in June 2020.

5.1.3 *Hydrology*

73 There are no watercourses within the proposed site or within close proximity of the site. The nearest watercourse, according to the EPA envision mapping, is the Bloody Stream (WFD river waterbody IE_EA_09H230880; segment code 09_2176), which is located 50m east of the proposed development site, and outfalls into the Irish Sea Dublin (HA 09) at Claremont Strand.

74 The proposed site is within the Liffey and Dublin Bay catchment, the Mayne_SC_010 sub-catchment and the "Howth_010" sub-basin. The Irish Sea Dublin (HA 09) coastal waters are the receiving hydrological environment. The status of Irish Sea Dublin (HA 09) coastal waters are "good", and it has been classified as "not at risk" of failing to meet its objectives under the Water Framework Directive (WFD). The coastal waters of the Irish Sea Dublin (HA 09) are currently classified as "unpolluted".

5.1.4 *Hydrogeology*

75 The Groundwater Body (GWB) underlying the proposed development site is the "Dublin" GWB and is described as "Poorly productive bedrock". The proposed development site is located above a "locally important aquifer - Bedrock which is Moderately Productive only in Local Zones". Geological Survey of Ireland (GSI) data indicates that the site is located in an area of "*High"* vulnerability with regards to the ease with which groundwater may be contaminated by human activities. According to the EPA envision mapping the GWB underlying the proposed development site is currently classified as having "*Good"* Water Framework Directive status.

76 The general groundwater flow direction for the Dublin GWB is towards the coast and also towards the River Liffey and Dublin City[30].

5.1.5 *Soils & Geology*

77 Ground investigation works were carried out by Ground Investigation Ireland in December 2019. Results classified soils underlying the proposed development site as non-hazardous[31].

6 Potential Impacts, Zone of Influence and Identifying European Sites at Risk of Effects

78 Based on the baseline and receiving ecological environment and the nature and characteristics of the proposed development the following potential impacts have been identified:

- Habitat loss and fragmentation
- Habitat degradation as a result of hydrological impacts
- Habitat degradation as a result of hydrogeological impacts

[30] GIS (2021) Summary of initial Characterisation of Dublin GWB. Available from:

https://secure.dccae.gov.ie/GSI_DOWNLOAD/Groundwater/Reports/GWB/DublinGWB.pdf [Accessed: 22/03/2021]

[31] Ground Investigations Ireland (2020) *Howth Road –Waste Classification Report and Subsoil Assessment – Appended to Construction Waste Management Plan (Byrne Environmental)*

- Habitat degradation as a result of introducing/spreading non-native invasive species
- Disturbance and displacement impacts
- Habitat degradation as a result of increased recreational pressures
- Bird mortality as a result of collision risk Impacts

6.1 Habitat loss and fragmentation

79 The proposed development does not overlap with the boundary of any European site. Therefore, there are no European sites at risk of direct habitat loss impacts.

80 As the proposed development does not traverse any European sites there is no potential for habitat fragmentation to occur.

81 The proposed development site does not support significant populations of any fauna species linked with the QI/SCI populations of any European site(s). According to the relevant site specific conservation objectives[32] for SCI species recorded within the proposed development site are: (a) to achieve a long term population trend of stable or increasing; and; (b) ensure no significant decrease in range, timing and intensity of use of areas by SCI species, other than that occurring from natural patterns of variation.

82 The only SCI bird species recorded within the proposed development site, during surveys undertaken, were curlew and oystercatcher.

83 A precautionary approach has been adopted for the assessment in assuming that any SCI listed bird species recorded within the 300m buffer form part of the SCI populations of any SPA sites within a potential foraging/commuting range for each species. Less than 1% of the North Bull Island SPA populations of curlew were recorded within the proposed development site, which indicates that the site is not used by significant numbers of this SCI bird species. In addition, curlew were only recorded within the proposed development site on one occasion (out of a total of 20 surveys undertaken). This indicates that SCI birds only use the proposed development site on a very infrequent basis and in very low numbers. Considering the above, it can be concluded that the proposed development will not affect the conservation objectives of North Bull Island SPA as a result of habitat loss impacts affecting use of areas outside of the SPA by its SCI species.

84 Less than 1% of the North Bull Island SPA populations of oystercatcher, less than 1% of the Malahide Estuary SPA populations of oystercatcher, *c.* 1% of the South Dublin Bay and River Tolka Estuary SPA populations of oystercatcher and less than 1 % of the Rogerstown Estuary SPA populations of oystercatcher were recorded within the proposed development site, which indicates that the site is not used by significant numbers of these SCI bird species. In addition, SCI bird species were only recorded within the proposed development site on three occasions (out of a total of 20 surveys undertaken). This indicates that SCI birds only use the proposed development site on an infrequent basis. Considering the above, it can be concluded that the proposed development will not affect the conservation objectives of the SCI species recorded within the proposed development site which are associated with North Bull Island SPA Malahide Estuary SPA South Dublin Bay and River Tolka Estuary SPA Rogerstown Estuary SPA.

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[32] NPWS (2015) *Conservation Objectives: North Bull Island SPA 004006.* Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2013) *Conservation Objectives: Malahide Estuary SPA 004025.* Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

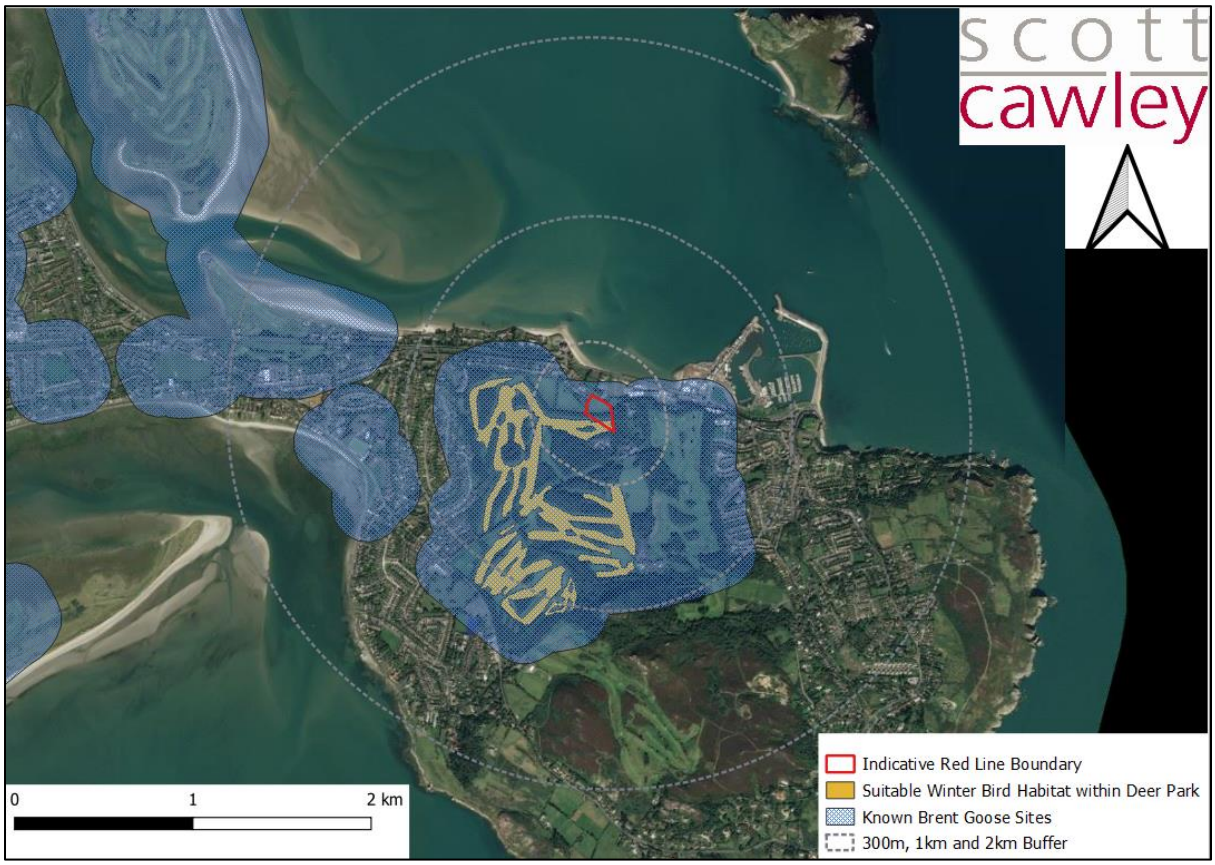
NPWS (2015) *Conservation Objectives: South Dublin Bay and River Tolka Estuary SPA 004024*. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2013) *Conservation Objectives: Rogerstown Estuary SPA 004015*. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

85 Additionally, suitable inland feeding habitat exists for these SCI species in the surrounding environment, including within Deer Park golfclub and the surrounding area for these species, see Figure 9.

86 As the proposed development will not result in habitat loss or habitat fragmentation within any European site or any supporting ex-situ site associated with SPA populations of SCI birds, there is no potential for any in combination effects to occur in that regard.

Figure 9: Suitable inland feeding sites for SCI species within 2km of the proposed development



6.2 Habitat degradation as a result of hydrological impacts

87 Surface water run-off and discharges from the proposed development will drain to the existing local surface water drainage network. Foul waters from the proposed development will be discharged to Ringsend WWTP for treatment, via the existing foul water drainage network, prior to discharge into the Liffey Estuary/Dublin Bay. Therefore, the Zone of Influence (ZoI) of potential effects on water quality from the proposed development could extend to Dublin Bay.

Surface Water

88 Surface water run-off and discharges from the proposed development will enter the downstream receiving environment via the existing surface water drainage network.

89 A pollution event, of a sufficient magnitude, for example, surface water runoff during construction, caused by accidental oil or fuel spillages or leaks or from heavy rainfall which could carry silt/sediment or other pollutants into the surface water drainage network which in turn could transfer them to downstream European sites, has the potential to affect the receiving aquatic and marine environments (either alone or in combination with other pressures on water quality) to an extent that undermines the conservation objectives of the European sites downstream in Baldoyle Bay - Baldoyle Bay SAC and Baldoyle Bay SPA.

90 Considering the relatively low volume of any surface water run-off or discharge events from the proposed development site relative to the receiving surface water and marine environment in Baldoyle Bay, and the level of mixing, dilution and dispersion of any surface water run-off/discharges from the proposed

development site in the receiving watercourses, Baldoyle Bay and the Irish Sea, the proposed development will not have any measurable effects on water quality on European sites beyond Baldoyle Bay.

Foul Water

91 Foul water, comprising sewage and industrial effluent (and some surface water run-off), from the Dublin area has historically been, and will continue to be, treated at Ringsend WWTP prior to discharge to Dublin Bay. The most recent information from Irish Water indicates that the plant is operating above its capacity of 1.64 million P.E. (Irish Water, 2017), with a current operational loading of c.2.2 million P.E. Ringsend WWTP operates under a discharge licence from the EPA (D0034-01) and must comply with the licence conditions.

92 Despite the capacity issues associated with the Ringsend WWTP, the Liffey Estuary Lower and Dublin Bay are currently classified by the EPA as being of "Unpolluted" water quality status[33]. The Tolka Estuary is currently classified by the EPA as being "Potentially Eutrophic". The pollutant content of future foul water discharges to Dublin Bay is considered likely to decrease in the long-term for the following reasons:

- An Bord Pleanála granted planning permission for an upgrade to the Ringsend WWTP in April 2019[34], which will increase capacity at the plant, and
- There is a commitment in the National Development Plan 2018-2027[35] to invest in and progress the Greater Dublin Drainage Project which will involve the provision of a new regional wastewater treatment plant at a site in the northern part of the Greater Dublin Area and the provision of a new Orbital Drainage Sewer linking the new plant to the existing regional sewer network, which will enable future connections for identified areas of development within the catchment area. The provision of the Greater Dublin Drainage Project will augment the waste water treatment capacity currently provided by Ringsend WWTP across the Greater Dublin Area.

93 It is also an objective of the Greater Dublin Strategic Drainage Study, and all development plans within the catchment of Ringsend WWTP, to include Sustainable Urban Drainage Systems (SUDS) within new developments. Whilst the SUDS features associated with the proposed development are references in the application documentation, absolutely no reliance has been placed on these measures for the purposes of conducting AA Screening (even though those measures are not directed to the protection of any European site which might potentially be affected by the proposed development).The relevant development plans also have protective policies/objectives in place to protect water quality in the receiving freshwater and marine environments, and to implement the Water Framework Directive in achieving good water quality status for Dublin Bay.

94 Considering the above, particularly the current '*Good*' WFD status of Dublin Bay and that foul water discharges from the proposed development would equate to a very small proportion of the overall volumes sent to Ringsend WWTP for treatment, it is concluded that the proposed development will not have any perceptible impact on water quality of Dublin Bay. Although the water quality of Dublin Bay is '*Good*', the current WFD status of the Tolka Estuary, a key feeding area for wintering birds and which Dublin Bay coastal water body is connected to, is assessed as '*Moderate*' according to the EPA. Whilst acknowledging the potential for a near shore-effect on water quality, the effect of this development is immeasurable, and thus the cumulative effect of the proposed development discharge with all other discharges, present and future, is a matter for control under Irish Water's operating permit. The approach

[33] Transitional and Coastal Surface Water Quality data (2010-2012) accessed from the EPA Envision Mapviewer www.gis.epa.ie/Envision (accessed May 2019)

[34] An Bord Pleanála Case Reference PL29S.301798 – *10-year permission for development of the Ringsend wastewater treatment plant upgrade project including a regional bio solids storage facility*, Available online at www.pleanala.ie/casenum/301798.htm.

[35] Government of Ireland (2018) *Project Ireland 2040, National Development Plan 2018-2027*.

taken is entirely consistent with that which withstood High Court challenge in the *Dublin Cycling Campaign CLG v. An Bord Pleanála* [2020] IEHC 587..

95 Therefore, there is no possibility of the proposed development undermining the conservation objectives of any of the qualifying interests or special conservation interests of the European sites in, or associated with, Dublin Bay as a result of foul water discharges.

In Combination

96 There is potential for "*in-combination*" effects on water quality in Dublin Bay from any other projects carried out within the functional areas of the *Dublin City Development Plan 2016-2022* (Dublin City Council, 2016), the *Dún Laoghaire-Rathdown County Development Plan 2016-2022* (Dún Laoghaire-Rathdown County Council, 2016), the *Fingal Development Plan 2017-2023* (Fingal County Council, 2017), *South Dublin County Council Development Plan 2016-2022* (South Dublin County Council, 2016), or any other land use plans which could influence conditions in Dublin Bay via rivers and other surface water features.

97 The Eastern & Midland Regional Assembly, Regional Spatial & Economic Strategy 2019-2031[36] (Eastern & Midland Regional Assembly, 2019) includes a range of policy objectives relevant to the protection of European sites and the protection of water quality in Dublin Bay, to which the relevant planning authorities must have regard to in the preparation and adoption of their development plans (included in Appendix II).

98 The planning authority for the proposed development is Fingal County Council. Plans and developments within Fingal County Council must comply with the following policy objectives of the Fingal Development Plan 2017-2023 (Fingal County Council, 2017) relevant to the protection of European sites and the protection of water quality in Dublin Bay:

> **Objective NH10** - Ensure that the Council takes full account of the requirements of the Habitats and Birds Directives, as they apply both within and without European Sites in the performance of its functions.
>
> **Objective NH11 -** Ensure that the Council, in the performance of its functions, takes full account of the objectives and management practices proposed in any management or related plans for European Sites in and adjacent to Fingal published by the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.
>
> **Objective NH15 -** Strictly protect areas designated or proposed to be designated as Natura 2000 sites (i.e. Special Areas of Conservation (SACs) and Special Protection Areas (SPAs); also known as European sites) including any areas that may be proposed for designation or designated during the period of this Plan.
>
> **Objective SW04 -** Require the use of sustainable drainage systems (SuDS) to minimise and limit the extent of hard surfacing and paving and require the use of sustainable drainage techniques where appropriate, for new development or for extensions to existing developments, in order to reduce the potential impact of existing and predicted flooding risks.
>
> **Objective WQ01 -** Strive to achieve "good status" in all waterbodies in compliance with the Water Framework Directive, the Eastern River Basin District Management Plan 2009-2015 and the associated Programme of Measures (first cycle) and to cooperate with the development and implementation of the second cycle national River Basin Management Plan 2017-2021.
>
> **Objective WQ04 -** Protect existing riverine wetland and coastal habitats and where possible create new habitats to maintain naturally functioning ecosystems whilst ensuring they do not impact negatively on the conservation objectives of any European Sites.
>
> **Objective WT01 -** Liaise with and work in conjunction with Irish Water during the lifetime of the plan for the provision, extension and upgrading of waste water collection and treatment

[36] Eastern & Midland Regional Assembly (2019) *Regional Spatial & Economic Strategy 2019-2031*

systems in all towns and villages of the County to serve existing populations and facilitate sustainable development of the County, in accordance with the requirements of the Settlement Strategy and associated Core Strategy.

Objective WT02 - Liaise with Irish Water to ensure the provision of wastewater treatment systems in order to ensure compliance with existing licences, EU Water Framework Directive, River Basin Management Plans, the Urban Waste Water Directive and the EU Habitats Directive.

99 Plans and developments within the other local authority areas which could influence conditions in Dublin Bay via rivers and other surface water features, also must comply with the policies and objectives relevant to the protection of European sites and water quality. These include the *Dún Laoghaire-Rathdown County Development Plan 2016-2022*, the *Dublin City Development Plan 2016-2022*, the *South Dublin County Council Development Plan 2016-2022*, the *Kildare County Development Plan 2017-2023* (Kildare County Council, 2017) and the *Wicklow County Development Plan 2016-2022* (Wicklow County Council, 2016). The relevant policies and objectives in those plans for the protection of European sites and water quality are included in Appendix II.

100 In conclusion, there are a number of projects referred to above which will upgrade the capacity of Ringsend WWTP which will, over time, address the capacity issues at Ringsend WWTP referred to above.

101 As noted under the surface water and foul water sections above, Dublin Bay is currently unpolluted and the proposed development will not result in any measurable effect on water quality in Dublin Bay. There are also protective policies and objectives in place at a strategic planning level to protect water quality in Dublin Bay.

102 Therefore, and having regard to the policies and objectives referred to under the relevant development plans, it is concluded that the possibility of any other plans or projects acting in combination with the proposed development to give rise to significant effects on any European site in, or associated with, Dublin Bay can be excluded.

6.3 Habitat degradation as a result of hydrogeological impacts

103 The proposed development lies within the Dublin Groundwater Body (Dublin GWB). The only European site within the Dublin GWB that is designated for groundwater dependant habitats and/or species is the Rye Water Valley/Carton SAC. All of the qualifying interests of the Rye Water Valley/Carton SAC, the priority Annex I habitat Petrifying springs and the two whorl snail species, are dependent upon the existing condition and functioning of the groundwater regime.

104 The proposed development will require excavations of a depth of 4.5m to 7m, and ground investigations performed on site found ground water at a depth of 2.8m[37]. However, based on information published by Geological Survey Ireland (GSI) on the Dublin GWB[38], "The general groundwater flow direction in this aquifer is towards the coast and also towards the River Liffey and Dublin City" and the Rye Water Valley/Carton SAC is located *c.*28km inland from the proposed development. Therefore, there is no possibility of the proposed development undermining the conservation objectives of any of the qualifying interests of the Rye Water Valley/Carton SAC, either alone or in combination with any other plans or projects, as a result of hydrogeological effects.

6.4 Habitat degradation as a result of introducing/spreading non-native invasive species

105 No non-native invasive species listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) were noted within the proposed development site during the site surveys carried out in June 2020. Therefore, there is no risk of non-native invasive species being

[37] Ground Investigations Ireland (2020) *Howth Road –Waste Classification Report and Subsoil Assessment*

[38] https://secure.dccae.gov.ie/GSI_DOWNLOAD/Groundwater/Reports/GWB/DublinGWB.pdf

accidentally spread or introduced to habitats within European sites as a result of the proposed development.

6.5 Disturbance and displacement impacts

106 Construction-related disturbance and displacement of fauna species could potentially occur within the vicinity of the proposed development. For mammal species such as otter, disturbance effects would not be expected to extend beyond 150m[39]. For birds, disturbance effects would not be expected to extend beyond a distance of *c.*300m, as noise levels associated with general construction activities would attenuate to close to background levels at that distance[40]. Calculated noise levels for the nearest sensitive receptor for winter birds with all plant operating simultaneously were low. Predicted noise levels during construction at Claremont Strand, which is *c.* 143m north of the proposed development site, was calculated to be 36dB(A). In the area of Deer Park golf course, *c*. 189m west of the proposed development site, which recorded flocks of *c.* 100 wintering birds, noise levels were calculated to be 33dB(A). As such, disturbance effects for general construction activities across the majority of the proposed development site would not be expected to extend beyond a distance of *c.* 140m, as predicted noise levels associated with general construction activities would attenuate to close to background levels at that distance and beyond. Figure 9 above shows suitable inland feeding habitat for winter birds within 2km of the proposed development site, with the 300m disturbance buffer shown. These suitable sites include six known inland feeding sites[41] [42] such as Deer Park Golf Course area (excluding the proposed development site and the 300m disturbance buffer), Sutton Golf Course, Santa Sabina School, Santa Sabina Manor, Howth Celtic Football pitch and Carrickbrack Road.

107 There is the potential for Special Conservation Interest (SCI) species from surrounding SPAs to be disturbed and displaced during the construction and operational phases of the proposed development. The proposed development site is within 300m of Claremont Strand, which is a section of coastal habitat comprising the Annex I habitat type 1140 Mudflats and sandflats not covered by seawater at low tide [1140] associated with Baldoyle Bay SAC. This section of intertidal habitat is a suitable to be used as an *ex-situ* feeding and roosting[43] site for SCI species of surrounding SPAs within 20km. Winter 2019/2020 and winter 2020/2021 surveys showed use of the site by the following species listed as SCI species of surrounding SPAs within 20km:, oystercatcher, herring gull, black-headed gull, dunlin, curlew and light-

[39] This is consistent with Transport Infrastructure Ireland (TII) guidance (Guidelines for the Treatment of Otters prior to the Construction of National Road Schemes and Guidelines for the Treatment of Badgers prior to the Construction of National Road Schemes) documents. This is a precautionary distance, and likely to be moderated by the screening effect provided by surrounding vegetation and buildings, with the actual ZoI of construction related disturbance likely to be much less in reality.

[40] The disturbance zone of influence for waterbirds is based on the relationship between the noise levels generated by general construction traffic/works (BS 5228:2009 Code of Practice for Noise and Vibration Control on Construction and Open Sites – Part 1 Noise) and the proximity of those noise levels to birds – as assessed in Cutts, N. Phelps, A. & Burdon, D. (2009) *Construction and Waterfowl: Defining Sensitivity, Response, Impacts and Guidance*, and Wright, M., Goodman, P & Cameron, T. (2010) Exploring Behavioural Responses of Shorebirds to Impulsive Noise. *Wildfowl* (2010) 60: 150–167. At 300m, noise levels are below 60dB or, in most cases, are approaching the 50dB threshold below which no disturbance or displacement effects would arise.

[41] Benson, L. (2009). Use of Inland Feeding Sites by Light-bellied Brent Geese in Dublin 2008-2009: A New Conservation Concern? Irish Birds 8: 563-570.

[42] Scott Cawley (2017). Natura Impact Statement: Information for Stage 2 Appropriate Assessment – Proposed Residential Development, St. Paul's College, Sybil Hill, Raheny, Dublin 5. Report produce for Crekav by Scott Cawley. An Bord Pleanála case reference PL29N.302225

[43] Baldoyle Bay Special Protection Area. Conservation Objectives Supporting Document NPWS (2012). Available from:

https://www.npws.ie/sites/default/files/publications/pdf/004016_Baldoyle%20Bay%20SPA%20Supporting%20Doc_V1.pdf [Accessed: 22/03/2021]

bellied brent geese. Construction related noise could, as least short-term[44] during the construction phase (18 - 24 months), disturb birds foraging within 300m of the proposed development site.

108 As the proposed development has the potential to result in the disturbance/displacement of the species of special conservation interest of surrounding SPA sites, there is also the potential for in combination effects to occur in association with the following existing pressures and activities/plans/projects:

- PL06F.306102 (Atlas GP Ltd) – Strategic Housing Development application for 512 apartments, 2 shops, a crèche, a café and a restaurant on lands at the former Techrete manufacturing facility, former Beshoff's car showroom, and former Howth Garden Centre, Claremont, Howth Road, Howth, County Dublin.
- F20A/0294 (Marine Engineering Division) – Construction of a workshop with Offices and Canteen facilities and a gross internal area of 374sqm. The proposed development is an amendment to a previous granted application, Planning Ref; F18A/0633.
- F20A/0412 (Downey) - Baltray, 92, Howth Road, Howth, Co. Dublin. Permission to replace entrance lobby with a two storey pitched roof extension; kitchen to rear to be extended by 1.3.m; hips to be replaced with gables and east gable to extend to roadside boundary; east and central chimney stacks to be removed and west stack to be increased in height; front and rear monopitch dormers to be replaced; roof over sunroom to be replaced with monopitch roof extending back to rear pitch with 3 roof lights and, timber leaf pattern added to all gables.
- F18A/0267 (Dept. of Agriculture, Food & Marine) – Construction of two number ground level industrial buildings (5 number units each) and associated site works at Claremont, West Pier, Howth, Co. Dublin.
- F18A/0074 (Minister for Agriculture, Food & Marine) – The provision of 130m long quay wall; associated deck area, road access, hard standing; localised dredging to facilitate works, dredging to -4m Chart Datum along the front of new quay wall to provide berthing depth and land reclamation of approximate 0.30 Ha on the east side of middle pier at Middle Pier, Howth Fishery Harbour Centre, Howth, Co Dublin.
- Proposed land reclamation at Howth Harbour – currently at public consultation phase. It is proposed to reclaim of almost five hectares of land at the West Pier in Howth using material dredged from the harbour's seabed. A new 100-metre wide infill area on the outside of the West Pier will create a new coastal linear park including slipway access to the water for small craft.

6.6 Habitat degradation as a result of increased recreational pressures

109 Increased human presence resulting in an increased visitor pressure to European sites in the vicinity of the proposed development has the potential to cause habitat degradation during the operation of the proposed development.

110 There is the potential for QI habitats of SACs within the vicinity of the proposed development site to be degraded during the operational phase of the proposed development. The proposed development site is within *c.* 170m of Baldoyle Bay SAC and *c.* 675m of Howth Head SAC. Howth Head SAC contains walking routes such as the Howth Cliff Path Loop, which are used for recreational purposes by both locals and visitors. The site synopsis[45] for Howth Head SAC lists the recreational use of Howth Head, such as walking, as a cause of erosion within the SAC. There will be a potential increase of *c*. 425 of inhabitants in the vicinity

[44] "Short-Term effects: effects lasting one to seven years" Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2017)

[45] NPWS (2013) Site Synopsis: Howth Head SAC [000202]. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.

of Howth Head as a result of the proposed development. Further erosion of Howth Head SAC, and its associated habitats, as a result of this population increase, cannot be excluded.

6.7 Bird mortality as a result of Collision Risk Impacts

111 Considering the proposed development's coastal location, adjacent to Baldoyle Bay, there is potential for the proposed development to present a collision risk to mobile SCI species which may fly over the proposed development lands to reach inland foraging sites.

112 From the survey results, and as expected, gulls traversed the footprint of the proposed development more than other bird species recorded, as they regularly use inland sites. In Dublin, gulls navigate an urban environment with built structures daily. To put some context on their avoidance capabilities, in a different setting and for use in collision risk modelling for onshore wind turbines, an avoidance rate of 99.5% is applied for large gull species and an avoidance rate of 99.2% is applied for small gull species (Furness, 2019)[46], which essentially means that 99.5% and 99.2% of gull flights, respectively, will avoid collision with a moving turbine. For light-bellied brent geese the avoidance rate applied is 99.8% (SNH, 2018)[47]. The risk of collision is even less with a static, clearly detectable building. The proposed buildings consist of glazing, broken up with intermittent stone and brick cladding with louvre panelling and metal balustrade over sections of external glazing. It is, therefore, considered that the building will not pose a collision risk to gulls or light-bellied brent geese.

113 As for waders and cormorants, flight activity for both groups of species was generally low with birds generally moving between Baldoyle Bay and the greater Deer Park area. The presence of the proposed development may alter their flight patterns slightly to avoid the proposed building structure.

114 Birds are mobile species and can travel up to 20km from designated sites.[48] As such collision risk impacts resulting in bird mortality occurring at a sufficient magnitude, has the potential to affect birds that occur in the receiving environment (either alone or in combination with other disturbance and displacement pressures) to an extent that undermines the conservation objectives of European sites including Baldoyle Bay SPA, North Bull Island SPA, Ireland's Eye SPA, Malahide Estuary SPA, South Dublin Bay and River Tolka Estuary SPA, Lambay Island SPA, Rogerstown Estuary SPA, and Skerries Islands SPA.

6.8 Summary

115 The potential impacts associated with the proposed development have the potential to affect the receiving environment and, as a result, the conservation objectives supporting the qualifying interest/special conservation interests of ten European sites: Baldoyle Bay SAC, Howth Head SAC, Baldoyle Bay SPA, North Bull Island SPA, Ireland's Eye SPA, Malahide Estuary SPA, South Dublin Bay and River Tolka Estuary SPA, Lambay Island SPA, Rogerstown Estuary SPA, and Skerries Islands SPA.

116 The potential impacts of the proposed development on the receiving environment, their zone of influence, and the European sites at risk of likely significant effects are summarised in Table 5 below.

[46] Furness, R.W. (2019) Avoidance rates of herring gull, great black-backed gull and common gull for use in the assessment of terrestrial wind farms in Scotland. Scottish Natural Heritage Research Report No. 1019.

[47] Scottish Natural Heritage (SNH). (2018) Avoidance Rates for the onshore SNH Wind Farm Collision Risk Model. September 2018 v2.

[48] Scottish Natural Heritage (2016) Guidance: Assessing connectivity with Special Protection Areas (SPAs). Version 3

Table 5 Summary of the potential impacts of the proposed development on the receiving environment, their potential zone of influence, and the European sites within the zone of influence

Potential Direct, Indirect In Combination Effects and the ZoI of the Potential Effects	Are there any European sites within the ZoI of the proposed development?
Habitat loss Habitat loss will be confined to the lands within the proposed development boundary.	No There are no European sites within the proposed development boundary. Additionally, the proposed development site is not providing a supporting role to the QIs of any SAC sites or the SCI populations of any SPA sites.
Habitat degradation as a result of hydrological impacts Habitats and species downstream of the proposed development site and the associated surface water drainage discharge points, and downstream of offsite wastewater treatment plants.	Yes There are European sites at risk of hydrological effects associated with the proposed development. Baldoyle Bay SAC and Baldoyle Bay SPA
Habitat degradation as a result of hydrogeological impacts Groundwater-dependant habitats, and the species those habitats support, in the local area that lie downgradient of the proposed development site.	No There are no European sites at risk of hydrogeological effects associated with the proposed development
Habitat degradation as a result of introducing/spreading non-native invasive species Habitat areas within, adjacent to, and potentially downstream of the proposed development site.	No There are no non-native invasive species present on the proposed development site and, therefore, no risk associated with the proposed development to any European sites from the spread/introduction of non-native invasive species
Disturbance and displacement impacts Potentially up to several hundred metres from the proposed development boundary, dependent upon the predicted levels of noise, vibration and visual disturbance associated with the proposed development, taking into account the sensitivity of the qualifying interest species to disturbance effects	Yes There are species listed as SCIs for surrounding SPA sites within the potential zone of influence of disturbance effects associated with the construction or operation of the proposed development Baldoyle Bay SPA, North Bull Island SPA, Ireland's Eye SPA, Malahide Estuary SPA, South Dublin Bay and River Tolka Estuary SPA, Lambay Island SPA, Rogerstown Estuary SPA, and Skerries Islands SPA.
Habitat degradation as a result of increased recreational pressures European sites within the vicinity of the proposed development.	Yes There is a possibility of increased footfall and visitor numbers within European sites as a result of the proposed development. Howth Head SAC
Habitat degradation as a result of contaminated land Habitat areas within, adjacent to, and potentially downstream of the proposed development site.	No Site investigations classified soils on the proposed development site as non-hazardous. Therefore, there is no potential impact on European Sites.
Bird mortality as a result of collision risk impact	Yes

Potential for mortality of mobile SCI species as result of collision with tall structures during construction and operation.	Baldoyle Bay SPA, North Bull Island SPA, Ireland's Eye SPA, Malahide Estuary SPA, South Dublin Bay and River Tolka Estuary SPA, Lambay Island SPA, Rogerstown Estuary SPA, and Skerries Islands SPA.

7 Assessment of Effects on European Sites

117 This section of the NIS assesses the direct and indirect impacts of the proposed development on the European sites which fall within its zone of influence. For each of these European sites, the assessment below sets out the relevant ecological baseline information, the analysis of the potential impacts, the qualifying interests/special conservation interests at risk of these potential impacts, in view of the sites' conservation objectives, and the mitigation measures (if required) to avoid/reduce the effects of any potential impacts.

118 The assessment of the proposed development in combination with any other plans or projects on European sites is presented in Section 8.

7.1 Baldoyle Bay SAC [000199]

7.1.1 Ecological Baseline Description for Baldoyle Bay SAC

119 According to the Natura 2000 Standard Data Form[49],this SAC comprises a relatively small estuarine and bay system in North County Dublin. It receives the flow of the Mayne and Sluice rivers, both of which drain an agricultural/suburban catchment. Habitats present in this SAC include sand dunes, muds and muddy sands with a high organic content, brackish marshes, salt marshes and sandy beaches. This SAC has been designated for a range of coastal habitats. It has a good diversity of sediment types and supports *Zostera* sp., two Red Data Book species and is of importance to wintering waterfowl.

7.1.2 Qualifying Interests and Conservation Objectives of Baldoyle Bay SAC

120 The qualifying interests of Baldoyle Bay SAC, and the overall conservation objective, are listed below in Table 6.

Table 6 Qualifying Interests and Conservation Objectives of Baldoyle Bay SAC

Qualifying Interest(s)	Conservation Objective(s)
1140 Mudflats and sandflats not covered by seawater at low tide 1310 Salicornia and other annuals colonizing mud and sand 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) 1410 Mediterranean salt meadows (*Juncetalia maritimi*) NPWS (2012) Conservation Objectives: Baldoyle Bay SAC 000199. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht	To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected

121 In conjunction with considering the generic conservation objective for this SAC "To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected", the site specific conservation objectives document for Baldoyle Bay SAC also informed this assessment.

122 The site specific conservation objectives document sets out the attributes, measures and targets that define the favourable conservation condition of the qualifying interests within the European site. Affecting the conservation condition of the qualifying interests is deemed to constitute an adverse effect on the integrity of a European site. The specific attributes and targets used to define the conservation objectives of the qualifying interests of Baldoyle Bay SAC are presented in Section 7.1.3, Table 7 **Error! Reference s ource not found.**.

7.1.3 Examination and Analysis of Potential Direct and Indirect Impacts

123 The direct and/or indirect impacts by which the proposed development could (in the absence of mitigation measures) potentially affect the conservation objective attributes and targets supporting the conservation condition of the qualifying interests of Baldoyle Bay SAC, are:

- Habitat degradation as a result of surface water hydrological impacts

7.1.3.1 Habitat degradation as a result of surface water hydrological impacts

124 The release of contaminated surface water runoff and/or an accidental spillage or pollution event into any surface water features during construction, or operation, has the potential to affect water quality in the

[49] NPWS (2018) *Natura 2000 – Standard Data Form. Baldoyle Bay SAC.* National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht

receiving aquatic environment. Such a pollution event may include: the release of sediment into receiving waters and the subsequent increase in mobilised suspended solids; and, the accidental spillage and/or leaks of containments (*e.g.* fuels, oils, paints etc.) into receiving waters. The associated effects of a reduction of surface water quality could potentially extend for a considerable distance downstream of the location of the accidental pollution event or the discharge. The proposed development is hydrologically connected to Baldoyle Bay via the surface water drainage network and overland flow, as the site slopes towards the coast. Therefore, there is potential for the proposed development to result in significant effects which could have implications for the conservation objectives of Baldoyle Bay SAC as a result of hydrological impacts.

7.1.3.2 Summary

125 Table 7 below presents a summary of the potential impacts of the proposed development on the qualifying interests of Baldoyle Bay SAC, and how these impacts relate to affecting the site's conservation objectives.

Table 7 Potential Impacts/Effects on the Conservation Objectives of Baldoyle Bay SAC

Conservation Objectives Attribute/Measure/Target	**Potential Impacts Requiring Mitigation?**	**Are mitigation measures required?**	**Residual Impacts?**
Baldoyle Bay SAC			
Mudflats and sandflats not covered by water at low tide [1140] To maintain the favourable conservation condition of the habitat in the SAC, which is defined as follows:			
Habitat area / Hectares / The permanent habitat area is stable or increasing, subject to natural processes	Yes An accidental pollution event during construction or operation could affect surface water downstream in Baldoyle Bay. An accidental pollution event of a sufficient magnitude, either alone or cumulatively with other pollution sources, could affect the quality of the intertidal habitats and the fauna communities they support.	Yes The mitigation measures described in section 7.1.4 to protect water quality in the receiving environment will ensure that surface water quality in Baldoyle Bay is protected during construction and operation of the proposed development.	No
Community distribution / Hectares / Conserve the following community types in a natural condition: Fine sand dominated by *Angulus tenuis* community complex; and Estuarine sandy mud with *Pygospio elegans* and *Tubificoides benedii* community complex			
***Salicornia* and other annuals colonising mud and sand [1310]** To restore the favourable conservation condition of the habitat in the SAC, which is defined as follows:			
Habitat area / Hectares / Area stable or increasing, subject to natural processes, including erosion and succession	Yes An accidental pollution event during construction or operation could affect surface water downstream in Baldoyle Bay. An accidental pollution event of a sufficient magnitude, either along or cumulatively with other pollution sources, could potentially affect the quality (vegetation structure and	Yes The mitigation measures described in section 7.1.4 to protect water quality in the receiving environment will ensure that surface water quality in Baldoyle Bay is protected during construction and operation	No
Habitat distribution / Occurrence / No decline, or change in habitat distribution, subject to natural processes			
Physical structure: sediment supply / Presence/ absence of physical barriers Maintain natural circulation of sediments and organic matter, without any physical obstructions			
Physical structure: creeks and pans / Occurrence / Maintain creek and pan structure, subject to natural processes, including erosion and succession			

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
Physical structure: flooding regime / Hectares flooded; frequency / Maintain natural tidal regime	composition) and area/distribution of intertidal/coastal habitats.	of the proposed development.	
Vegetation structure: zonation / Occurrence / Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession			
Vegetation structure: vegetation height / Centimetres / Maintain structural variation within sward			
Vegetation structure: vegetation cover / Percentage cover at a representative number of monitoring stops / Maintain more than 90% of area outside creeks vegetated			
Vegetation composition: typical species and subcommunities / Percentage cover / Maintain the presence of species-poor communities with typical species listed in the Saltmarsh Monitoring Project (McCorry and Ryle, 2009)			
Vegetation structure: negative indicator species - *Spartina anglica* / Hectares / No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%			
Atlantic salt meadows *(Glauco-Puccinellietalia maritimae* [1330] To maintain the favourable conservation condition of the habitat in the SAC, which is defined as follows:			
Habitat area / Hectares / Area stable or increasing, subject to natural processes, including erosion and succession	Yes An accidental pollution event during construction or operation could affect surface water downstream in Baldoyle Bay. An accidental pollution event of a sufficient magnitude, either along or cumulatively with other pollution sources, could potentially affect the	Yes The mitigation measures described in section 7.1.4 to protect water quality in the receiving environment will ensure that surface water quality in Baldoyle Bay is protected during	No
Habitat distribution / Occurrence / No decline, or change in habitat distribution, subject to natural processes			
Physical structure: sediment supplyPresence/ absence of physical barriers / Maintain natural circulation of sediments and organic matter, without any physical obstructions			

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
Physical structure: creeks and pans / Occurrence / Maintain/restore creek and pan structure to develop, subject to natural processes, including erosion and succession	quality (vegetation structure and composition) and area/distribution of intertidal/coastal habitats.	construction and operation of the proposed development.	
Physical structure: flooding regime / Hectares flooded; frequency / Maintain natural tidal regime			
Vegetation structure: zonation / Occurrence / Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession			
Vegetation structure: vegetation height / Centimetres / Maintain structural variation within sward			
Vegetation structure: vegetation cover / Percentage cover at a representative sample of monitoring stops/ Maintain more than 90% of area outside creeks vegetated			
Vegetation composition: typical species and sub-communities / Percentage cover at a representative sample of monitoring stops / Maintain range of sub- communities with typical species listed in the Saltmarsh Monitoring Project (McCorry and Ryle, 2009)			
Vegetation structure: negative indicator species - *Spartina anglica* / Hectares / No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%			
Mediterranean salt meadows (*Juncetalia maritimi*) [1410] To maintain the favourable conservation condition of the habitat in the SAC, which is defined as follows:			
Habitat area / Hectares / Area stable or increasing, subject to natural processes, including erosion and succession	Yes An accidental pollution event during construction or operation could affect surface water downstream in Baldoyle	Yes The mitigation measures described in section 7.1.4 to protect water quality in the	No
Habitat distribution / Occurrence / No decline, or change in habitat distribution, subject to natural processes			

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
Physical structure: sediment supply / Presence/ absence of physical barriers / Maintain natural circulation of sediments and organic matter, without any physical obstructions	Bay. An accidental pollution event of a sufficient magnitude, either along or cumulatively with other pollution sources, could potentially affect the quality (vegetation structure and composition) and area/distribution of intertidal/coastal habitats.	receiving environment will ensure that surface water quality in Baldoyle Bay is protected during construction and operation of the proposed development.	
Physical structure: creeks and pans / Occurrence / Maintain creek and pan structure, subject to natural processes, including erosion and succession			
Physical structure: flooding regime / Hectares flooded; frequency / Maintain natural tidal regime			
Vegetation structure: zonation / Occurrence / Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession			
Vegetation structure: vegetation height / Centimetres / Maintain structural variation within sward			
Vegetation structure: vegetation cover / Percentage cover at a representative sample of monitoring stops / Maintain more than 90% of area outside creeks vegetated			
Vegetation composition: typical species/ Percentage cover/ Maintain range of sub- communities with typical species listed in the Saltmarsh Monitoring Project (McCorry and Ryle, 2009)			
Vegetation structure: negative indicator species - *Spartina anglica* / Hectares / No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%			

7.1.4 Mitigation Measures

126 This section presents the mitigation measures that will be implemented during construction and operation to avoid or reduce the potential impacts of the proposed development on Baldoyle Bay SAC. All of the mitigation measures will be implemented in full. They are in accordance with best practice, and tried and tested, effective control measures to protect the receiving environment.

127 A site-specific Construction Environmental Management Plan (CEMP) is included with the applicant's planning documentation submitted to An Bord Pleanála. The Principal Contractor and all construction contractors are required to comply with the CEMP.

128 These measures have been developed in consideration of the following standard best international practice including but not limited to:

- Construction Industry Research and Information Association (CIRIA) (2005) *Environmental Good Practice on Site (C692)*
- CIRIA, (2001) *Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors (C532)*
- CIRIA, (2000) *Environmental Handbook for Building and Civil Engineering Projects (C512)*
- CIRIA, (2007) *The SUDS Manual (C697)*
- CIRIA C648: *Control of water pollution from linear construction projects: Technical guidance*
- CIRIA (2006) *Control of water pollution from linear construction projects: Site guide (C648)*
- IFI (2016) *Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters*
- *UK Pollution Prevention Guidelines (PPG)* UK Environment Agency, 2004
- BPGCS005, *Oil Storage Guidelines*

Measures to Protect Surface Water Quality during Construction

129 The construction contractor will be required to implement the following specific mitigation measures as a condition if granted by An Bord Pleanála all of which will be incorporated into the CEMP, for release of hydrocarbons, polluting chemicals, sediment/silt and contaminated waters control:

- Specific measures to prevent the release of sediment over baseline conditions in the downstream receiving water environment, during the construction work. These measures include, but are not limited to, the use of silt fences, silt curtains, settlement lagoons and filter materials.
- Provision of exclusion zones and barriers (e.g. silt fences) between earthworks, stockpiles and temporary surfaces to prevent sediment washing into the existing drainage systems and hence the downstream receiving water environment.
- Provision of temporary construction surface drainage and sediment control measures to be in place before earthworks commence.
- Weather conditions will be taken into account when planning construction activities to minimise risk of run-off from the site.
- Prevailing weather and environmental conditions will be taken into account prior to the pouring of cementitious materials for the works adjacent to any surface water drainage features, or drainage features connected to same. Pumped concrete will be monitored to ensure no accidental discharge. Mixer washings and excess concrete will not be discharged to existing surface water drainage systems. Concrete washout areas will be located remote from any surface water drainage features, to avoid accidental discharge to watercourses. Washing out of any concrete trucks on site will be avoided.

- Any fuels or chemicals (including hydrocarbons or any polluting chemicals) will be stored in a designated, secure bunded area(s) to prevent any seepage of potential pollutants into the local surface water network. These designated areas will be clearly sign-posted and all personnel on site will be made aware of their locations and associated risks.
- All mobile fuel bowsers shall carry a spill kit and operatives must have spill response training. All fuel containing equipment such as portable generators shall be placed on drip trays. All fuels and chemicals required to be stored on-site will be clearly marked. Care and attention will be taken during refuelling and maintenance operations. Particular attention will be paid to gradient and ground conditions, which could increase risk of discharge to waters.
- A register of all hazardous substances, which will either be used on site or expected to be present (in the form of soil and/or groundwater contamination) will be established and maintained. This register will be available at all times and shall include as a minimum:
    - Valid Safety Data Sheets;
    - Health & Safety, Environmental controls to be implemented when storing, handling, using and in the event of spillage of materials;
    - Emergency response procedures/precautions for each material; and,
    - The Personal Protective Equipment (PPE) required when using the material.
- Implementation of response measures to potential pollution incidents.
- Robust and appropriate Spill Response Plan and Environmental Emergency Plan will be prepared prior to works commencing and they will be communicated, resourced and implemented for the duration of the works. Emergency procedures/precautions and spillage kits will be available and construction staff will be trained and experienced in emergency procedures in the event of accidental fuel spillages.
- All trucks will have a built-on tarpaulin that will cover excavated material as it is being hauled off-site and wheel wash/wheel cleaning facilities will be provided at all site egress points.
- If groundwater is encountered during the proposed works and temporary pumping at a very localised location is required:
    - An appropriate dewatering system and groundwater management system specific to the site conditions will be designed and maintained. These will include measures to minimise any surface water inflow into the excavation, where possible, and the prolonged exposure of groundwater to the atmosphere will be avoided.
    - Qualitative and quantitative monitoring will be adopted to ensure that the water is of sufficient quality to discharge. The use of silt traps will be adopted if the monitoring indicates the requirement for same with no silt or contaminated water permitted to discharge to the receiving water environment.
- Water supplies shall be recycled for use in the wheel wash/wheel cleaning facilities. All waters shall be drained through appropriate filter material prior to discharge from the construction sites.
- The removal of any made ground material, which may be contaminated, from the construction site and transportation to an appropriate licenced facility shall be carried out in accordance with the Waste Management Act, best practice and guidelines for same.
- A discovery procedure for contaminated material will be prepared and adopted by the appointed contractor prior to excavation works commencing on site. These documents will detail how potentially contaminated material will be dealt with during the excavation phase.
- Implementation of measures to minimise waste and ensure correct handling, storage and disposal of waste (most notably wet concrete, pile arisings and asphalt).

- All of the above measures implemented on site will be monitored throughout the duration of construction to ensure that they are working effectively, to implement maintenance measures if required/applicable and to address any potential issues that may arise.

Measures to Protect Surface Water Quality during Operation

130 Sustainable Urban Drainage Systems (SuDS) are to be implemented as part of the design of the proposed development. These measures are to remove any potential for contaminated/polluted surface water to drain via the new surface water sewer network proposed as part of the development. SuDS proposed for the site include:

- Green Roofs – General: - Green roofs are areas of living vegetation, installed on the top of buildings. They provide water quality, water quantity, amenity and provide biodiversity benefits. Green roofs also intercept rainfall at source reducing the reliance on attenuation storage structures.
- Green Roof – Extensive: Extensive roofs have low substrate depths and therefore low loadings on the building structure, they are lightweight and have a low cost to maintain. These systems cover the entire roof area with hardy, slow growing, drought resistance, low maintenance plants and vegetation, such as sedums. The planting usually matures slowly, with the long-term biodiverse benefits being the sought-after results. These roofs are typically only accessed for maintenance and are usually comprised of between 20mm – 150mm overall total depth. It is proposed to cover the apartment block roofs with extensive green roofs. The apartment block roofs take up a considerable portion of the site area and therefore by utilising these for green roofs, there will be interception and treatment storage provided at source. The proposed system will be a sedum roof over a drainage tray, which will intercept water.
- Permeable Paving: Permeable paving provides a surface suitable for pedestrian and/or vehicular traffic, while also allowing rainwater to infiltrate through the surface and into the underlying structural layers. Permeable paving systems are an effective way of managing surface water runoff close to its source. The pathways throughout the site will be of a permeable paving build up. The paving within the podium slab area will incorporate a drainage board which also contributes to the interception storage within the site.
- Rain Gardens: A rain garden is a bioretention shallow depression designed to collect, store, filter and treat surface water runoff. The rainwater downpipes for the three blocks will be directed to the adjacent rain gardens. The system will incorporate a drainage board to provide a degree of additional interception storage, and outlets below connected to the surface water drainage system.
- Bioretention Systems & Tree Pits: Bioretention systems are shallow landscaped depressions that can reduce the runoff rates and volumes of surface water. They treat pollution using engineered soils and vegetation. They are very effective in delivering interception and treatment storage. By including tree pits, the effectiveness of the overall system in meeting the requirements of water quality, water quantity, amenity and biodiversity is significantly improved. Trees provide benefits to the SuDS measures by:
- Transpiration – Water evaporates through the stomata on the leaf as a result of photosynthesis.
- Interception – Leaves, branches and trunk surfaces intercept and absorb rainfall reducing the amount of water that reaches the ground.
- Infiltration – Root growth increases the soil infiltration capacity and rate, ultimately reducing run-off volumes.
- Phytoremediation – When drawing up water, trees also take up trace amounts of harmful chemicals. These chemicals can be transformed into less harmful substances within the tree.

- Bioretention tree-pits will be used within the landscape podium areas between the blocks and to the north of the site near the existing boundary wall.
- Attenuation Tanks: Attenuation tanks are used to create below-ground void space for the temporary storage of surface water before infiltration, controlled release, or use. Attenuation tanks can be constructed using geocellular crates, which offer flexibility in size, shape and constructability meaning that they can be tailored to suit specific site characteristics. It is proposed to provide an attenuation tank within the site. This will be designed for the 1 in 100 year storm + 20% climate change, and will form the last part of the SuDS management train. A Hydrobrake will be fitted downstream the tank in order to restrict the flow to Qbar for the catchment area.

7.1.5 Residual Impacts

131 The proposed development poses no risk of affecting the conservation objectives, or the favourable conservation condition, of the qualifying interest habitats of Baldoyle Bay SAC, and there are therefore, no residual direct or indirect impacts associated with the proposed development that could adversely affect the integrity of Baldoyle Bay SAC.

7.1.6 Conclusion of Assessment for Baldoyle Bay SAC

132 Following an examination, analysis and evaluation in light of best scientific knowledge, of all relevant information in respect of the qualifying interests of Baldoyle Bay SAC, the potential impacts, and whether or not the predicted impacts would affect the conservation objectives that support the conservation condition of the qualifying interests, it has been concluded that the proposed development does not pose a risk of adversely affecting (either directly or indirectly) the integrity of Baldoyle Bay SAC.

7.2 Howth Head SAC [000202]

7.2.1 Ecological Baseline Description for Howth Head SAC

133 According to the Site Synopsis for Howth Head SAC[50], this SAC is a rocky headland situated on the northern side of Dublin Bay. This SAC has been designated for the Annex I habitats: [1230] Vegetated Sea Cliffs and [4030] Dry Heath. The flora within this SAC is very diverse, there are records of several Red data book species and species of very restricted Irish distribution. The dry heath and sea cliff vegetation is extensive and well developed. Major threats to the site include walking, horseriding and non-motorised vehicles, burning vegetation, mining and quarrying

7.2.2 Qualifying Interests and Conservation Objectives of Howth Head SAC

134 The qualifying interests of Howth Head SAC, and the overall conservation objective, are listed below in Table 8.

Table 8 Qualifying Interests and Conservation Objectives of Howth Head SAC

Qualifying Interest(s)	Conservation Objective(s)
1230 Vegetated sea cliffs of the Atlantic and Baltic coasts 4030 European dry heaths NPWS (2016) *Conservation Objectives: Howth Head SAC 000202.* Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.	To maintain or restore the favourable conservation condition of the Annex I habitats for which the SAC has been selected

135 In conjunction with considering the generic conservation objective for this SAC "To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected", the site specific conservation objectives document for Howth Head SAC also informed this assessment.

136 The site specific conservation objectives document sets out the attributes, measures and targets that define the favourable conservation condition of the qualifying interests within the European site. Affecting the conservation condition of the qualifying interests is deemed to constitute an adverse effect on the integrity of a European site. The specific attributes and targets used to define the conservation objectives of the qualifying interests of Howth Head SAC are presented in Section 7.2.3, Table 9.

7.2.3 Examination and Analysis of Potential Direct and Indirect Impacts

137 The direct and/or indirect impacts by which the proposed development could (in the absence of mitigation measures) potentially affect the conservation objective attributes and targets supporting the conservation condition of the qualifying interests of Howth Head SAC, are:

- Habitat degradation as a result of increased recreational pressures

138 Increased human presence resulting in an increased visitor pressure to European sites in the vicinity of the proposed development has the potential to cause habitat degradation during the operation of the proposed development.

139 There is the potential for QI habitats of SACs within the vicinity of the proposed development site to be degraded during the operational phase of the proposed development as a result of increased visitor pressure. The proposed development site is within *c.* 170m of Baldoyle Bay SAC and *c.* 675m of Howth Head SAC. Howth Head SAC contains walking routes such as the Howth Cliff Path Loop, which are used for

[50] NPWS (2013) *Site Synopsis. Howth Head SAC [000202].* National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

recreational purposes by both locals and visitors. The site synopsis[51] for Howth Head SAC lists the recreational use of Howth Head, such as walking, as a cause of erosion within the SAC. There will be a potential increase of *c*. 425 of inhabitants in the vicinity of Howth Head as a result of the proposed development. Further erosion of Howth Head SAC, and its associated habitats, as a result of this population increase, cannot be excluded.

7.2.3.1 Summary

140 Table 9 below presents a summary of the potential impacts of the proposed development on the qualifying interests of Howth Head SAC, and how these impacts relate to affecting the site's conservation objectives.

[51] NPWS (2013) Site Synopsis: Howth Head SAC [000202]. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.

Table 9 Potential Impacts/Effects on the Conservation Objectives of Howth Head SAC

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
Howth Head SAC			
Vegetated sea cliffs of the Atlantic and Baltic coasts To maintain the favourable conservation condition of Vegetated sea cliffs of the Atlantic and Baltic coasts in Howth Head SAC, which is defined as follows:			
Habitat length/ Kilometres/ Area stable, subject to natural processes, including erosion	Yes Increased footfall as a result of the proposed development and associated increase in population in the vicinity of Howth Head has the potential to result in habitat erosion or habitat degradation within Howth Head SAC.	No There is no project specific mitigation for this impact as there is Existing mitigation, in the form of recreational management such as the fencing around protected habitats, is currently in place around the Cliff Path Looped walk in Howth, see section 7.2.4.	No
Habitat distribution/ Occurrence/ No decline, subject to natural processes			
Physical structure: functionality and hydrological regime/ Occurrence of artificial barriers/ No alteration to natural function of geomorphological and hydrological processes, including groundwater quality, due to artificial structures			
Vegetation structure: zonation/ Occurrence/ Maintain range of sea cliff habitat zonations including transitional zones, subject to natural processes including erosion and succession			
Vegetation structure: vegetation height/ Centimetres/ Maintain structural variation within sward			
Vegetation composition: typical species and sub-communities/ Percentage cover at a representative number of monitoring stops/ Maintain range of sub-communities with typical species listed in the Irish Sea Cliff Survey (Barron et al., 2011)			
Vegetation composition: negative indicator species/ Percentage/Negative indicator species (including non-natives) to represent less than 5% cover			
Vegetation composition: bracken and woody species/ Percentage/ Cover of bracken (*Pteridium aquilinum*) on grassland and/or heath less than 10%. Cover of woody species on grassland and/or heath less than 20%			

European Dry Heaths To maintain the favourable conservation condition of European dry heaths in Howth Head SAC, which is defined as follows:			
Habitat area/ Hectares/ Area stable or increasing, subject to natural processes	Yes Increased footfall as a result of the proposed development and associated increase in population in the vicinity of Howth Head has the potential to result in habitat erosion or habitat degradation within Howth Head SAC.	No There is no project specific mitigation for this impact as there is Existing mitigation, in the form of recreational management such as the fencing around protected habitats, is currently in place around the Cliff Path Looped walk in Howth, see section 7.2.4.	No
Habitat distribution/ Occurrence/ No decline, subject to natural processes			
Ecosystem function: soil nutrients/ Soil pH and appropriate nutrient levels at a representative number of monitoring stops/ Maintain soil nutrient status within natural range			
Community diversity/ Abundance of variety of vegetation communities/ Maintain variety of vegetation communities, subject to natural processes			
Vegetation composition: lichens and bryophytes/ Number of species at a representative number of 2m x 2m monitoring stops/ Number of bryophyte or non-crustose lichen species present at each monitoring stop is at least three, excluding Campylopus and Polytrichum mosses			
Vegetation composition: number of positive indicator species/ Number of species at a representative number of 2m x 2m monitoring stops/ Number of positive indicator species present at each monitoring stop is at least two			
Vegetation composition: cover of positive indicator species/ Percentage cover at a representative number of 2m x 2m monitoring stops/ Cover of positive indicator species at least 50% for siliceous dry heath and 50- 75% for calcareous dry heath			
Vegetation composition: dwarf shrub composition/ Percentage cover at a representative number of 2m x 2m monitoring stops/ Proportion of dwarf shrub cover composed collectively of bog-myrtle (Myrica gale), creeping willow (Salix repens) and western gorse (Ulex gallii) is less than 50%			
Vegetation composition: negative indicator species/ Percentage cover at a representative number of 2m x 2m monitoring stops/ Total cover of negative indicator species less than 1%			
Vegetation composition: non-native species/ Percentage cover at, and in local vicinity of, a representative number of 2m x 2m monitoring stops/ Cover of non-native species less than 1%			

Vegetation composition: native trees and shrubs/ Percentage cover in local vicinity of a representative number of monitoring stops/ Cover of scattered native trees and shrubs less than 20%			

7.2.4 Mitigation Measures

141 Existing mitigation, in the form of recreational management such as the fencing around protected habitats, is currently in place around the Cliff Path Looped walk in Howth. As there is currently mitigation in place to protect the protected habitats in Howth Head SAC, an increase in human presence in the SAC as a result of the proposed development will not have an effect on the conservation objectives of Howth Head SAC. The following objectives of the Fingal Development plan 2017-2021 (Fingal County, 2017) ensure the management and protection of Howth Head SAC against increased recreational pressures:

- Howth 4 -Protect and manage the Special Amenity Area, having regard to the associated management plan and objectives for the buffer zone".
- Objective NH10 Ensure that the Council takes full account of the requirements of the Habitats and Birds Directives, as they apply both within and without European Sites in the performance of its functions
- Objective NH11 - Ensure that the Council, in the performance of its functions, takes full account of the objectives and management practices proposed in any management or related plans for European Sites in and adjacent to Fingal published by the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.

7.2.5 Residual Impacts

142 The proposed development poses no risk of affecting the conservation objectives, or the favourable conservation condition, of the qualifying interest habitats of Howth Head SAC, and there are therefore, no residual direct or indirect impacts associated with the proposed development that could adversely affect the integrity of Howth Head SAC.

7.2.6 Conclusion of Assessment for Howth Head SAC

143 Following an examination, analysis and evaluation in light of best scientific knowledge, of all relevant information in respect of the qualifying interests of Howth Head SAC, the potential impacts, and whether or not the predicted impacts would affect the conservation objectives that support the conservation condition of the qualifying interests, it has been concluded that the proposed development does not pose a risk of adversely affecting (either directly or indirectly) the integrity of Howth Head SAC.

7.3 Baldoyle Bay SPA [004016]

7.3.1 Ecological Baseline Description for Baldoyle Bay SPA

144 The Natura 2000 Standard Data Form[52] lists the SPA as an estuarine and bay system with habitats of variable but generally good quality. It has extensive mud and sand flats, often with a high organic content and salt marsh habitat. It has good salt marsh fringes where birds roost. The site supports wintering waterfowl, most notably an internationally important population of light-bellied brent goose. It also supports nationally important populations of shelduck, pintail, ringed plover, golden plover, grey plover and bar-tailed godwit. At high tide, the shallow waters attract species such as great-crested grebe and red-breasted merganser. Threats to the site include hunting, eutrophication, bait-digging and human habitation/ urbanisation.

7.3.2 Special Conservation Interests and Conservation Objectives of Baldoyle Bay SPA

145 The special conservation interests of Baldoyle Bay SPA, and the overall conservation objective, are listed below in Table 10.

Table 10 Special Conservation Interests and Conservation Objectives of Baldoyle Bay SPA

Special Conservation Interest(s)	Conservation Objective(s)
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 Wetland and Waterbirds NPWS (2013) Conservation Objectives: Baldoyle Bay SPA 004016. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.	To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA

146 In conjunction with considering the generic conservation objective for this SPA "To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA", the site specific conservation objectives document for Baldoyle Bay SPA also informed this assessment

147 The site specific conservation objectives document sets out the attributes, measures and targets that define the favourable conservation condition of the special conservation interests within the European site. Affecting the conservation condition of the special conservation interests is deemed to constitute an adverse effect on the integrity of a European site. The specific attributes and targets used to define the conservation objectives of the special conservation interests of Baldoyle Bay SPA are presented in Section 7.3.3, Table 11.

7.3.3 Examination and Analysis of Potential Direct and Indirect Impacts

148 The direct and/or indirect impacts by which the proposed development could (in the absence of mitigation measures) potentially affect the conservation objective attributes and targets supporting the conservation condition of the special conservation interests of Baldoyle Bay SPA, are:

[52] NPWS (2018) *Natura 2000 – Standard Data Form. North Bull Island SPA.* National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

- Habitat degradation as a result of surface water hydrological impacts
- Disturbance and displacement impacts
- Bird mortality as a result of Collision Risk Impacts

7.3.3.1 Habitat degradation as a result of surface water hydrological impacts

149 Surface water run-off and discharges from the proposed development will enter the downstream receiving environment via the existing surface water drainage network and outfall into Baldoyle Bay.

150 A pollution event, of a sufficient magnitude, has the potential to affect the receiving aquatic and marine environments (either alone or in combination with other pressures on water quality) to an extent that undermines the conservation objectives of the European sites downstream in Baldoyle Bay – Baldoyle Bay SAC and Baldoyle Bay SPA.

151 The release of contaminated surface water runoff and/or an accidental spillage or pollution event into any surface water features during construction, or operation, has the potential to affect water quality in the receiving aquatic environment. Such a pollution event may include: the release of sediment into receiving waters and the subsequent increase in mobilised suspended solids; and, the accidental spillage and/or leaks of containments (*e.g.* fuels, oils, paints etc.) into receiving waters. The associated effects of a reduction of surface water quality could potentially extend for a considerable distance downstream of the location of the accidental pollution event or the discharge. The Proposed development is hydrologically connected to Baldoyle Bay. Therefore, there is potential for the Proposed development to result in significant effects which could have implications for the conservation objectives of Baldoyle Bay SPA as a result of hydrological impacts.

7.3.3.2 Disturbance and displacement impacts

152 A short-term and/or permanent increases in noise, vibration and/or human activity levels during the construction and/or operation of the proposed development could result in the disturbance to and/or displacement of SCI bird species present within footprint and/or the vicinity of the proposed development. Such disturbance effects would not be expected to extend beyond a distance of *c.* 300m, as noise levels associated with general construction activities would attenuate to close to background levels at that distance and beyond [53].

153 Baldoyle Bay SPA is designated for wintering SCI species that are known to forage at inland sites across Dublin, such as amenity grassland habitats like those present within the southern section of proposed development site – (i.e. light-bellied brent goose). Within 300m of the proposed development site there are further suitable foraging and roosting habitats like the amenity grassland in the surrounding golf course at Deer Park and the intertidal habitats at Claremont Strand. These species include light-bellied brent goose. There are areas of suitable foraging habitat for these species within the footprint of, and within 300m, of the proposed development at Claremont Strand.

154 As records of SCI bird species associated with Baldoyle Bay SPA have been returned from the desk study in the vicinity of the Proposed development (*i.e.* light-bellied brent goose) and were recorded within the proposed development site during the winter bird survey in 2019-2020 and 2020-2021, it is considered to be possible that SCI species associated with Baldoyle Bay SPA currently utilise the amenity grassland habitat

[53] The disturbance zone of influence for waterbirds is based on the relationship between the noise levels generated by general construction traffic/works (BS 5228:2009 Code of Practice for Noise and Vibration Control on Construction and Open Sites – Part 1 Noise) and the proximity of those noise levels to birds – as assessed in Cutts, N. Phelps, A. & Burdon, D. (2009) *Construction and Waterfowl: Defining Sensitivity, Response, Impacts and Guidance*, and Wright, M., Goodman, P & Cameron, T. (2010) Exploring Behavioural Responses of Shorebirds to Impulsive Noise. *Wildfowl* (2010) 60: 150–167. At 300m, noise levels are below 60dB or, in most cases, are approaching the 50dB threshold below which no disturbance or displacement effects would arise.

in the proposed development site and other suitable lands in the wider area. However, there is no potential for impacts to occur on any populations of SCI bird species associated with Baldoyle Bay SPA, in light of their conservation objectives, as a consequence of the disturbance and/or displacement from inland feeding/roosting sites due to increased levels of disturbance for the following reasons:

- The relatively low peak counts recorded on lands located within the footprint and 300m buffer of the proposed development, especially when compared to 1% of both their international flyway and national populations, and the mean peak flock of light-bellied brent goose recorded in the nearest SPA, showing that these sites are not important in supporting the overall SPA population of light-bellied brent goose , and SCI birds are likely to use other suitable sites available in the wider area on a similar or more regular basis;
- The relatively low frequency of occurrence of these SCI bird species on lands located within the footprint and 300m buffer of the proposed development, shows that these species do not regularly use or rely upon these lands as foraging and/or roosting habitat, and are likely to use other suitable sites available in the wider area on a similar or more regular basis;
- The availability of large areas of alternative suitable foraging and/or roosting habitat for these SCI bird species in the wider locality of the proposed development, including those in closer proximity to Baldoyle Bay, and similar parkland, golf courses and extensive areas of agricultural land; and,
- Impacts associated with increased levels of disturbance will likely result in the short-term displacement of these SCI species to other suitable available lands in the locality, for a maximum of 18-24 months during construction works, and only over the winter period. Following the completion of construction, disturbance levels will likely return to baseline conditions and as a result these lands will become available again as foraging and/or roosting habitat for these SCI species. Therefore, this potential impact will be short-term in nature.
- During the operational phase of the proposed development, an increase in human presence at Claremont beach has the potential to disturb wintering SCI species, given SCI species peak counts were below the 1% national population, the operational phase will not adversely impact the population trends or distribution of SCI species. Additionally, the western side of Deer Park golf course is private land and closed to the public, therefore removing potential for increased human presence to disturb SCI flocks here.

7.3.3.3 Bird mortality as a result of Collision Risk Impacts

155 Considering the proposed development's coastal location, adjacent to Baldoyle Bay, there is potential for the proposed development to present a collision risk to mobile SCI species which may fly over the proposed development lands to reach inland foraging sites.

156 Birds are mobile species and can travel up to 20km from designated sites.[54] As such collision risk impacts resulting in bird mortality occurring at a sufficient magnitude, has the potential to affect birds that occur in the receiving environment (either alone or in combination with other disturbance and displacement pressures) to an extent that undermines the conservation objectives Baldoyle Bay SPA.

157 The survey results show one single light-bellied brent goose flight, consisting of a single individual bird was recorded during the winter of 2020/2021 over the proposed development site. This flight was recorded at collision risk height (20m or below). To put some context on light-bellied brent goose avoidance capabilities, in a different setting and for use in collision risk modelling for onshore wind turbines, an avoidance rate of 99.8% is applied, which essentially this means that 99.8% (SNH, 2018)[55] of light-bellied

[54] Scottish Natural Heritage (2016) Guidance: Assessing connectivity with Special Protection Areas (SPAs). Version 3

[55] Scottish Natural Heritage (SNH). (2018) Avoidance Rates for the onshore SNH Wind Farm Collision Risk Model. September 2018 v2.

brent goose flights, respectively, will avoid collision with a moving turbine. The risk of collision is even less with a static, clearly detectable building.

158 The proposed buildings consist of glazing, broken up with intermittent stone and brick cladding with louvre panelling and metal balustrade over sections of external glazing. Although the presence of the proposed development may alter their flight patterns slightly to avoid the proposed building structure, the building will not pose a collision risk to light-bellied brent geese that would have any population level effects.

7.3.3.4 Summary

159 Table 11 below presents a summary of the potential impacts of the proposed development on the special conservation interests of Baldoyle Bay SPA, and how these impacts relate to affecting the site's conservation objectives.

Table 11 Potential Impacts/Effects on the Conservation Objectives of Baldoyle Bay SPA

Conservation Objectives Attribute/Measure/Target	**Potential Impacts Requiring Mitigation?**	**Are mitigation measures required?**	**Residual Impacts?**
Baldoyle Bay SPA			
Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] To maintain/restore the favourable conservation condition of the special conservation interests of the SPA, which is defined as follows:			
Population trend / Percentage change / Long term population trend stable or increasing	<u>Habitat degradation as a result of surface water hydrological impacts</u> Yes - An accidental pollution event during construction or operation could affect surface water downstream in Baldoyle Bay. An accidental pollution event of a sufficient magnitude, either along or cumulatively with other pollution sources, could potentially affect the quality the of intertidal/coastal habitats that support the special conservation interest bird species of the SPA. This could potentially affect the use of habitat areas by birds and have long-term effects on the SPA populations.	<u>Habitat degradation as a result of surface water hydrological impacts</u> Yes- The mitigation measures described in 7.1.4 to protect water quality in the receiving environment will ensure that surface water quality in Baldoyle Bay is protected during construction and operation of the proposed development. <u>Disturbance and displacement impacts</u> No <u>Bird mortality as a result of Collision Risk Impacts</u> No	<u>Habitat degradation as a result of surface water hydrological impacts</u> No <u>Disturbance and displacement impacts</u> No <u>Bird mortality as a result of Collision Risk Impacts</u> No

Distribution / Range, timing and intensity of use of areas / No significant decrease in the range, timing and intensity of use of areas by all of the above named species, other than that occurring from natural patterns of variation	<u>Disturbance and displacement impacts</u> No - Baldoyle Bay SPA mean peak flock count for light-bellied brent goose populations is 1,104 birds[56]. A peak flock count of 65 light-bellied brent geese were recorded within the 300m buffer of the proposed development site. This is <6% of the SPA population and <1% of the national and international populations of light-bellied brent geese. Light-bellied brent geese were recorded on three of the eleven survey days in the winter of 2019/2020 and three of the nine survey days in the winter of 2020/2021 within the 300m buffer of the proposed development site. Given the low numbers of SPA birds, the infrequency of use of the lands by the birds, the availability of suitable alternative inland feeding habitat in the surrounding lands and the short-term nature of the impact (limited to the construction phase only, after which disturbance levels would return to near baseline conditions), disturbance and displacement will not have an effect on the distribution, range, timing or intensity of use of areas by light-bellied brent geese that would have any population level effects. <u>Bird mortality as a result of Collision Risk Impacts</u> No – one single light-bellied brent goose flight, consisting of a single individual bird was recorded during the winter of 2020/2021 over the proposed development site. This flight was recorded at collision risk height. Light-bellied brent geese avoidance rate is applied at 99.8% (SNH, 2018)[57] for avoidance of collision with a moving turbine. The risk of collision is even less with a static, clearly detectable building. It is, therefore, considered that the building will not pose a collision risk to light-bellied brent geese that would have any population level effects.		
Shelduck (*Tadorna tadorna*) [A048], Ringed Plover (*Charadrius hiaticula*) [A137], Golden Plover (*Pluvialis apricaria*) [A140], Grey Plover (*Pluvialis squatarola*) [A141], Bar-tailed Godwit (*Limosa lapponica*) [A157]			

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
To maintain/restore the favourable conservation condition of the special conservation interests of the SPA, which is defined as follows:			
Population trend / Percentage change / Long term population trend stable or increasing Distribution / Range, timing and intensity of use of areas / No significant decrease in the range, timing and intensity of use of areas by all of the above named species, other than that occurring from natural patterns of variation	<u>Habitat degradation as a result of surface water hydrological impacts</u> Yes- An accidental pollution event during construction or operation could affect surface water downstream in Baldoyle Bay. An accidental pollution event of a sufficient magnitude, either along or cumulatively with other pollution sources, could potentially affect the quality the of intertidal/coastal habitats that support the special conservation interest bird species of the SPA. This could potentially affect the use of habitat areas by birds and have long-term effects on the SPA populations. <u>Disturbance and displacement impacts</u> None of these SCI species were recorded within the proposed development site or within the 300m buffer, therefore there is no possibility to disturb/displace them. <u>Bird mortality as a result of Collision Risk Impacts</u> None of these SCI species were recorded flying over the proposed development site, therefore there is no risk of collision.	<u>Habitat degradation as a result of surface water hydrological impacts</u> Yes - The mitigation measures described in 7.1.4 to protect water quality in the receiving environment will ensure that surface water quality in Baldoyle Bay is protected during construction and operation of the proposed development. <u>Disturbance and displacement impacts</u> No <u>Bird mortality as a result of Collision Risk Impacts</u> No	<u>Habitat degradation as a result of surface water hydrological impacts</u> No <u>Disturbance and displacement impacts</u> No <u>Bird mortality as a result of Collision Risk Impacts</u> No
Wetlands [A999] To maintain the favourable conservation condition of wetland habitats within the SPA, which is defined as follows:			

[56] NPWS (2012) Baldoyle Bay Special Protection Area Conservation Objectives Supporting Document Version 1.

[57] Scottish Natural Heritage (SNH). (2018) Avoidance Rates for the onshore SNH Wind Farm Collision Risk Model. September 2018 v2.

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
Habitat area / Hectares / The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 263ha, other than that occurring from natural patterns of variation	Habitat degradation as a result of surface water hydrological impacts Yes-An accidental pollution event during construction or operation could affect surface water downstream in Baldoyle Bay. An accidental pollution event of a sufficient magnitude, either along or cumulatively with other pollution sources, could potentially affect the quality the of intertidal/coastal habitats that support the special conservation interest bird species of the SPA. This could potentially affect the use of habitat areas by birds and have long-term effects on the SPA populations.	Habitat degradation as a result of surface water hydrological impacts Yes-The mitigation measures described in 7.1.4 to protect water quality in the receiving environment will ensure that surface water quality in Baldoyle Bay is protected during construction and operation of the proposed development.	No

7.3.4 Mitigation Measures

160 This section presents the mitigation measures that will be implemented during construction and operation to avoid or reduce the potential impacts of the proposed development on Baldoyle Bay SPA. All of the mitigation measures will be implemented in full and are best practice, and tried and tested, effective control measures to protect the receiving environment, and are included in the site-specific CEMP.

161 See section 7.1.4 'Measures to Protect Surface Waters during Construction and Operation' which provides the necessary mitigation measures to protect the water quality in Baldoyle Bay during construction and operation of the proposed development.

7.3.5 Residual Impacts

162 The proposed development poses no risk of affecting the conservation objectives, or the favourable conservation condition, of the special conservation interest habitats of Baldoyle Bay SPA, and there are therefore, no residual direct or indirect impacts associated with the proposed development that could adversely affect the integrity of Baldoyle Bay SPA.

7.3.6 Conclusion of Assessment for Baldoyle Bay SPA

163 Following an examination, analysis and evaluation in light of best scientific knowledge, of all relevant information in respect of the special conservation interests of Baldoyle Bay SPA, the potential impacts, and whether or not the predicted impacts would affect the conservation objectives that support the conservation condition of the special conservation interests, it has been concluded that the proposed development does not pose a risk of adversely affecting (either directly or indirectly) the integrity of Baldoyle Bay SPA.

7.4 North Bull Island SPA [004006]

7.4.1 Ecological Baseline Description for North Bull Island SPA

164 The Natura 2000 Standard Data Form[58], lists the SPA as one of the top ten sites in the country for wintering waterfowl. It provides important feeding and roosting habitat for bird species listed as Special Conservation Interests for the site and supports internationally important populations of light-bellied brent goose and bar-tailed godwit. The quality of the estuarine habitats in the SPA are considered to be very good, part of which are designated as North Dublin Bay SAC. There are no serious imminent threats to the wintering birds. Threats to the site include oil pollution from Dublin Port along with localised commercial bait digging, disturbance from activities such as sailing, walkers and dogs.

7.4.2 Special Conservation Interests and Conservation Objectives of North Bull Island SPA

165 The special conservation interests of North Bull Island SPA, and the overall conservation objective, are listed below in Table 12.

Table 12 Special Conservation Interests and Conservation Objectives of North Bull Island SPA

Special Conservation Interest(s)	Conservation Objective(s)
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 *Croicocephalus ridibundus* A999 Wetlands & Waterbirds NPWS (2015) Conservation Objectives: *North Bull Island SPA 004006*. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.	To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA

166 In conjunction with considering the generic conservation objective for this SPA "To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA", the site specific conservation objectives document for North Bull Island SPA also informed this assessment

[58] NPWS (2018) *Natura 2000 – Standard Data Form. North Bull Island SPA.* National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

167 The site specific conservation objectives document sets out the attributes, measures and targets that define the favourable conservation condition of the special conservation interests within the European site. Affecting the conservation condition of the special conservation interests is deemed to constitute an adverse effect on the integrity of a European site. The specific attributes and targets used to define the conservation objectives of the special conservation interests of North Bull Island SPA are presented in Section 7.4.3, Table 13.

7.4.3 Examination and Analysis of Potential Direct and Indirect Impacts

168 The direct and/or indirect impacts by which the proposed development could (in the absence of mitigation measures) potentially affect the conservation objective attributes and targets supporting the conservation condition of the special conservation interests of North Bull Island SPA, are:

- Habitat loss and fragmentation
- Disturbance and displacement impacts
- Bird mortality as a result of Collision Risk Impacts

7.4.3.1 Habitat loss and fragmentation

169 As the proposed development will not result in habitat loss or habitat fragmentation within any European site or any supporting ex-situ site associated with SPA populations of SCI birds, there is no potential for any in combination effects to occur in that regard

7.4.3.2 Disturbance and displacement impacts

170 A short-term and/or permanent increases in noise, vibration and/or human activity levels during the construction and/or operation of the proposed development could result in the disturbance to and/or displacement of SCI bird species present within footprint and/or the vicinity of the proposed development. Such disturbance effects would not be expected to extend beyond a distance of *c.* 300m, as noise levels associated with general construction activities would attenuate to close to background levels at that distance and beyond.

171 North Bull Island SPA is designated for wintering SCI species that are known to forage at inland sites across Dublin, such as amenity grassland habitats like those present within the southern section of proposed development site (*i.e.* light-bellied brent goose, oystercatcher, curlew, dunlin, redshank and black-headed gull). Within 300m of the proposed development site there are further suitable foraging and roosting habitats like the amenity grassland in the surrounding golf course at Deer Park and the intertidal habitats at Claremont Strand. These species include light-bellied brent goose, oystercatcher, curlew, dunlin, redshank and black-headed gull. There are areas of suitable foraging habitat for these species within the footprint of, and within 300m, of the proposed development at Claremont Strand.

172 As records of SCI bird species associated with North Bull Island SPA have been returned from the desk study in the vicinity of the Proposed development (*i.e.* light-bellied brent goose, oystercatcher, curlew, dunlin, redshank and black-headed gull) and were recorded within the proposed development site during the winter bird survey in 2019-2020 and 2020-2021, it is considered to be possible that SCI species associated with North Bull Island SPA currently utilise the amenity grassland habitat in the proposed development site and other suitable lands in the wider area. However, there is no potential for impacts to occur on any populations of SCI bird species associated with North Bull Island SPA, in light of their conservation objectives, as a consequence of the disturbance and/or displacement from inland feeding/roosting sites due to increased levels of disturbance due to the following reasons:

- The relatively low peak counts recorded on lands located within the footprint and 300m buffer of the proposed development, especially when compared to 1% of both their international flyway and national populations, and the mean peak flock of light-bellied brent goose recorded in the nearest SPA, showing that these sites are not important in supporting the overall SPA population

of light-bellied brent goose , and SCI birds are likely to use other suitable sites available in the wider area on a similar or more regular basis;

- The relatively low frequency of occurrence of these SCI bird species on lands located within the footprint and 300m buffer of the proposed development, shows that these species do not regularly use or rely upon these lands as foraging and/or roosting habitat, and are likely to use other suitable sites available in the wider area on a similar or more regular basis;
- The availability of large areas of alternative suitable foraging and/or roosting habitat for these SCI bird species in the wider locality of the proposed development, including those in closer proximity to Baldoyle Bay, and similar parkland, golf courses and extensive areas of agricultural land; and,
- Impacts associated with increased levels of disturbance will likely result in the short-term displacement of these SCI species to other suitable available lands in the locality, for a maximum of 18-24 months during construction works, and only over the winter period. Following the completion of construction, disturbance levels will likely return to baseline conditions and as a result these lands will become available again as foraging and/or roosting habitat for these SCI species. Therefore, this potential impact will be short-term in nature.
- During the operational phase of the proposed development, an increase in human presence at Claremont beach has the potential to disturb wintering SCI species, given SCI species peak counts were below the 1% national population, the operational phase will not adversely impact the population trends or distribution of SCI species. Additionally, the western side of Deer Park golf course is private land and closed to the public, therefore removing potential for increased human presence to disturb SCI flocks here.

7.4.3.3 Bird mortality as a result of Collision Risk Impacts

173 Considering the proposed development's coastal location, adjacent to Baldoyle Bay, there is potential for the proposed development to present a collision risk to mobile SCI species which may fly over the proposed development lands to reach inland foraging sites.

174 Birds are mobile species and can travel up to 20km from designated sites.[59] As such collision risk impacts resulting in bird mortality occurring at a sufficient magnitude, has the potential to affect birds that occur in the receiving environment (either alone or in combination with other disturbance and displacement pressures) to an extent that undermines the conservation objectives North Bull Island SPA.

175 The survey results show one single light-bellied brent goose flight, consisting of a single individual bird was recorded during the winter of 2020/2021 over the proposed development site. This flight was recorded at collision risk height (20m or below). To put some context on light-bellied brent goose avoidance capabilities, in a different setting and for use in collision risk modelling for onshore wind turbines, an avoidance rate of 99.8% is applied, which essentially this means that 99.8% (SNH, 2018)[60] of light-bellied brent goose flights, respectively, will avoid collision with a moving turbine. The risk of collision is even less with a static, clearly detectable building.

176 The survey results show six oystercatcher flights over the proposed development site, with a peak flock count of 12 birds, which is <1% of the SPA population. All flights occurred at collision risk height (20m or below). Given the low numbers of SPA birds and the infrequency of use of the lands by the birds, it is, therefore, considered that the building will not pose a collision risk to oystercatcher that would have any population level effects.

[59] Scottish Natural Heritage (2016) Guidance: Assessing connectivity with Special Protection Areas (SPAs). Version 3

[60] Scottish Natural Heritage (SNH). (2018) Avoidance Rates for the onshore SNH Wind Farm Collision Risk Model. September 2018 v2.

177 The survey results show 11 curlew flights over the proposed development site, with a peak flock count of 30 birds, which is <2% of SPA population. All flights occurred at collision risk height (20m or below). Given the low numbers of SPA birds and the infrequency of use of the lands by the birds, it is, therefore, considered that the building will not pose a collision risk to curlew that would have any population level effects.

178 The survey results show one single black-headed gull flight, consisting of a pair of black-headed gulls recorded during the winter of 2020/2021 over the proposed development site. This flight was recorded at collision risk height (20m). Gulls traversed the footprint of the proposed development more than other bird species recorded, as they regularly use inland sites. In Dublin, gulls navigate an urban environment with built structures daily. To put some context on their avoidance capabilities, in a different setting and for use in collision risk modelling for onshore wind turbines, an avoidance rate of 99.5% is applied for large gull species and an avoidance rate of 99.2% is applied for small gull species (Furness, 2019)[61], which essentially this means that 99.5% and 99.2% of gull flights, respectively, will avoid collision with a moving turbine. The risk of collision is even less with a static, clearly detectable building. It is, therefore, considered that the building will not pose a collision risk to gulls that would have any population level effects.

179 The proposed buildings consist of glazing, broken up with intermittent stone and brick cladding with louvre panelling and metal balustrade over sections of external glazing. Although the presence of the proposed development may alter their flight patterns slightly to avoid the proposed building structure, the building will not pose a collision risk to light-bellied brent geese that would have any population level effects.

7.4.4 Summary

180 Table 13 below presents a summary of the potential impacts of the proposed development on the special conservation interests of North Bull Island SPA, and how these impacts relate to affecting the site's conservation objectives.

[61] Furness, R.W. (2019) Avoidance rates of herring gull, great black-backed gull and common gull for use in the assessment of terrestrial wind farms in Scotland. Scottish Natural Heritage Research Report No. 1019.

Table 13 Potential Impacts/Effects on the Conservation Objectives of North Bull Island SPA

Conservation Objectives Attribute/Measure/Target	**Potential Impacts Requiring Mitigation?**	**Are mitigation measures required?**	**Residual Impacts?**
North Bull Island SPA			
Light-bellied Brent Goose (*Branta bernicla hrota*) [A046], Oystercatcher (*Haematopus ostralegus*), Dunlin (*Calidris alpina alpina*) [A149], Curlew (*Numenius arquata*) [A160], Redshank (*Tringa totanus*) [A162], Black-headed Gull (*Chroicocephalus ridibundus*) [A179] To restore the favourable conservation condition of the special conservation interests of the SPA, which is defined as follows:			
Population trend / Percentage change / Long term population trend stable or increasing	Disturbance and displacement impacts *Light-bellied brent goose* No – North Bull Island SPA mean peak flock count for light-bellied brent goose populations is 1,548 birds[62]. A peak flock count of 65 light-bellied brent geese were recorded within the 300m buffer of the proposed development site. This is >4% of the SPA population and <1% of the national and international populations of light-bellied brent geese. Light-bellied brent geese were recorded on only three of the eleven survey days in the winter of 2019/2020 and only three of the nine survey days in the winter of 2020/2021 within the 300m buffer of the proposed development site. Given the low numbers of SPA birds, the infrequency of use of the lands by the birds, the availability of suitable inland feeding habitat in the surrounding lands and the short-term nature of the impact (limited to the construction phase only, after which disturbance levels would return to near baseline conditions), disturbance and displacement is not considered to be a significant potential impact requiring mitigation. *Oystercatcher*	Disturbance and displacement impacts No Bird mortality as a result of Collision Risk Impacts No	Disturbance and displacement impacts No Bird mortality as a result of Collision Risk Impacts No
Distribution / Range, timing and intensity of use of areas / No significant decrease in the range, timing and intensity of use of areas by all of the above named species, other than that occurring from natural patterns of variation			

[62] NPWS (2014) North Bull Island Special Protection Area & South Dublin Bay and River Tolka Estuary Special Protection Area Conservation Objectives Supporting Document Version 1.

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
	No – North Bull Island SPA mean peak flock count for oystercatcher populations is 1,784 birds. A peak flock count of 42 were recorded within the 300m buffer of the proposed development site. This is >2% of the SPA population and <1% of the national and international populations of oystercatcher. Oystercatcher were recorded on six of the eleven survey days in the winter of 2019/2020 and seven of the nine survey days in the winter of 2020/2021 within the 300m buffer of the proposed development site. Given the low numbers of SPA birds, the availability of suitable inland feeding habitat in the surrounding lands and the short-term nature of the impact (limited to the construction phase only, after which disturbance levels would return to near baseline conditions), disturbance and displacement is not considered to be a significant potential impact requiring mitigation. *Curlew* No – North Bull Island SPA mean peak flock count for oystercatcher populations is 937 birds. A peak flock count of 128 were recorded within the 300m buffer of the proposed development site. This is >13.5% of the SPA population and <1% of the national and international populations of oystercatcher. Oystercatcher were recorded on seven of the eleven survey days in the winter of 2019/2020 and five of the nine survey days in the winter of 2020/2021 within the 300m buffer of the proposed development site. Given the availability of suitable inland feeding habitat in the surrounding lands and the short-term nature of the impact (limited to the construction phase only, after which disturbance levels would return to near baseline conditions), disturbance and displacement is not considered to be a significant potential impact requiring mitigation.		

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
	Dunlin No – North Bull Island SPA mean peak flock count for dunlin populations is 4,146 birds. A peak flock count of 35 were recorded within the 300m buffer of the proposed development site. This is <1% of the SPA population and <1% of the national and international populations of oystercatcher. Dunlin were not recorded once in the eleven survey days in the winter of 2019/2020 and were only recorded once in the nine survey days in the winter of 2020/2021 within the 300m buffer of the proposed development site. Given the low numbers of SPA birds, the infrequency of use of the lands by the birds, the availability of suitable inland feeding habitat in the surrounding lands and the short-term nature of the impact (limited to the construction phase only, after which disturbance levels would return to near baseline conditions), disturbance and displacement is not considered to be a significant potential impact requiring mitigation. *Redshank* No – North Bull Island SPA mean peak flock count for redshank populations is 1,784 birds. A peak flock count of 2 were recorded within the 300m buffer of the proposed development site. This is <1% of the SPA population and <1% of the national and international populations of redshank. Redshank were recorded on six of the eleven survey days in the winter of 2019/2020 and two of the nine survey days in the winter of 2020/2021 within the 300m buffer of the proposed development site. Given the low numbers of SPA birds, the infrequency of use of the lands by the birds, the availability of suitable inland feeding habitat in the surrounding lands and the short-term nature of the impact (limited to the construction phase only, after which disturbance levels would return to near baseline		

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
	conditions), disturbance and displacement is not considered to be a significant potential impact requiring mitigation. *Black-headed gull* No – North Bull Island SPA mean peak flock count for black-headed gull populations is 1,784 birds. A peak flock count of 42 were recorded within the 300m buffer of the proposed development site. This is >2% of the SPA population and <1% of the national and international populations of black-headed gull. Black-headed gull were recorded on five of the eleven survey days in the winter of 2019/2020 and four of the nine survey days in the winter of 2020/2021 within the 300m buffer of the proposed development site. Given the low numbers of SPA birds, the infrequency of use of the lands by the birds, the availability of suitable inland feeding habitat in the surrounding lands and the short-term nature of the impact (limited to the construction phase only, after which disturbance levels would return to near baseline conditions), disturbance and displacement is not considered to be a significant potential impact requiring mitigation. <u>Bird mortality as a result of Collision Risk Impacts</u> *Light-bellied brent goose* No – one single light-bellied brent goose flight, consisting of a single individual bird was recorded during the winter of 2020/2021 over the proposed development site. This flight was recorded at collision risk height. Light-bellied brent geese avoidance rate is applied at 99.8%		

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
	(SNH, 2018)[63] for avoidance of collision with a moving turbine. The risk of collision is even less with a static, clearly detectable building. It is, therefore, considered that the building will not pose a collision risk to light-bellied brent geese. *Oystercatcher* No - The survey results show six oystercatcher flights over the proposed development site, with a peak flock count of 12 birds, which is <1% of the SPA population. All flights occurred at collision risk height (20m or below). Given the low numbers of SPA birds and the infrequency of use of the lands by the birds, it is, therefore, considered that the building will not pose a collision risk to oystercatcher. *Curlew* No - The survey results show 11 curlew flights over the proposed development site, with a peak flock count of 30 birds, which is <2% of SPA population. All flights occurred at collision risk height (20m or below). Given the low numbers of SPA birds and the infrequency of use of the lands by the birds, it is, therefore, considered that the building will not pose a collision risk to curlew. *Black-headed gull* No - The survey results show one single black-headed gull flight, consisting of a pair of black-headed gulls recorded during the winter of 2020/2021 over the proposed development site. This flight was recorded at collision risk height (20m). Gulls traversed the footprint		

[63] Scottish Natural Heritage (SNH). (2018) Avoidance Rates for the onshore SNH Wind Farm Collision Risk Model. September 2018 v2.

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
	of the proposed development more than other bird species recorded, as they regularly use inland sites. In Dublin, gulls navigate an urban environment with built structures daily. To put some context on their avoidance capabilities, in a different setting and for use in collision risk modelling for onshore wind turbines, an avoidance rate of 99.5% is applied for large gull species and an avoidance rate of 99.2% is applied for small gull species (Furness, 2019)[64], which essentially this means that 99.5% and 99.2% of gull flights, respectively, will avoid collision with a moving turbine. The risk of collision is even less with a static, clearly detectable building. It is, therefore, considered that the building will not pose a collision risk to black-headed gulls. *Redshank and Dunlin* Neither of these SCI species were recorded flying over the proposed development site, therefore there is no risk of collision.		
Shelduck (*Tadorna tadorna*) [A048], Teal (*Anas crecca*) [A052], Pintail (*Anas acuta*) [A054], Shoveler (*Anas clypeata*) [A056], Golden Plover (*Pluvialis apricaria*) [A140], Grey Plover (*Pluvialis squatarola*) [A141], Sanderling (*Calidris alba*) [A144], Black-tailed Godwit (*Limosa limosa*) [A156], Bar-tailed Godwit (*Limosa lapponica*) [A157], Turnstone (*Arenaria interpres*) [A169] To restore the favourable conservation condition of the special conservation interests of the SPA, which is defined as follows:			
Population trend / Percentage change / Long term population trend stable or increasing Distribution / Range, timing and intensity of use of areas / No significant decrease in the range, timing and intensity of use of areas by all of the above named species, other than that occurring from natural patterns of variation	<u>Disturbance and displacement impacts</u> None of these SCI species were recorded within the proposed development site or within the 300m buffer, therefore there is no possibility to disturb/displace them. <u>Bird mortality as a result of Collision Risk Impacts</u> None of these SCI species were recorded flying over the proposed development site, therefore there is no risk of collision.	<u>Disturbance and displacement impacts</u> No	<u>Disturbance and displacement impacts</u> No

[64] Furness, R.W. (2019) Avoidance rates of herring gull, great black-backed gull and common gull for use in the assessment of terrestrial wind farms in Scotland. Scottish Natural Heritage Research Report No. 1019.

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
		Bird mortality as a result of Collision Risk Impacts No	Bird mortality as a result of Collision Risk Impacts No
Wetlands [A999] To maintain the favourable conservation condition of wetland habitats within the SPA, which is defined as follows:			
Habitat area / Hectares / The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 1713ha, other than that occurring from natural patterns of variation	No There is no potential for impacts to occur that could potentially affect the quality the of intertidal/coastal habitats that support the special conservation interest bird species of the SPA.	No	No

7.4.5 Mitigation Measures

181 As there is no potential for impacts to occur on the North Bull Island SPA as a result of the Proposed development, no mitigation measures are required.

7.4.6 Residual Impacts

182 The proposed development poses no risk of affecting the conservation objectives, or the favourable conservation condition, of the special conservation interest habitats of North Bull Island SPA, and there are therefore, no residual direct or indirect impacts associated with the proposed development that could adversely affect the integrity of North Bull Island SPA.

7.4.7 Conclusion of Assessment for North Bull Island SPA

183 Following an examination, analysis and evaluation in light of best scientific knowledge, of all relevant information in respect of the special conservation interests of North Bull Island SPA, the potential impacts, and whether or not the predicted impacts would affect the conservation objectives that support the conservation condition of the special conservation interests, it has been concluded that the proposed development does not pose a risk of adversely affecting (either directly or indirectly) the integrity of North Bull Island SPA.

7.5 Ireland's Eye SPA [004117]

7.5.1 Ecological Baseline Description for Ireland's Eye SPA

184 According to the Natura 2000 Standard Data Form[65], this SPA is a small uninhabited island located *c.* 1.5km north of Howth Head. The main habitat on the island is a mix of dry grassland and bracken. There are impressive cliff formations along the northern and eastern sides of the island. This SPA has a large seabird colony, with 11 species breeding regularly. It is designated for breeding populations of cormorant, herring gull, kittiwake, guillemot and razorbill. Major threats to the site include walking, horse riding and non-motorised vehicles and leisure fishing.

7.5.2 Special Conservation Interests and Conservation Objectives of Ireland's Eye SPA

185 The special conservation interests of Ireland's Eye SPA, and the overall conservation objective, are listed below in Table 14.

Table 14 Special Conservation Interests and Conservation Objectives of Ireland's Eye SPA

Special Conservation Interest(s)	Conservation Objective(s)
A017 Cormorant *Phalacrocorax carbo* A184 Herring Gull *Larus argentatus* A188 Kittiwake *Rissa tridactyla* A199 Guillemot *Uria aalge* A200 Razorbill *Alca torda* NPWS (2021) *Conservation objectives for Ireland's Eye SPA [004117].* Generic Version 8.0. Department of Culture, Heritage and the Gaeltacht.	To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA

186 A site-specific conservation objectives document is not currently available for Ireland's Eye SPA. However, in conjunction with considering the generic conservation objective to "To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA", a set of site specific conservation objectives has been compiled for the SCIs of Ireland's Eye SPA and used to inform this assessment, based on site specific conservation objectives documents available for other European sites with equivalent SCI species. As a precautionary approach, "restore" is used to define the conservation objective in this assessment. This sets out the attributes, measures and targets that would be expected to define the favourable conservation condition of SCI bird species within Ireland's Eye SPA

7.5.3 Examination and Analysis of Potential Direct and Indirect Impacts

187 The direct and/or indirect impacts by which the proposed development could (in the absence of mitigation measures) potentially affect the conservation objective attributes and targets supporting the conservation condition of the special conservation interests of Ireland's Eye SPA, are:

- Disturbance and displacement impacts
- Bird mortality as a result of Collision Risk Impacts

7.5.3.1 Disturbance and displacement impacts

188 A short-term and/or permanent increases in noise, vibration and/or human activity levels during the construction and/or operation of the proposed development could result in the disturbance to and/or

[65] NPWS (2018) *Natura 2000 – Standard Data Form. Ireland's Eye SPA.* National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

displacement of SCI bird species present within footprint and/or the vicinity of the proposed development. Such disturbance effects would not be expected to extend beyond a distance of *c.* 300m, as noise levels associated with general construction activities would attenuate to close to background levels at that distance and beyond.

189 Ireland's Eye SPA is designated for both wintering and breeding SCI species that are known to forage at inland sites across Dublin, such as amenity grassland habitats like those present within the southern section of proposed development site (*i.e.* herring gull and cormorant). Within 300m of the proposed development site there are further suitable foraging and roosting habitats like the amenity grassland in the surrounding golf course at Deer Park and the intertidal habitats at Claremont Strand. These species include herring gull and cormorant. There are areas of suitable foraging habitat for these species within the footprint of, and within 300m, of the proposed development at Claremont Strand.

190 As records of SCI bird species associated with Ireland's Eye SPA have been returned from the desk study in the vicinity of the Proposed development (*i.e.* herring gull and cormorant) and were recorded flying over the proposed development site during both the breeding birds surveys in 2020 and the winter bird survey in 2019-2020 and 2020-2021, it is considered to be possible that SCI species associated with Ireland's Eye SPA currently utilise the amenity grassland habitat in the proposed development site and other suitable lands in the wider area. However, there is no potential for impacts to occur on any populations of SCI bird species associated with Ireland's Eye SPA, in light of their conservation objectives, as a consequence of the disturbance and/or displacement from inland feeding/roosting sites due to increased levels of disturbance for the following reasons:

- No herring gull or cormorant were recorded landing within the footprint of the proposed development site during either the breeding birds surveys in 2020 or during the winter birds surveys in 2019/2020 or 2020/2021, showing that the proposed development site is not important in supporting the overall SPA population of either wintering or breeding SCI populations of herring gull or cormorant;
- The availability of large areas of alternative suitable foraging and/or roosting habitat for these SCI bird species in the wider locality of the proposed development, including those in closer proximity to Baldoyle Bay, and similar parkland, golf courses and extensive areas of agricultural land; and,
- Impacts associated with increased levels of disturbance will likely result in the short-term displacement of these SCI species to other suitable available lands in the locality, for a maximum of 18-24 months during construction works. Following the completion of construction, disturbance levels will likely return to baseline conditions and as a result these lands will become available again as foraging and/or roosting habitat for these SCI species. Therefore, this potential impact will be short-term in nature.
- During the operational phase of the proposed development, an increase in human presence at Claremont beach has the potential to disturb SCI species, given SCI species peak counts were below the 1% national population, the operational phase will not adversely impact the population trends or distribution of SCI species. Additionally, the western side of Deer Park golf course is private land and closed to the public, therefore removing potential for increased human presence to disturb SCI flocks here.

7.5.3.2 Bird mortality as a result of Collision Risk Impacts

191 Considering the proposed development's coastal location, adjacent to Baldoyle Bay, there is potential for the proposed development to present a collision risk to mobile SCI species which may fly over the proposed development lands to reach inland foraging sites.

192 Birds are mobile species and can travel up to 20km from designated sites.[66] As such collision risk impacts resulting in bird mortality occurring at a sufficient magnitude, has the potential to affect birds that occur in the receiving environment (either alone or in combination with other disturbance and displacement pressures) to an extent that undermines the conservation objectives Ireland's Eye SPA.

193 The winter birds survey results show one single cormorant flight, consisting of a single individual bird recorded during the winter of 2020/2021 over the proposed development site. This flight was recorded at collision risk height (20m or below). The breeding birds surveys recorded only two flights consisting of individual cormorants in June 2020. Given the infrequency of use of the lands by the birds, it is, therefore, considered that the building will not pose a collision risk to cormorant that would have any population level effects.

194 The winter birds survey results show 174 herring gull flight, with a peak flock count of 56 birds, which is >29% of the SPA population. Of the 174 flights over the proposed development site, 67.3% were recorded at collision risk height (20m). The breeding birds surveys recorded six flights, four flights of individual birds, and two flights consisting of a pair in June 2020. Gulls traversed the footprint of the proposed development more than other bird species recorded in the winter 2020/2021 birds surveys, as they regularly use inland sites. In Dublin, gulls navigate an urban environment with built structures daily. To put some context on their avoidance capabilities, in a different setting and for use in collision risk modelling for onshore wind turbines, an avoidance rate of 99.5% is applied for large gull species and an avoidance rate of 99.2% is applied for small gull species (Furness, 2019)[67], which essentially this means that 99.5% and 99.2% of gull flights, respectively, will avoid collision with a moving turbine. The risk of collision is even less with a static, clearly detectable building. It is, therefore, considered that the building will not pose a collision risk to herring gulls that would have any population level effects.

195 The proposed buildings consist of glazing, broken up with intermittent stone and brick cladding with louvre panelling and metal balustrade over sections of external glazing. Although the presence of the proposed development may alter their flight patterns slightly to avoid the proposed building structure, the building will not pose a collision risk to light-bellied brent geese that would have any population level effects.

7.5.3.3 Summary

196 Table 15 below presents a summary of the potential impacts of the proposed development on the special conservation interests of Ireland's Eye SPA, and how these impacts relate to affecting the site's conservation objectives.

[66] Scottish Natural Heritage (2016) Guidance: Assessing connectivity with Special Protection Areas (SPAs). Version 3

[67] Furness, R.W. (2019) Avoidance rates of herring gull, great black-backed gull and common gull for use in the assessment of terrestrial wind farms in Scotland. Scottish Natural Heritage Research Report No. 1019.

Table 15 Potential Impacts/Effects on the Conservation Objectives of Ireland's Eye SPA

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
Ireland's Eye SPA			
Cormorant [A017], Herring Gull [A184] There is no site specific conservation objectives document available for this SPA. Therefore, the attributes, measures and targets below have been developed based on the specific conservation objectives available for Rogerstown Estuary SPA [004015]			
Population trend / Percentage change / Long term population trend stable or increasing Distribution / Range, timing and intensity of use of areas / No significant decrease in the range, timing and intensity of use of areas by all of the above named species, other than that occurring from natural patterns of variation	<u>Disturbance and displacement impacts</u> *Herring gull* No – Ireland's Eye SPA population is estimated at 530 individuals and a peak flock count of 596 herring gull were recorded within the 300m buffer of the proposed development site during the winter bird survey in 2020/2021. This exceeds the SPA population estimate but is significantly lower than the 1% international populations of herring gull. Herring gull were recorded consistently throughout both the winter of 2019/2020 and the winter of 2020/2021 within the 300m buffer of the proposed development site. During the breeding birds survey in 2020 no herring gull were recorded landing within the proposed development site. Given the availability of suitable inland feeding habitat in the surrounding lands and the short-term nature of the impact (limited to the construction phase only, after which disturbance levels would return to near baseline conditions), disturbance and displacement is not considered to be a significant potential impact requiring mitigation *Cormorant* No cormorant were recorded landing within the proposed development site during the winter bird survey in 2020/2021 or the breeding bird survey in 2020 or within the 300m buffer during the winter bird survey in 2020/2021, therefore there is no possibility to disturb/displace them.	<u>Disturbance and displacement impacts</u> No <u>Bird mortality as a result of Collision Risk Impacts</u> No	<u>Disturbance and displacement impacts</u> No <u>Bird mortality as a result of Collision Risk Impacts</u> No

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
	Bird mortality as a result of Collision Risk Impacts *Herring Gull* No - The winter bird survey in 2020/2021 results show 174 herring gull flight, with a peak flock count of 56 birds, which is >29% of the SPA population. Of the 174 flights over the proposed development site, 67.3% were recorded at collision risk height (20m). During the breeding birds survey in 2020 six herring gull flights were recorded, with a peak count of two birds, flying over the proposed development site. Gulls traversed the footprint of the proposed development more than other bird species recorded, as they regularly use inland sites. In Dublin, gulls navigate an urban environment with built structures daily. To put some context on their avoidance capabilities, in a different setting and for use in collision risk modelling for onshore wind turbines, an avoidance rate of 99.5% is applied for large gull species and an avoidance rate of 99.2% is applied for small gull species (Furness, 2019), which essentially this means that 99.5% and 99.2% of gull flights, respectively, will avoid collision with a moving turbine. The risk of collision is even less with a static, clearly detectable building. It is, therefore, considered that the building will not pose a collision risk to herring gulls. *Cormorant* No –one single cormorant flight, consisting of a single individual bird recorded during the winter of 2020/2021 over the proposed development site. This flight was recorded at collision risk height (20m or below). During the breeding birds survey in 2020 only two cormorant flights, consisting of individual birds were recorded flying over the proposed development site. Given the infrequency of use of the lands by the birds, it is, therefore, considered that the building will not pose a collision risk to cormorant.		
Kittiwake [A188], Guillemot [A199], Razorbill [A200] There is no site specific conservation objectives document available for this SPA. Therefore, the attributes, measures and targets below have been developed based on the specific conservation objectives available for Rogerstown Estuary SPA [004015]			

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
Population trend / Percentage change / Long term population trend stable or increasing	Disturbance and displacement impacts None of these SCI species were recorded within the proposed development site or within the 300m buffer, therefore there is no possibility to disturb/displace them. Bird mortality as a result of Collision Risk Impacts None of these SCI species were recorded flying over the proposed development site, therefore there is no risk of collision.	Disturbance and displacement impacts No Bird mortality as a result of Collision Risk Impacts No	Disturbance and displacement impacts No Bird mortality as a result of Collision Risk Impacts No
Distribution / Range, timing and intensity of use of areas / No significant decrease in the range, timing and intensity of use of areas by all of the above named species, other than that occurring from natural patterns of variation			

7.5.4 Mitigation Measures

197 As there is no potential for impacts to occur on the Ireland's Eye SPA as a result of the Proposed development, no mitigation measures are required.

7.5.5 Residual Impacts

198 The proposed development poses no risk of affecting the conservation objectives, or the favourable conservation condition, of the special conservation interest habitats of Ireland's Eye SPA, and there are therefore, no residual direct or indirect impacts associated with the proposed development that could adversely affect the integrity of Ireland's Eye SPA.

7.5.6 Conclusion of Assessment for Ireland's Eye SPA

199 Following an examination, analysis and evaluation in light of best scientific knowledge, of all relevant information in respect of the special conservation interests of Ireland's Eye SPA, the potential impacts, and whether or not the predicted impacts would affect the conservation objectives that support the conservation condition of the special conservation interests, it has been concluded that the proposed development does not pose a risk of adversely affecting (either directly or indirectly) the integrity of Ireland's Eye SPA.

7.6 Malahide Estuary SPA [004025]

7.6.1 Ecological Baseline Description for Malahide Estuary SPA

200 Malahide Estuary SPA comprises the estuary of the River Broadmeadow. According to the Natura 2000 Standard Data Form for the site[68], the estuary comprises, saltmarsh habitats and extensive intertidal flats. This site is of high importance for wintering waterfowl and supports a particularly good diversity of species. It provides both feeding and roosting areas for a range of wintering waterfowl. It supports an internationally important population of light-bellied brent geese and nationally important populations of a further 12 species. The site is also an important and regular site for ta range of autumn passage migrants.

7.6.2 Special Conservation Interests and Conservation Objectives of Malahide Estuary SPA

201 The special conservation interests of Malahide Estuary SPA, and the overall conservation objective, are listed below in Table 16.

Table 16 Special Conservation Interests and Conservation Objectives of Malahide Estuary SPA

Special Conservation Interest(s)	Conservation Objective(s)
A005 Great Crested Grebe *Podiceps cristatus* A046 Light-bellied Brent Goose *Branta bernicla hrota* A048 Shelduck *Tadorna tadorna* A054 Pintail *Anas acuta* A067 Goldeneye *Bucephala clangula* A069 Red-breasted Merganser *Mergus serrator* A130 Oystercatcher *Haematopus ostralegus* A140 Golden Plover *Pluvialis apricaria* A141 Grey Plover *Pluvialis squatarola* A143 Knot *Calidris canutus* A149 Dunlin *Calidris alpina* A156 Black-tailed Godwit *Limosa limosa* A157 Bar-tailed Godwit *Limosa lapponica* A162 Redshank *Tringa totanus* A999 Wetland and Waterbirds NPWS (2013) *Conservation Objectives: Malahide Estuary SPA 004025.* Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.	To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA

202 In conjunction with considering the generic conservation objective for this SPA "To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA", the site specific conservation objectives document for Malahide Estuary SPA also informed this assessment

203 The site specific conservation objectives document sets out the attributes, measures and targets that define the favourable conservation condition of the special conservation interests within the European site. Affecting the conservation condition of the special conservation interests is deemed to constitute an adverse effect on the integrity of a European site. The specific attributes and targets used to define the

[68] NPWS (2018) *Natura 2000 – Standard Data Form. Malahide Estuary SPA.* National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

conservation objectives of the special conservation interests of Malahide Estuary SPA are presented in Section 7.6.3, Table 17.

7.6.3 Examination and Analysis of Potential Direct and Indirect Impacts

204 The direct and/or indirect impacts by which the proposed development could (in the absence of mitigation measures) potentially affect the conservation objective attributes and targets supporting the conservation condition of the special conservation interests of Malahide Estuary SPA, are:

- Habitat loss and fragmentation
- Disturbance and displacement impacts
- Bird mortality as a result of Collision Risk Impacts

7.6.3.1 Habitat loss and fragmentation

205 As the proposed development will not result in habitat loss or habitat fragmentation within any European site or any supporting ex-situ site associated with SPA populations of SCI birds, there is no potential for any in combination effects to occur in that regard

7.6.3.2 Disturbance and displacement impacts

206 A short-term and/or permanent increases in noise, vibration and/or human activity levels during the construction and/or operation of the proposed development could result in the disturbance to and/or displacement of SCI bird species present within footprint and/or the vicinity of the proposed development. Such disturbance effects would not be expected to extend beyond a distance of *c.* 300m, as noise levels associated with general construction activities would attenuate to close to background levels at that distance and beyond.

207 Malahide Estuary SPA is designated for wintering SCI species that are known to forage at inland sites across Dublin, such as amenity grassland habitats like those present within the southern section of proposed development (*i.e.* light-bellied brent goose, oystercatcher, dunlin and redshank). Within 300m of the proposed development site there are further suitable foraging and roosting habitats like the amenity grassland in the surrounding golf course at Deer Park and the intertidal habitats at Claremont Strand. These species include light-bellied brent goose, oystercatcher, dunlin and redshank. There are areas of suitable foraging habitat for these species within the footprint of, and within 300m, of the proposed development at Claremont Strand.

208 As records of SCI bird species associated with Malahide Estuary SPA have been returned from the desk study in the vicinity of the proposed development (*i.e.* light-bellied brent goose, oystercatcher, dunlin and redshank) and were recorded within the proposed development site during the winter bird survey in 2019-2020 and 2020-2021, it is considered to be possible that SCI species associated with Malahide Estuary SPA currently utilise the amenity grassland habitat in the proposed development site and other suitable lands in the wider area. However, there is no potential for impacts to occur on any populations of SCI bird species associated with Malahide Estuary SPA, in light of their conservation objectives, as a consequence of the disturbance and/or displacement from inland feeding/roosting sites due to increased levels of disturbance for the following reasons:

- The relatively low peak counts recorded on lands located within the footprint and 300m buffer of the proposed development, especially when compared to 1% of both their international flyway and national populations, and the mean peak flock of light-bellied brent goose recorded in the nearest SPA, showing that these sites are not important in supporting the overall SPA population of light-bellied brent goose , and SCI birds are likely to use other suitable sites available in the wider area on a similar or more regular basis;
- The relatively low frequency of occurrence of these SCI bird species on lands located within the footprint and 300m buffer of the proposed development, shows that these species do not regularly

use or rely upon these lands as foraging and/or roosting habitat, and are likely to use other suitable sites available in the wider area on a similar or more regular basis;

- The availability of large areas of alternative suitable foraging and/or roosting habitat for these SCI bird species in the wider locality of the proposed development, including those in closer proximity to Baldoyle Bay, and similar parkland, golf courses and extensive areas of agricultural land; and,
- Impacts associated with increased levels of disturbance will likely result in the short-term displacement of these SCI species to other suitable available lands in the locality, for a maximum of 18 months during construction works, and only over the winter period. Following the completion of construction, disturbance levels will likely return to baseline conditions and as a result these lands will become available again as foraging and/or roosting habitat for these SCI species. Therefore, this potential impact will be short-term in nature.
- During the operational phase of the proposed development, an increase in human presence at Claremont beach has the potential to disturb wintering SCI species, given SCI species peak counts were below the 1% national population, the operational phase will not adversely impact the population trends or distribution of SCI species. Additionally, the western side of Deer Park golf course is private land and closed to the public, therefore removing potential for increased human presence to disturb SCI flocks here.

7.6.3.3 Bird mortality as a result of Collision Risk Impacts

209 Considering the proposed development's coastal location, adjacent to Baldoyle Bay, there is potential for the proposed development to present a collision risk to mobile SCI species which may fly over the proposed development lands to reach inland foraging sites.

210 Birds are mobile species and can travel up to 20km from designated sites.[69] As such collision risk impacts resulting in bird mortality occurring at a sufficient magnitude, has the potential to affect birds that occur in the receiving environment (either alone or in combination with other disturbance and displacement pressures) to an extent that undermines the conservation objectives Malahide Estuary SPA.

211 The survey results show one single light-bellied brent goose flight, consisting of a single individual bird was recorded during the winter of 2020/2021 over the proposed development site. This flight was recorded at collision risk height. Light-bellied brent geese avoidance rate is applied at 99.8% (SNH, 2018)[70] for avoidance of collision with a moving turbine. The risk of collision is even less with a static, clearly detectable building. It is, therefore, considered that the building will not pose a collision risk to light-bellied brent geese that would have any population level effects.

212 The survey results show six oystercatcher flights over the proposed development site, with a peak flock count of 12 birds, which is <1% of the SPA population. All flights occurred at collision risk height (20m or below). Given the low numbers of SPA birds and the infrequency of use of the lands by the birds, it is, therefore, considered that the building will not pose a collision risk to oystercatcher that would have any population level effects.

213 The proposed buildings consist of glazing, broken up with intermittent stone and brick cladding with louvre panelling and metal balustrade over sections of external glazing. Although the presence of the proposed development may alter their flight patterns slightly to avoid the proposed building structure, the building will not pose a collision risk to light-bellied brent geese that would have any population level effects.

[69] Scottish Natural Heritage (2016) Guidance: Assessing connectivity with Special Protection Areas (SPAs). Version 3

[70] Scottish Natural Heritage (SNH). (2018) Avoidance Rates for the onshore SNH Wind Farm Collision Risk Model. September 2018 v2.

7.6.3.4 Summary

214 Table 17 below presents a summary of the potential impacts of the proposed development on the special conservation interests of Malahide Estuary SPA, and how these impacts relate to affecting the site's conservation objectives.

Table 17 Potential Impacts/Effects on the Conservation Objectives of Malahide Estuary SPA

Conservation Objectives Attribute/Measure/Target	**Potential Impacts Requiring Mitigation?**	**Are mitigation measures required?**	**Residual Impacts?**
Malahide Estuary SPA			
Light-bellied Brent Goose (*Branta bernicla hrota*) [A046], Oystercatcher (*Haematopus ostralegus*) [A130], Dunlin (*Calidris alpina alpina*) [A149], Redshank (*Tringa totanus*) [A162] To restore the favourable conservation condition of the special conservation interests of the SPA, which is defined as follows:			
Population trend / Percentage change / Long term population trend stable or increasing Distribution / Range, timing and intensity of use of areas / No significant decrease in the range, timing and intensity of use of areas by all of the above named species, other than that occurring from natural patterns of variation	<u>Disturbance and displacement impacts</u> *Light-bellied brent goose* No – Malahide Estuary SPA mean peak flock count for light-bellied brent goose populations is 1,104 birds[71]. A peak flock count of 65 light-bellied brent geese were recorded within the 300m buffer of the proposed development site. This is >6% of the SPA population and <1% of the national and international populations of light-bellied brent geese. Light-bellied brent geese were recorded on three of the eleven survey days in the winter of 2019/2020 and three of the nine survey days in the winter of 2020/2021 within the 300m buffer of the proposed development site. Given the low numbers of SPA birds, the infrequency of use of the lands by the birds, the availability of suitable inland feeding habitat in the surrounding lands and the short-term nature of the impact (limited to the construction phase only, after which disturbance levels would return to near baseline conditions), disturbance and displacement is not considered to be a significant potential impact requiring mitigation.	<u>Disturbance and displacement impacts</u> No <u>Bird mortality as a result of Collision Risk Impacts</u> No	<u>Disturbance and displacement impacts</u> No <u>Bird mortality as a result of Collision Risk Impacts</u> No

[71] NPWS (2013) Malahide Estuary Special Protection Area Conservation Objectives Supporting Document Version 1.

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
	Oystercatcher No – Malahide Estuary SPA mean peak flock count for oystercatcher populations is 1,360 birds. A peak flock count of 42 were recorded within the 300m buffer of the proposed development site. This is >2% of the SPA population and <1% of the national and international populations of oystercatcher. Oystercatcher were recorded on six of the eleven survey days in the winter of 2019/2020 and seven of the nine survey days in the winter of 2020/2021 within the 300m buffer of the proposed development site. Given the low numbers of SPA birds, the availability of suitable inland feeding habitat in the surrounding lands and the short-term nature of the impact (limited to the construction phase only, after which disturbance levels would return to near baseline conditions), disturbance and displacement is not considered to be a significant potential impact requiring mitigation. *Dunlin* No – Malahide Estuary SPA mean peak flock count for dunlin populations is 1,594 birds. A peak flock count of 35 were recorded within the 300m buffer of the proposed development site. This is >2% of the SPA population and <1% of the national and international populations of oystercatcher. Dunlin were not recorded once in the eleven survey days in the winter of 2019/2020 and were only recorded once in the nine survey days in the winter of 2020/2021 within the 300m buffer of the proposed development site. Given the low numbers of SPA birds, the infrequency of use of the lands by the birds, the availability of suitable inland feeding habitat in the surrounding lands and the short-term nature of the impact (limited to the construction phase only, after which disturbance levels would return to near baseline conditions), disturbance and displacement is not considered to be a significant potential impact requiring mitigation.		

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
	Redshank No – Malahide Estuary SPA mean peak flock count for redshank populations is 581 birds. A peak flock count of 2 were recorded within the 300m buffer of the proposed development site. This is <1% of the SPA population and <1% of the national and international populations of redshank. Redshank were recorded on six of the eleven survey days in the winter of 2019/2020 and two of the nine survey days in the winter of 2020/2021 within the 300m buffer of the proposed development site. Given the low numbers of SPA birds, the infrequency of use of the lands by the birds, the availability of suitable inland feeding habitat in the surrounding lands and the short-term nature of the impact (limited to the construction phase only, after which disturbance levels would return to near baseline conditions), disturbance and displacement is not considered to be a significant potential impact requiring mitigation. <u>Bird mortality as a result of Collision Risk Impacts</u> *Light-bellied brent goose* No – one single light-bellied brent goose flight, consisting of a single individual bird was recorded during the winter of 2020/2021 over the proposed development site. This flight was recorded at collision risk height. Light-bellied brent geese avoidance rate is applied at 99.8% (SNH, 2018)[72] for avoidance of collision with a moving turbine. The risk of collision is even less with a static, clearly detectable building. It is, therefore, considered that the building will not pose a collision risk to light-bellied brent geese.		

[72] Scottish Natural Heritage (SNH). (2018) Avoidance Rates for the onshore SNH Wind Farm Collision Risk Model. September 2018 v2.

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
	Oystercatcher No - The survey results show six oystercatcher flights over the proposed development site, with a peak flock count of 12 birds, which is <1% of the SPA population. All flights occurred at collision risk height (20m or below). Given the low numbers of SPA birds and the infrequency of use of the lands by the birds, it is, therefore, considered that the building will not pose a collision risk to oystercatcher. *Redshank and Dunlin* Neither of these SCI species were recorded flying over the proposed development site, therefore there is no risk of collision.		
Great Crested Grebe (*Podiceps cristatus*) [A005], Shelduck (*Tadorna tadorna*) [A048], Pintail (*Anas acuta*) [A054], Goldeneye (*Bucephala clangula*) [A067], Red-breasted Merganser (*Mergus serrator*) [A069], Golden Plover (*Pluvialis apricaria*) [A140], Grey Plover (*Pluvialis squatarola*) [A141], Knot (*Calidris canutus*) [A143], Black-tailed Godwit (*Limosa limosa*) [A156], Bar-tailed Godwit (*Limosa lapponica*) [A157] To restore the favourable conservation condition of the special conservation interests of the SPA, which is defined as follows:			
Population trend / Percentage change / Long term population trend stable or increasing Distribution / Range, timing and intensity of use of areas / No significant decrease in the range, timing and intensity of use of areas by all of the above named species, other than that occurring from natural patterns of variation	<u>Disturbance and displacement impacts</u> None of these SCI species were recorded within the proposed development site or within the 300m buffer, therefore there is no possibility to disturb/displace them. <u>Bird mortality as a result of Collision Risk Impacts</u> None of these SCI species were recorded flying over the proposed development site, therefore there is no risk of collision.	<u>Disturbance and displacement impacts</u> No <u>Bird mortality as a result of Collision Risk Impacts</u> No	<u>Disturbance and displacement impacts</u> No <u>Bird mortality as a result of Collision Risk Impacts</u> No
Wetlands [A999] To maintain the favourable conservation condition of wetland habitats within the SPA, which is defined as follows:			

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
Habitat area / Hectares / The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 765ha, other than that occurring from natural patterns of variation	No There is no potential for impacts to occur that could potentially affect the quality the of intertidal/coastal habitats that support the special conservation interest bird species of the SPA.	No	No

7.6.4 Mitigation Measures

215 As there is no potential for impacts to occur on the Malahide Estuary SPA as a result of the Proposed development, no mitigation measures are required.

7.6.5 Residual Impacts

216 The proposed development poses no risk of affecting the conservation objectives, or the favourable conservation condition, of the special conservation interest habitats of Malahide Estuary SPA, and there are therefore, no residual direct or indirect impacts associated with the proposed development that could adversely affect the integrity of Malahide Estuary SPA.

7.6.6 Conclusion of Assessment for Malahide Estuary SPA

217 Following an examination, analysis and evaluation in light of best scientific knowledge, of all relevant information in respect of the special conservation interests of Malahide Estuary SPA, the potential impacts, and whether or not the predicted impacts would affect the conservation objectives that support the conservation condition of the special conservation interests, it has been concluded that the proposed development does not pose a risk of adversely affecting (either directly or indirectly) the integrity of Malahide Estuary SPA.

7.7 South Dublin Bay and River Tolka Estuary SPA [004024]

7.7.1 Ecological Baseline Description for South Dublin Bay and River Tolka Estuary SPA

218 The Natura 2000 Standard Data Form[73], states that the SPA possesses extensive intertidal flats, part of which are designated as South Dublin Bay SAC, and which supports wintering waterfowl as part of the wider Dublin Bay population. The site also supports an internationally important population of light-bellied brent geese, feeding on the stands of *Zostera*. It hosts nationally important numbers of six species, is an important site for wintering gulls and is an autumn roosting site for a significant number of terns. The main threat to the site is land reclamation, with other threats including oil pollution from Dublin Port, commercial bait digging and disturbance by walkers and dogs.

7.7.2 Special Conservation Interests and Conservation Objectives of South Dublin Bay and River Tolka Estuary SPA

219 The special conservation interests of South Dublin Bay and River Tolka Estuary SPA, and the overall conservation objective, are listed below in Table 18.

Table 18 Special Conservation Interests and Conservation Objectives of South Dublin Bay and River Tolka Estuary SPA

Special Conservation Interest(s)	Conservation Objective(s)
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 *Croicocephalus ridibundus* A192 Roseate Tern *Sterna dougallii* A193 Common Tern *Sterna hirundo* A194 Arctic Tern *Sterna paradisaea* A999 Wetland and Waterbirds NPWS (2015) *Conservation Objectives: South Dublin Bay and River Tolka Estuary SPA 004024*. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.	To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA

220 In conjunction with considering the generic conservation objective for this SPA "To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA", the site specific conservation objectives document for Dublin Bay and River Tolka Estuary SPA also informed this assessment.

221 The site specific conservation objectives document sets out the attributes, measures and targets that define the favourable conservation condition of the special conservation interests within the European site.

[73] NPWS (2018) *Natura 2000 – Standard Data Form. South Dublin Bay and River Tolka Estuary SPA.* National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

Affecting the conservation condition of the special conservation interests is deemed to constitute an adverse effect on the integrity of a European site. The specific attributes and targets used to define the conservation objectives of the special conservation interests of South Dublin Bay and River Tolka Estuary SPA are presented in Section 7.7.3, Table 19.

7.7.3 Examination and Analysis of Potential Direct and Indirect Impacts

222 The direct and/or indirect impacts by which the proposed development could (in the absence of mitigation measures) potentially affect the conservation objective attributes and targets supporting the conservation condition of the special conservation interests of South Dublin Bay and River Tolka Estuary SPA, are:

- Habitat loss and fragmentation
- Disturbance and displacement impacts
- Bird mortality as a result of Collision Risk Impacts

7.7.3.1 Habitat loss and fragmentation

223 As the proposed development will not result in habitat loss or habitat fragmentation within any European site or any supporting ex-situ site associated with SPA populations of SCI birds, there is no potential for any in combination effects to occur in that regard

7.7.3.2 Disturbance and displacement impacts

224 A short-term and/or permanent increases in noise, vibration and/or human activity levels during the construction and/or operation of the proposed development could result in the disturbance to and/or displacement of SCI bird species present within footprint and/or the vicinity of the proposed development. Such disturbance effects would not be expected to extend beyond a distance of *c.* 300m, as noise levels associated with general construction activities would attenuate to close to background levels at that distance and beyond.

225 South Dublin Bay and River Tolka Estuary SPA is designated for wintering SCI species that are known to forage at inland sites across Dublin, such as amenity grassland habitats like those present within the southern section of proposed development site (*i.e.* light-bellied brent goose, oystercatcher, dunlin, redshank and black-headed gull). Within 300m of the proposed development site there are further suitable foraging and roosting habitats like the amenity grassland in the surrounding golf course at Deer Park and the intertidal habitats at Claremont Strand. These species include light-bellied brent goose, oystercatcher, dunlin, redshank and black-headed gull. There are areas of suitable foraging habitat for these species within the footprint of, and within 300m, of the proposed development at Claremont Strand.

226 As records of SCI bird species associated with South Dublin Bay and River Tolka Estuary SPA have been returned from the desk study in the vicinity of the Proposed development (*i.e.* light-bellied brent goose, oystercatcher, dunlin, redshank and black-headed gull) and were recorded within the proposed development site during the winter bird survey in 2019-2020 and 2020-2021, it is considered to be possible that SCI species associated South Dublin Bay and River Tolka Estuary SPA currently utilise the amenity grassland habitat in the proposed development site and other suitable lands in the wider area. However, there is no potential for impacts to occur on any populations of SCI bird species associated with South Dublin Bay and River Tolka Estuary SPA, in light of their conservation objectives, as a consequence of the disturbance and/or displacement from inland feeding/roosting sites due to increased levels of disturbance for the following reasons:

- The relatively low peak counts recorded on lands located within the footprint and 300m buffer of the proposed development, especially when compared to 1% of both their international flyway and national populations, and the mean peak flock of light-bellied brent goose recorded in the nearest SPA, showing that these sites are not important in supporting the overall SPA population

of light-bellied brent goose , and SCI birds are likely to use other suitable sites available in the wider area on a similar or more regular basis;

- The relatively low frequency of occurrence of these SCI bird species on lands located within the footprint and 300m buffer of the proposed development, shows that these species do not regularly use or rely upon these lands as foraging and/or roosting habitat, and are likely to use other suitable sites available in the wider area on a similar or more regular basis;
- The availability of large areas of alternative suitable foraging and/or roosting habitat for these SCI bird species in the wider locality of the proposed development, including those in closer proximity to Baldoyle Bay, and similar parkland, golf courses and extensive areas of agricultural land; and,
- Impacts associated with increased levels of disturbance will likely result in the short-term displacement of these SCI species to other suitable available lands in the locality, for a maximum of 18 months during construction works, and only over the winter period. Following the completion of construction, disturbance levels will likely return to baseline conditions and as a result these lands will become available again as foraging and/or roosting habitat for these SCI species. Therefore, this potential impact will be short-term in nature.
- During the operational phase of the proposed development, an increase in human presence at Claremont beach has the potential to disturb wintering SCI species, given SCI species peak counts were below the 1% national population, the operational phase will not adversely impact the population trends or distribution of SCI species. Additionally, the western side of Deer Park golf course is private land and closed to the public, therefore removing potential for increased human presence to disturb SCI flocks here.

7.7.3.3 Bird mortality as a result of Collision Risk Impacts

227 Considering the proposed development's coastal location, adjacent to Baldoyle Bay, there is potential for the proposed development to present a collision risk to mobile SCI species which may fly over the proposed development lands to reach inland foraging sites.

228 Birds are mobile species and can travel up to 20km from designated sites.[74] As such collision risk impacts resulting in bird mortality occurring at a sufficient magnitude, has the potential to affect birds that occur in the receiving environment (either alone or in combination with other disturbance and displacement pressures) to an extent that undermines the conservation objectives South Dublin Bay and River Tolka Estuary SPA.

229 The survey results show one single light-bellied brent goose flight, consisting of a single individual bird was recorded during the winter of 2020/2021 over the proposed development site. This flight was recorded at collision risk height (20m or below). To put some context on light-bellied brent goose avoidance capabilities, in a different setting and for use in collision risk modelling for onshore wind turbines, an avoidance rate of 99.8% is applied, which essentially this means that 99.8% (SNH, 2018)[75] of light-bellied brent goose flights, respectively, will avoid collision with a moving turbine. The risk of collision is even less with a static, clearly detectable building.

230 The survey results show six oystercatcher flights over the proposed development site, with a peak flock count of 12 birds, which is <1% of the SPA population[76]. All flights occurred at collision risk height (20m or

[74] Scottish Natural Heritage (2016) Guidance: Assessing connectivity with Special Protection Areas (SPAs). Version 3

[75] Scottish Natural Heritage (SNH). (2018) Avoidance Rates for the onshore SNH Wind Farm Collision Risk Model. September 2018 v2.

[76] NPWS (2014) North Bull Island Special Protection Area & South Dublin Bay and River Tolka Estuary Special Protection Area Conservation Objectives Supporting Document Version 1

below). Given the low numbers of SPA birds and the infrequency of use of the lands by the birds, it is, therefore, considered that the building will not pose a collision risk to oystercatcher that would have any population level effects.

231 The survey results show one single black-headed gull flight, consisting of a pair of black-headed gulls recorded during the winter of 2020/2021 over the proposed development site. This flight was recorded at collision risk height (20m). Gulls traversed the footprint of the proposed development more than other bird species recorded, as they regularly use inland sites. In Dublin, gulls navigate an urban environment with built structures daily. To put some context on their avoidance capabilities, in a different setting and for use in collision risk modelling for onshore wind turbines, an avoidance rate of 99.5% is applied for large gull species and an avoidance rate of 99.2% is applied for small gull species (Furness, 2019)[77], which essentially this means that 99.5% and 99.2% of gull flights, respectively, will avoid collision with a moving turbine. The risk of collision is even less with a static, clearly detectable building. It is, therefore, considered that the building will not pose a collision risk to gulls that would have any population level effects.

232 The proposed buildings consist of glazing, broken up with intermittent stone and brick cladding with louvre panelling and metal balustrade over sections of external glazing. Although the presence of the proposed development may alter their flight patterns slightly to avoid the proposed building structure, the building will not pose a collision risk to light-bellied brent geese that would have any population level effects.

7.7.3.4 Summary

233 Table 19 below presents a summary of the potential impacts of the proposed development on the special conservation interests of South Dublin Bay and River Tolka Estuary SPA, and how these impacts relate to affecting the site's conservation objectives.

[77] Furness, R.W. (2019) Avoidance rates of herring gull, great black-backed gull and common gull for use in the assessment of terrestrial wind farms in Scotland. Scottish Natural Heritage Research Report No. 1019.

Table 19 Potential Impacts/Effects on the Conservation Objectives of South Dublin Bay and River Tolka Estuary SPA

Conservation Objectives Attribute/Measure/Target	**Potential Impacts Requiring Mitigation?**	**Are mitigation measures required?**	**Residual Impacts?**
South Dublin Bay and River Tolka Estuary SPA			
Light-bellied Brent Goose (*Branta bernicla hrota*) [A046], Oystercatcher (*Haematopus ostralegus*) [A130], Dunlin (*Calidris alpina alpina*) [A149], Redshank (*Tringa totanus*) [A162], Black-headed Gull (*Chroicocephalus ridibundus*) [A179] To maintain the favourable conservation condition of the special conservation interests of the SPA, which is defined as follows:			
Population trend / Percentage change / Long term population trend stable or increasing Distribution / Range, timing and intensity of use of areas / No significant decrease in the range, timing and intensity of use of areas by all of the above named species, other than that occurring from natural patterns of variation	<u>Disturbance and displacement impacts</u> *Light-bellied brent goose* No – South Dublin Bay and River Tolka Estuary SPA mean peak flock count for light-bellied brent goose populations is 525 birds[78]. A peak flock count of 65 light-bellied brent geese were recorded within the 300m buffer of the proposed development site. This is >12% of the SPA population and <1% of the national and international populations of light-bellied brent geese. Light-bellied brent geese were recorded on three of the eleven survey days in the winter of 2019/2020 and three of the nine survey days in the winter of 2020/2021 within the 300m buffer of the proposed development site. Given the low numbers of SPA birds, the infrequency of use of the lands by the birds, the availability of suitable inland feeding habitat in the surrounding lands and the short-term nature of the impact (limited to the construction phase only, after which disturbance levels would return to near baseline conditions), disturbance and displacement is not considered to be a significant potential impact requiring mitigation.	<u>Disturbance and displacement impacts</u> No <u>Bird mortality as a result of Collision Risk Impacts</u> No	<u>Disturbance and displacement impacts</u> No <u>Bird mortality as a result of Collision Risk Impacts</u> No

[78] NPWS (2014) North Bull Island Special Protection Area & South Dublin Bay and River Tolka Estuary Special Protection Area Conservation Objectives Supporting Document Version 1.

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
	Oystercatcher No – South Dublin Bay and River Tolka Estuary SPA mean peak flock count for oystercatcher populations is 1,263 birds. A peak flock count of 42 were recorded within the 300m buffer of the proposed development site. This is >3% of the SPA population and <1% of the national and international populations of oystercatcher. Oystercatcher were recorded on six of the eleven survey days in the winter of 2019/2020 and seven of the nine survey days in the winter of 2020/2021 within the 300m buffer of the proposed development site. Given the low numbers of SPA birds, the availability of suitable inland feeding habitat in the surrounding lands and the short-term nature of the impact (limited to the construction phase only, after which disturbance levels would return to near baseline conditions), disturbance and displacement is not considered to be a significant potential impact requiring mitigation. *Dunlin* No – South Dublin Bay and River Tolka Estuary SPA mean peak flock count for dunlin populations is 2,753 birds. A peak flock count of 35 were recorded within the 300m buffer of the proposed development site. This is >1% of the SPA population and <1% of the national and international populations of oystercatcher. Dunlin were not recorded once in the eleven survey days in the winter of 2019/2020 and were only recorded once in the nine survey days in the winter of 2020/2021 within the 300m buffer of the proposed development site. Given the low numbers of SPA birds, the infrequency of use of the lands by the birds, the availability of suitable inland feeding habitat in the surrounding lands and the short-term nature of the impact (limited to the construction phase only, after which disturbance levels would		

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
	return to near baseline conditions), disturbance and displacement is not considered to be a significant potential impact requiring mitigation. *Redshank* No – South Dublin Bay and River Tolka Estuary SPA mean peak flock count for redshank populations is 713 birds. A peak flock count of 2 were recorded within the 300m buffer of the proposed development site. This is <1% of the SPA population and <1% of the national and international populations of redshank. Redshank were recorded on six of the eleven survey days in the winter of 2019/2020 and two of the nine survey days in the winter of 2020/2021 within the 300m buffer of the proposed development site. Given the low numbers of SPA birds, the infrequency of use of the lands by the birds, the availability of suitable inland feeding habitat in the surrounding lands and the short-term nature of the impact (limited to the construction phase only, after which disturbance levels would return to near baseline conditions), disturbance and displacement is not considered to be a significant potential impact requiring mitigation. *Black-headed gull* No – South Dublin Bay and River Tolka Estuary SPA mean peak flock count for black-headed gull populations is 3,040 birds. A peak flock count of 42 were recorded within the 300m buffer of the proposed development site. This is <2% of the SPA population and <1% of the national and international populations of black-headed gull. Black-headed gull were recorded on five of the eleven survey days in the winter of 2019/2020 and four of the nine survey days in the winter of 2020/2021 within the 300m buffer of the proposed development site.		

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
	Given the low numbers of SPA birds, the infrequency of use of the lands by the birds, the availability of suitable inland feeding habitat in the surrounding lands and the short-term nature of the impact (limited to the construction phase only, after which disturbance levels would return to near baseline conditions), disturbance and displacement is not considered to be a significant potential impact requiring mitigation. <u>Bird mortality as a result of Collision Risk Impacts</u> *Light-bellied brent goose* No – one single light-bellied brent goose flight, consisting of a single individual bird was recorded during the winter of 2020/2021 over the proposed development site. This flight was recorded at collision risk height. Light-bellied brent geese avoidance rate is applied at 99.8% (SNH, 2018)[79] for avoidance of collision with a moving turbine. The risk of collision is even less with a static, clearly detectable building. It is, therefore, considered that the building will not pose a collision risk to light-bellied brent geese. *Oystercatcher* No - The survey results show six oystercatcher flights over the proposed development site, with a peak flock count of 12 birds, which is <1% of the SPA population. All flights occurred at collision risk height (20m or		

[79] Scottish Natural Heritage (SNH). (2018) Avoidance Rates for the onshore SNH Wind Farm Collision Risk Model. September 2018 v2.

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
	below). Given the low numbers of SPA birds and the infrequency of use of the lands by the birds, it is, therefore, considered that the building will not pose a collision risk to oystercatcher. *Black-headed gull* No - The survey results show one single black-headed gull flight, consisting of a pair of black-headed gulls recorded during the winter of 2020/2021 over the proposed development site. This flight was recorded at collision risk height (20m). Gulls traversed the footprint of the proposed development more than other bird species recorded, as they regularly use inland sites. In Dublin, gulls navigate an urban environment with built structures daily. To put some context on their avoidance capabilities, in a different setting and for use in collision risk modelling for onshore wind turbines, an avoidance rate of 99.5% is applied for large gull species and an avoidance rate of 99.2% is applied for small gull species (Furness, 2019)[80], which essentially this means that 99.5% and 99.2% of gull flights, respectively, will avoid collision with a moving turbine. The risk of collision is even less with a static, clearly detectable building. It is, therefore, considered that the building will not pose a collision risk to black-headed gulls. *Redshank and Dunlin* Neither of these SCI species were recorded flying over the proposed development site, therefore there is no risk of collision.		
Ringed Plover (*Charadrius hiaticula*) [A137], Knot (*Calidris canutus*) [A143], Sanderling (*Calidris alba*) [A144], Bar-tailed Godwit (*Limosa lapponica*) [A157]			

[80] Furness, R.W. (2019) Avoidance rates of herring gull, great black-backed gull and common gull for use in the assessment of terrestrial wind farms in Scotland. Scottish Natural Heritage Research Report No. 1019.

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
Note: Grey Plover (*Pluvialis squatarola*) [A141] is proposed for removal from the list of SCI's for the site so no site specific conservation objective is included for the species To maintain the favourable conservation condition of the special conservation interests of the SPA, which is defined as follows:			
Population trend / Percentage change / Long term population trend stable or increasing Distribution / Range, timing and intensity of use of areas / No significant decrease in the range, timing and intensity of use of areas by all of the above named species, other than that occurring from natural patterns of variation	Disturbance and displacement impacts None of these SCI species were recorded within the proposed development site or within the 300m buffer, therefore there is no possibility to disturb/displace them. Bird mortality as a result of Collision Risk Impacts None of these SCI species were recorded flying over the proposed development site, therefore there is no risk of collision.	Disturbance and displacement impacts No Bird mortality as a result of Collision Risk Impacts No	Disturbance and displacement impacts No Bird mortality as a result of Collision Risk Impacts No
Roseate Tern (*Sterna dougallii*) [A192] To maintain the favourable conservation condition of the special conservation interests of the SPA, which is defined as follows:			
Passage population: individuals / Number / No significant decline Distribution: roosting areas / Number; location; area (hectares) / No significant decline Prey biomass available / Kilogrammes / No significant decline Barriers to connectivity / Number; location; shape; area (hectares) / No significant increase Disturbance at roosting site / Level of impact / Human activities should occur at levels that do not adversely	Disturbance and displacement impacts Roseate tern were not recorded within the proposed development site or within the 300m buffer, therefore there is no possibility to disturb/displace them. Bird mortality as a result of Collision Risk Impacts Given roseate terns were not recorded flying over the proposed development site and that the proposed development site does not contain suitable habitat for these terns, there is no risk of collision.	Disturbance and displacement impacts No Bird mortality as a result of Collision Risk Impacts No	Disturbance and displacement impacts No Bird mortality as a result of Collision Risk Impacts No

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
affect the numbers of roseate tern among the post-breeding aggregation of terns			
Common Tern (*Sterna hirundo*) [A193] To maintain the favourable conservation condition of the special conservation interests of the SPA, which is defined as follows:			
Breeding population abundance: apparently occupied nests (AONs) / Number / No significant decline	<u>Disturbance and displacement impacts</u> Common tern were not recorded within the proposed development site or within the 300m buffer, therefore there is no possibility to disturb/displace them. <u>Bird mortality as a result of Collision Risk Impacts</u> Given common terns were not recorded flying over the proposed development site and that the proposed development site does not contain suitable habitat for these terns, there is no risk of collision.	No	No
Productivity rate: fledged young per breeding pair / Mean number / No significant decline			
Passage population: individuals / Number / No significant decline			
Distribution: breeding colonies / Number; location; area (Hectares) / No significant decline			
Distribution: roosting areas / Number; location; area (Hectares) / No significant decline			
Prey biomass available / Kilogrammes / No significant decline			
Barriers to connectivity / Number; location; shape; area (hectares) / No significant increase			
Disturbance at breeding site / Level of impact / Human activities should occur at levels that do not adversely affect the breeding common tern population			
Disturbance at roosting site / Level of impact / Human activities should occur at levels that do not adversely affect the numbers of common tern among the post-breeding aggregation of terns			

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
Arctic Tern (*Sterna paradisaea*) [A194] To maintain the favourable conservation condition of the special conservation interests of the SPA, which is defined as follows:			
Passage population / Number of individuals / No significant decline	<u>Disturbance and displacement impacts</u> Common tern were not recorded within the proposed development site or within the 300m buffer, therefore there is no possibility to disturb/displace them. <u>Bird mortality as a result of Collision Risk Impacts</u> Given common terns were not recorded flying over the proposed development site and that the proposed development site does not contain suitable habitat for these terns, there is no risk of collision.	No	No
Distribution: roosting areas / Number; location; area (hectares) / No significant decline			
Prey biomass available / Kilogrammes / No significant decline			
Barriers to connectivity / Number; location; shape; area (hectares) / No significant increase			
Disturbance at roosting site / Level of impact / Human activities should occur at levels that do not adversely affect the numbers of Arctic tern among the post-breeding aggregation of terns			
Wetlands [A999] To maintain the favourable conservation condition of wetland habitats within the SPA, which is defined as follows:			
Habitat area / Hectares / The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 2192ha, other than that occurring from natural patterns of variation	No There is no potential for impacts to occur that could potentially affect the quality the of intertidal/coastal habitats that support the special conservation interest bird species of the SPA.	No	No

7.7.4 Mitigation Measures

234 As there is no potential for impacts to occur on the South Dublin Bay and River Tolka Estuary SPA as a result of the Proposed development, no mitigation measures are required.

7.7.5 Residual Impacts

235 The proposed development poses no risk of affecting the conservation objectives, or the favourable conservation condition, of the special conservation interest habitats of South Dublin Bay and River Tolka Estuary SPA, and there are therefore, no residual direct or indirect impacts associated with the proposed development that could adversely affect the integrity of South Dublin Bay and River Tolka Estuary SPA.

7.7.6 Conclusion of Assessment for South Dublin Bay and River Tolka Estuary SPA

236 Following an examination, analysis and evaluation in light of best scientific knowledge, of all relevant information in respect of the special conservation interests of South Dublin Bay and River Tolka Estuary SPA, the potential impacts, and whether or not the predicted impacts would affect the conservation objectives that support the conservation condition of the special conservation interests, it has been concluded that the proposed development does not pose a risk of adversely affecting (either directly or indirectly) the integrity of South Dublin Bay and River Tolka Estuary SPA.

7.8 Lambay Island SPA [004069]

7.8.1 Ecological Baseline Description for Lambay Island SPA

237 According to the Natura 2000 Standard Data Form[81], this SPA is an island located *c*. 4km off the north Dublin coastline. Habitats present on the island include rocky shorelines, low tide sandflats and fertile grassland. The northern, eastern and southern shorelines consist of steep cliffs. The predominant land use of the island is cattle grazing. This SPA has one of the most important seabird colonies in Ireland, with 12 species breeding regularly. It has been designated for breeding populations of fulmar, cormorant, shag, greylag goose, lesser black-backed gull, herring gull, kittiwake, guillemot, razorbill and puffin.

7.8.2 Special Conservation Interests and Conservation Objectives of Lambay Island SPA

238 The special conservation interests of Lambay Island SPA, and the overall conservation objective, are listed below in Table 20.

Table 20 Special Conservation Interests and Conservation Objectives of Lambay Island SPA

Special Conservation Interest(s)	Conservation Objective(s)
A009 Fulmar *Fulmarus glacialis* A017 Cormorant *Phalacrocorax carbo* A018 Shag *Phalacrocorax aristotelis* A043 Greylag Goose *Anser anser* A183 Lesser Black-backed Gull *Larus fuscus* A184 Herring Gull *Larus argentatus* A188 Kittiwake *Rissa tridactyla* A199 Guillemot *Uria aalge* A200 Razorbill *Alca torda* A204 Puffin *Fratercula arctica* NPWS (2021) *Conservation objectives for Lambay Island SPA [004069].* Generic Version 8.0. Department of Culture, Heritage and the Gaeltacht.	To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA

239 A site-specific conservation objectives document is not currently available for Lambay Island SPA. However, in conjunction with considering the generic conservation objective to "To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA", a set of site specific conservation objectives has been compiled for the SCIs of Lambay Island SPA and used to inform this assessment, based on site specific conservation objectives documents available for other European sites with equivalent SCI species. As a precautionary approach, "restore" is used to define the conservation objective in this assessment. This sets out the attributes, measures and targets that would be expected to define the favourable conservation condition of SCI bird species within Lambay Island SPA also informed this assessment.

7.8.3 Examination and Analysis of Potential Direct and Indirect Impacts

240 The direct and/or indirect impacts by which the proposed development could (in the absence of mitigation measures) potentially affect the conservation objective attributes and targets supporting the conservation condition of the special conservation interests of Lambay Island SPA, are:

[81] NPWS (2018) *Natura 2000 – Standard Data Form. Lambay Island SPA.* National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

- Disturbance and displacement impacts
- Bird mortality as a result of Collision Risk Impacts

7.8.3.1 Disturbance and displacement impacts

241 A short-term and/or permanent increases in noise, vibration and/or human activity levels during the construction and/or operation of the proposed development could result in the disturbance to and/or displacement of SCI bird species present within footprint and/or the vicinity of the proposed development. Such disturbance effects would not be expected to extend beyond a distance of *c.* 300m, as noise levels associated with general construction activities would attenuate to close to background levels at that distance and beyond.

242 Lambay Island SPA is designated for both wintering and breeding SCI species that are known to forage at inland sites across Dublin, such as amenity grassland habitats like those present within the southern section of proposed development site (*i.e.* cormorant and herring gull). Within 300m of the proposed development site there are further suitable foraging and roosting habitats like the amenity grassland in the surrounding golf course at Deer Park and the intertidal habitats at Claremont Strand. These species include cormorant and herring gull. There are areas of suitable foraging habitat for these species within the footprint of, and within 300m, of the proposed development at Claremont Strand.

243 As records of SCI bird species associated with Lambay Island SPA have been returned from the desk study in the vicinity of the Proposed development (*i.e.* cormorant and herring gull) and were recorded flying over the proposed development site during both the breeding birds surveys in 2020 and the winter bird survey in 2019-2020 and 2020-2021, it is considered to be possible that SCI species associated Lambay Island SPA currently utilise the amenity grassland habitat in the proposed development site and other suitable lands in the wider area. However, there is no potential for impacts to occur on any populations of SCI bird species associated with Lambay Island SPA, in light of their conservation objectives, as a consequence of the disturbance and/or displacement from inland feeding/roosting sites due to increased levels of disturbance for the following reasons:

- No herring gull or cormorant were recorded landing within the footprint of the proposed development site during either the breeding birds surveys in 2020 or during the winter birds surveys in 2019/2020 or 2020/2021, showing that the proposed development site is not important in supporting the overall SPA population of either wintering or breeding SCI populations of herring gull or cormorant;
- The availability of large areas of alternative suitable foraging and/or roosting habitat for these SCI bird species in the wider locality of the proposed development, including those in closer proximity to Baldoyle Bay, and similar parkland, golf courses and extensive areas of agricultural land; and,
- Impacts associated with increased levels of disturbance will likely result in the short-term displacement of these SCI species to other suitable available lands in the locality, for a maximum of 18-24 months during construction works. Following the completion of construction, disturbance levels will likely return to baseline conditions and as a result these lands will become available again as foraging and/or roosting habitat for these SCI species. Therefore, this potential impact will be short-term in nature.
- During the operational phase of the proposed development, an increase in human presence at Claremont beach has the potential to disturb SCI species, given SCI species peak counts were below the 1% national population, the operational phase will not adversely impact the population trends or distribution of SCI species. Additionally, the western side of Deer Park golf course is private land and closed to the public, therefore removing potential for increased human presence to disturb SCI flocks here.

7.8.3.2 Bird mortality as a result of Collision Risk Impacts

244 Considering the proposed development's coastal location, adjacent to Baldoyle Bay, there is potential for the proposed development to present a collision risk to mobile SCI species which may fly over the proposed development lands to reach inland foraging sites.

245 Birds are mobile species and can travel up to 20km from designated sites.[82] As such collision risk impacts resulting in bird mortality occurring at a sufficient magnitude, has the potential to affect birds that occur in the receiving environment (either alone or in combination with other disturbance and displacement pressures) to an extent that undermines the conservation objectives Lambay Island SPA.

246 The winter birds survey results show one single cormorant flight, consisting of a single individual bird recorded during the winter of 2020/2021 over the proposed development site. This flight was recorded at collision risk height (20m or below). The breeding birds surveys recorded only two flights consisting of individual cormorants in June 2020. Given the infrequency of use of the lands by the birds, it is, therefore, considered that the building will not pose a collision risk to cormorant that would have any population level effects.

247 The winter birds survey results show 174 herring gull flight, with a peak flock count of 56 birds. Of the 174 flights over the proposed development site, 67.3% were recorded at collision risk height (20m). The breeding birds surveys recorded six flights, four flights of individual birds, and two flights consisting of a pair in June 2020. Gulls traversed the footprint of the proposed development more than other bird species recorded in the winter 2020/2021 birds surveys, as they regularly use inland sites. In Dublin, gulls navigate an urban environment with built structures daily. To put some context on their avoidance capabilities, in a different setting and for use in collision risk modelling for onshore wind turbines, an avoidance rate of 99.5% is applied for large gull species and an avoidance rate of 99.2% is applied for small gull species (Furness, 2019)[83], which essentially this means that 99.5% and 99.2% of gull flights, respectively, will avoid collision with a moving turbine. The risk of collision is even less with a static, clearly detectable building. It is, therefore, considered that the building will not pose a collision risk to herring gulls that would have any population level effects.

248 Additionally, the proposed buildings consist of glazing, broken up with intermittent stone and brick cladding with louvre panelling and metal balustrade over sections of external glazing. Although the presence of the proposed development may alter their flight patterns slightly to avoid the proposed building structure, the building will not pose a collision risk to light-bellied brent geese that would have any population level effects.

7.8.3.3 Summary

249 Table 21 below presents a summary of the potential impacts of the proposed development on the special conservation interests of Lambay Island SPA, and how these impacts relate to affecting the site's conservation objectives.

[82] Scottish Natural Heritage (2016) Guidance: Assessing connectivity with Special Protection Areas (SPAs). Version 3

[83] Furness, R.W. (2019) Avoidance rates of herring gull, great black-backed gull and common gull for use in the assessment of terrestrial wind farms in Scotland. Scottish Natural Heritage Research Report No. 1019.

Table 21 Potential Impacts/Effects on the Conservation Objectives of Lambay Island SPA

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
Lambay Island SPA			
Cormorant [A017], Herring Gull [A184] There is no site specific conservation objectives document available for this SPA. Therefore, the attributes, measures and targets below have been developed based on the specific conservation objectives available for Rogerstown Estuary SPA [004015]			
Population trend / Percentage change / Long term population trend stable or increasing Distribution / Range, timing and intensity of use of areas / No significant decrease in the range, timing and intensity of use of areas by all of the above named species, other than that occurring from natural patterns of variation	<u>Disturbance and displacement impacts</u> *Herring gull* No – A peak flock count of 596 herring gull were recorded within the 300m buffer of the proposed development site during the winter bird survey in 2020/2021. This is significantly lower than the 1% international populations of herring gull. Herring gull were recorded consistently throughout both the winter of 2019/2020 and the winter of 2020/2021 within the 300m buffer of the proposed development site. During the breeding birds survey in 2020 no herring gull were recorded landing within the proposed development site. Given the availability of suitable inland feeding habitat in the surrounding lands and the short-term nature of the impact (limited to the construction phase only, after which disturbance levels would return to near baseline conditions), disturbance and displacement is not considered to be a significant potential impact requiring mitigation *Cormorant* No cormorant were recorded landing within the proposed development site during the winter bird survey in 2020/2021 or the breeding bird survey in 2020 or within the 300m buffer during the winter bird survey in 2020/2021, therefore there is no possibility to disturb/displace them.	<u>Disturbance and displacement impacts</u> No <u>Bird mortality as a result of Collision Risk Impacts</u> No	<u>Disturbance and displacement impacts</u> No <u>Bird mortality as a result of Collision Risk Impacts</u> No

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
	Bird mortality as a result of Collision Risk Impacts *Herring Gull* No - The winter bird survey in 2020/2021 results show 174 herring gull flight, with a peak flock count of 56 birds. Of the 174 flights over the proposed development site, 67.3% were recorded at collision risk height (20m). During the breeding birds survey in 2020 six herring gull flights were recorded, with a peak count of two birds, flying over the proposed development site. Gulls traversed the footprint of the proposed development more than other bird species recorded, as they regularly use inland sites. In Dublin, gulls navigate an urban environment with built structures daily. To put some context on their avoidance capabilities, in a different setting and for use in collision risk modelling for onshore wind turbines, an avoidance rate of 99.5% is applied for large gull species and an avoidance rate of 99.2% is applied for small gull species (Furness, 2019)[84], which essentially this means that 99.5% and 99.2% of gull flights, respectively, will avoid collision with a moving turbine. The risk of collision is even less with a static, clearly detectable building. It is, therefore, considered that the building will not pose a collision risk to herring gulls. *Cormorant* No – one single cormorant flight, consisting of a single individual bird recorded during the winter of 2020/2021 over the proposed development site. This flight was recorded at collision risk height (20m or below). During the breeding birds survey in 2020 only two cormorant flights, consisting of individual birds were recorded flying over the proposed development site. Given the infrequency of use		

[84] Furness, R.W. (2019) Avoidance rates of herring gull, great black-backed gull and common gull for use in the assessment of terrestrial wind farms in Scotland. Scottish Natural Heritage Research Report No. 1019.

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
	of the lands by the birds, it is, therefore, considered that the building will not pose a collision risk to cormorant.		
Fulmar [A009], Greylag Goose [A043], Lesser Black-backed Gull [A183], Kittiwake [A188], Guillemot [A199], Razorbill [A200], Puffin [A204] There is no site specific conservation objectives document available for this SPA. Therefore, the attributes, measures and targets below have been developed based on the specific conservation objectives available for Rogerstown Estuary SPA [004015]			
Population trend / Percentage change / Long term population trend stable or increasing Distribution / Range, timing and intensity of use of areas / No significant decrease in the range, timing and intensity of use of areas by all of the above named species, other than that occurring from natural patterns of variation	<u>Disturbance and displacement impacts</u> None of these SCI species were recorded within the proposed development site or within the 300m buffer, therefore there is no possibility to disturb/displace them. <u>Bird mortality as a result of Collision Risk Impacts</u> None of these SCI species were recorded flying over the proposed development site, therefore there is no risk of collision.	<u>Disturbance and displacement impacts</u> No <u>Bird mortality as a result of Collision Risk Impacts</u> No	<u>Disturbance and displacement impacts</u> No <u>Bird mortality as a result of Collision Risk Impacts</u> No

7.8.4 Mitigation Measures

250 As there is no potential for impacts to occur on the Lambay Island SPA as a result of the Proposed development, no mitigation measures are required.

7.8.5 Residual Impacts

251 The proposed development poses no risk of affecting the conservation objectives, or the favourable conservation condition, of the special conservation interest habitats of Lambay Island SPA, and there are therefore, no residual direct or indirect impacts associated with the proposed development that could adversely affect the integrity of Lambay Island SPA.

7.8.6 Conclusion of Assessment for Lambay Island SPA

252 Following an examination, analysis and evaluation in light of best scientific knowledge, of all relevant information in respect of the special conservation interests of Lambay Island SPA, the potential impacts, and whether or not the predicted impacts would affect the conservation objectives that support the conservation condition of the special conservation interests, it has been concluded that the proposed development does not pose a risk of adversely affecting (either directly or indirectly) the integrity of Lambay Island SPA.

7.9 Rogerstown Estuary SPA [004015]

7.9.1 Ecological Baseline Description for Rogerstown Estuary SPA

253 The Natura Standard Data Form[85], lists Rogerstown Estuary SPA as a relatively small estuarine system in north County Dublin. It has saltmarsh and sand dune habitat as well as agricultural fields which have ornithological and botanical interest. It has extensive sand and mud flats and supports wintering waterfowl. It supports an internationally important population of light-bellied brent goose and nationally important populations of a further 15 species. It is an important and regular site for a range of autumn passage migrants. Little tern has bred in Rogerstown Estuary in the past and there are populations of three Red Data Book plant species present. The main threats to the site include disposal of household/recreational facility waste, invasive species, disposal of industrial waste, fertilisation and landfill, land reclamation and drying out.

7.9.2 Special Conservation Interests and Conservation Objectives of Rogerstown Estuary SPA

254 The special conservation interests of Rogerstown Estuary SPA, and the overall conservation objective, are listed below in Table 22.

Table 22 Special Conservation Interests and Conservation Objectives of Rogerstown Estuary SPA

Special Conservation Interest(s)	Conservation Objective(s)
A043 Greylag Goose *Anser anser* A046 Light-bellied Brent Goose *Branta bernicla hrota* A048 Shelduck *Tadorna tadorna* A056 Shoveler *Anas clypeata* A130 Oystercatcher *Haematopus ostralegus* A137 Ringed Plover *Charadrius hiaticula* A141 Grey Plover *Pluvialis squatarola* A143 Knot *Calidris canutus* A149 Dunlin *Calidris alpina alpina* A156 Black-tailed Godwit *Limosa limosa* A162 Redshank *Tringa totanus* A999 Wetlands NPWS (2013) *Conservation Objectives: Rogerstown Estuary SPA 004015*. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.	To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA

255 In conjunction with considering the generic conservation objective for this SPA "To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA", the site specific conservation objectives document for Rogerstown Estuary SPA also informed this assessment.

256 The site specific conservation objectives document sets out the attributes, measures and targets that define the favourable conservation condition of the special conservation interests within the European site. Affecting the conservation condition of the special conservation interests is deemed to constitute an adverse effect on the integrity of a European site. The specific attributes and targets used to define the

[85] NPWS (2018) *Natura 2000 – Standard Data Form. Rogerstown Estuary SPA.* National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

conservation objectives of the special conservation interests of Rogerstown Estuary SPA are presented in Section 7.9.3, Table 23.

7.9.3 Examination and Analysis of Potential Direct and Indirect Impacts

257 The direct and/or indirect impacts by which the proposed development could (in the absence of mitigation measures) potentially affect the conservation objective attributes and targets supporting the conservation condition of the special conservation interests of Rogerstown Estuary SPA, are:

- Habitat loss and fragmentation
- Disturbance and displacement impacts
- Bird mortality as a result of Collision Risk Impacts

7.9.3.1 Habitat loss and fragmentation

258 As the proposed development will not result in habitat loss or habitat fragmentation within any European site or any supporting ex-situ site associated with SPA populations of SCI birds, there is no potential for any in combination effects to occur in that regard

7.9.3.2 Disturbance and displacement impacts

259 A short-term and/or permanent increases in noise, vibration and/or human activity levels during the construction and/or operation of the proposed development could result in the disturbance to and/or displacement of SCI bird species present within footprint and/or the vicinity of the proposed development. Such disturbance effects would not be expected to extend beyond a distance of *c.* 300m, as noise levels associated with general construction activities would attenuate to close to background levels at that distance and beyond.

260 Rogerstown Estuary SPA is designated for wintering SCI species that are known to forage at inland sites across Dublin, such as amenity grassland habitats like those present within the southern section of proposed development site (*i.e.* light-bellied brent goose, oystercatcher, dunlin and redshank). Within 300m of the proposed development site there are further suitable foraging and roosting habitats like the amenity grassland in the surrounding golf course at Deer Park and the intertidal habitats at Claremont Strand. These species include light-bellied brent goose, oystercatcher, dunlin and redshank. There are areas of suitable foraging habitat for these species within the footprint of, and within 300m, of the proposed development at Claremont Strand.

261 As records of SCI bird species associated with Rogerstown Estuary SPA have been returned from the desk study in the vicinity of the proposed development (*i.e.* light-bellied brent goose, oystercatcher, dunlin and redshank) and were recorded within the proposed development site during the winter bird survey in 2019-2020 and 2020-2021, it is considered to be possible that SCI species associated Rogerstown Estuary SPA currently utilise the amenity grassland habitat in the proposed development site and other suitable lands in the wider area. However, there is no potential for impacts to occur on any populations of SCI bird species associated with Rogerstown Estuary SPA, in light of their conservation objectives, as a consequence of the disturbance and/or displacement from inland feeding/roosting sites due to increased levels of disturbance for the following reasons:

- The relatively low peak counts recorded on lands located within the footprint and 300m buffer of the proposed development, especially when compared to 1% of both their international flyway and national populations, and the mean peak flock of light-bellied brent goose recorded in the nearest SPA, showing that these sites are not important in supporting the overall SPA population of light-bellied brent goose , and SCI birds are likely to use other suitable sites available in the wider area on a similar or more regular basis;
- The relatively low frequency of occurrence of these SCI bird species on lands located within the footprint and 300m buffer of the proposed development, shows that these species do not regularly

use or rely upon these lands as foraging and/or roosting habitat, and are likely to use other suitable sites available in the wider area on a similar or more regular basis;

- The availability of large areas of alternative suitable foraging and/or roosting habitat for these SCI bird species in the wider locality of the proposed development, including those in closer proximity to Baldoyle Bay, and similar parkland, golf courses and extensive areas of agricultural land; and,
- Impacts associated with increased levels of disturbance will likely result in the short-term displacement of these SCI species to other suitable available lands in the locality, for a maximum of 18 months during construction works, and only over the winter period. Following the completion of construction, disturbance levels will likely return to baseline conditions and as a result these lands will become available again as foraging and/or roosting habitat for these SCI species. Therefore, this potential impact will be short-term in nature.
- During the operational phase of the proposed development, an increase in human presence at Claremont beach has the potential to disturb wintering SCI species, given SCI species peak counts were below the 1% national population, the operational phase will not adversely impact the population trends or distribution of SCI species. Additionally, the western side of Deer Park golf course is private land and closed to the public, therefore removing potential for increased human presence to disturb SCI flocks here.

7.9.3.3 Bird mortality as a result of Collision Risk Impacts

262 Considering the proposed development's coastal location, adjacent to Baldoyle Bay, there is potential for the proposed development to present a collision risk to mobile SCI species which may fly over the proposed development lands to reach inland foraging sites.

263 Birds are mobile species and can travel up to 20km from designated sites.[86] As such collision risk impacts resulting in bird mortality occurring at a sufficient magnitude, has the potential to affect birds that occur in the receiving environment (either alone or in combination with other disturbance and displacement pressures) to an extent that undermines the conservation objectives Rogerstown Estuary SPA.

264 The survey results show one single light-bellied brent goose flight, consisting of a single individual bird was recorded during the winter of 2020/2021 over the proposed development site. This flight was recorded at collision risk height. Light-bellied brent geese avoidance rate is applied at 99.8% (SNH, 2018)[87] for avoidance of collision with a moving turbine. The risk of collision is even less with a static, clearly detectable building. It is, therefore, considered that the building will not pose a collision risk to light-bellied brent geese that would have any population level effects.

265 The survey results show six oystercatcher flights over the proposed development site, with a peak flock count of 12 birds, which is <1% of the SPA population. All flights occurred at collision risk height (20m or below). Given the low numbers of SPA birds and the infrequency of use of the lands by the birds, it is, therefore, considered that the building will not pose a collision risk to oystercatcher that would have any population level effects.

266 Additionally, the proposed buildings consist of glazing, broken up with intermittent stone and brick cladding with louvre panelling and metal balustrade over sections of external glazing. Although the presence of the proposed development may alter their flight patterns slightly to avoid the proposed building structure, the building will not pose a collision risk to light-bellied brent geese that would have any population level effects.

[86] Scottish Natural Heritage (2016) Guidance: Assessing connectivity with Special Protection Areas (SPAs). Version 3

[87] Scottish Natural Heritage (SNH). (2018) Avoidance Rates for the onshore SNH Wind Farm Collision Risk Model. September 2018 v2.

7.9.3.4 Summary

267 Table 23 below presents a summary of the potential impacts of the proposed development on the special conservation interests of Rogerstown Estuary SPA, and how these impacts relate to affecting the site's conservation objectives.

Table 23 Potential Impacts/Effects on the Conservation Objectives of Rogerstown Estuary SPA

Conservation Objectives Attribute/Measure/Target	**Potential Impacts Requiring Mitigation?**	**Are mitigation measures required?**	**Residual Impacts?**
Rogerstown Estuary SPA			
Light-bellied Brent Goose (*Branta bernicla hrota*) [A046], Oystercatcher (*Haematopus ostralegus*) [A130], Dunlin (*Calidris alpina alpina*) [A149] and Redshank (*Tringa tetanus*) [A162] To restore the favourable conservation condition of the special conservation interests of the SPA, which is defined as follows:			
Population trend / Percentage change / Long term population trend stable or increasing Distribution / Range, timing and intensity of use of areas / No significant decrease in the range, timing and intensity of use of areas by all of the above named species, other than that occurring from natural patterns of variation	<u>Disturbance and displacement impacts</u> *Light-bellied brent goose* No – Rogerstown Estuary SPA mean peak flock count for light-bellied brent goose populations is 1,069 birds[88]. A peak flock count of 65 light-bellied brent geese were recorded within the 300m buffer of the proposed development site. This is >6% of the SPA population and <1% of the national and international populations of light-bellied brent geese. Light-bellied brent geese were recorded on three of the eleven survey days in the winter of 2019/2020 and three of the nine survey days in the winter of 2020/2021 within the 300m buffer of the proposed development site. Given the low numbers of SPA birds, the infrequency of use of the lands by the birds, the availability of suitable inland feeding habitat in the surrounding lands and the short-term nature of the impact (limited to the construction phase only, after which disturbance levels would return to near baseline conditions), disturbance and displacement is not considered to be a significant potential impact requiring mitigation.	<u>Disturbance and displacement impacts</u> No <u>Bird mortality as a result of Collision Risk Impacts</u> No	<u>Disturbance and displacement impacts</u> No <u>Bird mortality as a result of Collision Risk Impacts</u> No

[88] NPWS (2013) Rogerstown Estuary Special Protection Area Conservation Objectives Supporting Document Version 1.

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
	Oystercatcher No – Rogerstown Estuary SPA mean peak flock count for oystercatcher populations is 1,345 birds. A peak flock count of 42 were recorded within the 300m buffer of the proposed development site. This is >2% of the SPA population and <1% of the national and international populations of oystercatcher. Oystercatcher were recorded on six of the eleven survey days in the winter of 2019/2020 and seven of the nine survey days in the winter of 2020/2021 within the 300m buffer of the proposed development site. Given the low numbers of SPA birds, the availability of suitable inland feeding habitat in the surrounding lands and the short-term nature of the impact (limited to the construction phase only, after which disturbance levels would return to near baseline conditions), disturbance and displacement is not considered to be a significant potential impact requiring mitigation. *Dunlin* No – Rogerstown Estuary SPA mean peak flock count for dunlin populations is 22,745 birds. A peak flock count of 35 were recorded within the 300m buffer of the proposed development site. This is >1% of the SPA population and <1% of the national and international populations of oystercatcher. Dunlin were not recorded once in the eleven survey days in the winter of 2019/2020 and were only recorded once in the nine survey days in the winter of 2020/2021 within the 300m buffer of the proposed development site. Given the low numbers of SPA birds, the infrequency of use of the lands by the birds, the availability of suitable inland feeding habitat in the surrounding lands and the short-term nature of the impact (limited to the construction phase only, after which disturbance levels would return to near baseline conditions), disturbance and displacement is not considered to be a significant potential impact requiring mitigation.		

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
	Redshank No – Rogerstown Estuary SPA mean peak flock count for redshank populations is 490 birds. A peak flock count of 2 were recorded within the 300m buffer of the proposed development site. This is <1% of the SPA population and <1% of the national and international populations of redshank. Redshank were recorded on six of the eleven survey days in the winter of 2019/2020 and two of the nine survey days in the winter of 2020/2021 within the 300m buffer of the proposed development site. Given the low numbers of SPA birds, the infrequency of use of the lands by the birds, the availability of suitable inland feeding habitat in the surrounding lands and the short-term nature of the impact (limited to the construction phase only, after which disturbance levels would return to near baseline conditions), disturbance and displacement is not considered to be a significant potential impact requiring mitigation. <u>Bird mortality as a result of Collision Risk Impacts</u> *Light-bellied brent goose* No – one single light-bellied brent goose flight, consisting of a single individual bird was recorded during the winter of 2020/2021 over the proposed development site. This flight was recorded at collision risk height. Light-bellied brent geese avoidance rate is applied at 99.8% (SNH, 2018)[89] for avoidance of collision with a moving turbine. The risk of collision is even less with a static, clearly detectable building. It is, therefore, considered that the building will not pose a collision risk to light-bellied brent geese.		

[89] Scottish Natural Heritage (SNH). (2018) Avoidance Rates for the onshore SNH Wind Farm Collision Risk Model. September 2018 v2.

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
	Oystercatcher No - The survey results show six oystercatcher flights over the proposed development site, with a peak flock count of 12 birds, which is <1% of the SPA population. All flights occurred at collision risk height (20m or below). Given the low numbers of SPA birds and the infrequency of use of the lands by the birds, it is, therefore, considered that the building will not pose a collision risk to oystercatcher. *Redshank and Dunlin* Neither of these SCI species were recorded flying over the proposed development site, therefore there is no risk of collision.		
Greylag Goose [A043], Shelduck (*Tadorna tadorna*) [A048], Shoveler (*Anas clypeata*) [A056], Ringed Plover (*Charadrius hiaticula*) [A137], Grey Plover (*Pluvialis squatarola*) [A141], Knot (*Calidris canutus*) [A143] and Black-tailed Godwit (*Limosa limosa*) [A156] To restore the favourable conservation condition of the special conservation interests of the SPA, which is defined as follows:			
Population trend / Percentage change / Long term population trend stable or increasing Distribution / Range, timing and intensity of use of areas / No significant decrease in the range, timing and intensity of use of areas by all of the above named species, other than that occurring from natural patterns of variation	<u>Disturbance and displacement impacts</u> None of these SCI species were recorded within the proposed development site or within the 300m buffer, therefore there is no possibility to disturb/displace them. <u>Bird mortality as a result of Collision Risk Impacts</u> None of these SCI species were recorded flying over the proposed development site, therefore there is no risk of collision.	<u>Disturbance and displacement impacts</u> No <u>Bird mortality as a result of Collision Risk Impacts</u> No	<u>Disturbance and displacement impacts</u> No <u>Bird mortality as a result of Collision Risk Impacts</u> No
Wetlands [A999] To maintain the favourable conservation condition of wetland habitats within the SPA, which is defined as follows:			

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
Habitat area / Hectares / The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 646ha, other than that occurring from natural patterns of variation	No There is no potential for impacts to occur that could potentially affect the quality the of intertidal/coastal habitats that support the special conservation interest bird species of the SPA.	No	No

7.9.4 Mitigation Measures

268 As there is no potential for impacts to occur on the Rogerstown Estuary SPA as a result of the Proposed development, no mitigation measures are required.

7.9.5 Residual Impacts

269 The proposed development poses no risk of affecting the conservation objectives, or the favourable conservation condition, of the special conservation interest habitats of Rogerstown Estuary SPA, and there are therefore, no residual direct or indirect impacts associated with the proposed development that could adversely affect the integrity of Rogerstown Estuary SPA.

7.9.6 Conclusion of Assessment for Rogerstown Estuary SPA

270 Following an examination, analysis and evaluation in light of best scientific knowledge, of all relevant information in respect of the special conservation interests of Rogerstown Estuary SPA, the potential impacts, and whether or not the predicted impacts would affect the conservation objectives that support the conservation condition of the special conservation interests, it has been concluded that the proposed development does not pose a risk of adversely affecting (either directly or indirectly) the integrity of Rogerstown Estuary SPA.

7.10 Skerries Islands SPA [004122]

7.10.1 Ecological Baseline Description for Skerries Islands SPA

271 The Natura Standard Data Form[90], lists Skerries Islands SPA as a group of three small, uninhabited islands between *c.* 0.5 and 1.5km off the north Dublin coastline. Habitats on the islands include low cliffs, rocky shores, sandflats and a shingle bar. Vegetation of the islands is dominated by rank grasses and brambles. The site has nationally important breeding colonies of cormorant, shag, herring gull and greater black-backed gull. In winter, the site is visited by a good diversity of waterfowl. It supports an internationally important population of light-bellied brent goose and nationally important populations of cormorant, purple sandpiper and turnstone.

7.10.2 Special Conservation Interests and Conservation Objectives of Skerries Islands SPA

272 The special conservation interests of Skerries Islands SPA, and the overall conservation objective, are listed below in Table 24.

Table 24 Special Conservation Interests and Conservation Objectives of Skerries Islands SPA

Special Conservation Interest(s)	Conservation Objective(s)
A017 Cormorant *Phalacrocorax carbo* A018 Shag *Phalacrocorax aristotelis* A046 Light-bellied Brent Goose *Branta bernicla hrota* A148 Purple Sandpiper *Calidris maritima* A169 Turnstone *Arenaria interpres* A184 Herring Gull *Larus argentatus* NPWS (2021) *Conservation objectives for Skerries Islands SPA [004122].* Generic Version 8.0. Department of Culture, Heritage and the Gaeltacht.	To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA

273 A site-specific conservation objectives document is not currently available for Skerries Islands SPA. However, in conjunction with considering the generic conservation objective to "To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA", a set of site specific conservation objectives has been compiled for the SCIs of Skerries Islands SPA and used to inform this assessment, based on site specific conservation objectives documents available for other European sites with equivalent SCI species. As a precautionary approach, "restore" is used to define the conservation objective in this assessment. This sets out the attributes, measures and targets that would be expected to define the favourable conservation condition of SCI bird species within Skerries Islands SPA.

7.10.3 Examination and Analysis of Potential Direct and Indirect Impacts

274 The direct and/or indirect impacts by which the proposed development could (in the absence of mitigation measures) potentially affect the conservation objective attributes and targets supporting the conservation condition of the special conservation interests of Skerries Islands SPA, are:

- Disturbance and displacement impacts
- Bird mortality as a result of Collision Risk Impacts

[90] NPWS (2018) *Natura 2000 – Standard Data Form. Skerries Islands SPA.* National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

7.10.3.1 Disturbance and displacement impacts

275 A short-term and/or permanent increases in noise, vibration and/or human activity levels during the construction and/or operation of the proposed development could result in the disturbance to and/or displacement of SCI bird species present within footprint and/or the vicinity of the proposed development. Such disturbance effects would not be expected to extend beyond a distance of *c.* 300m, as noise levels associated with general construction activities would attenuate to close to background levels at that distance and beyond.

276 Skerries Islands SPA is designated for both wintering and breeding SCI species that are known to forage at inland sites across Dublin, such as amenity grassland habitats like those present within the southern section of proposed development site (*i.e.* herring gull and cormorant). Within 300m of the proposed development site there are further suitable foraging and roosting habitats like the amenity grassland in the surrounding golf course at Deer Park and the intertidal habitats at Claremont Strand. These species include herring gull and cormorant. There are areas of suitable foraging habitat for these species within the footprint of, and within 300m, of the proposed development at Claremont Strand.

277 As records of SCI bird species associated with Skerries Islands SPA have been returned from the desk study in the vicinity of the proposed development (*i.e.* herring gull and cormorant) and were recorded flying over the proposed development site during both the breeding birds surveys in 2020 and the winter bird survey in 2019-2020 and 2020-2021, it is considered to be possible that SCI species associated Skerries Islands SPA currently utilise the amenity grassland habitat in the proposed development site and other suitable lands in the wider area. However, there is no potential for impacts to occur on any populations of SCI bird species associated with Skerries Islands SPA, in light of their conservation objectives, as a consequence of the disturbance and/or displacement from inland feeding/roosting sites due to increased levels of disturbance for the following reasons:

- No herring gull or cormorant were recorded landing within the footprint of the proposed development site during either the breeding birds surveys in 2020 or during the winter birds surveys in 2019/2020 or 2020/2021, showing that the proposed development site is not important in supporting the overall SPA population of either wintering or breeding SCI populations of herring gull or cormorant;
- The availability of large areas of alternative suitable foraging and/or roosting habitat for these SCI bird species in the wider locality of the proposed development, including those in closer proximity to Baldoyle Bay, and similar parkland, golf courses and extensive areas of agricultural land; and,
- Impacts associated with increased levels of disturbance will likely result in the short-term displacement of these SCI species to other suitable available lands in the locality, for a maximum of 18 months during construction works, and only over the winter period. Following the completion of construction, disturbance levels will likely return to baseline conditions and as a result these lands will become available again as foraging and/or roosting habitat for these SCI species. Therefore, this potential impact will be short-term in nature.
- During the operational phase of the proposed development, an increase in human presence at Claremont beach has the potential to disturb wintering SCI species, given SCI species peak counts were below the 1% national population, the operational phase will not adversely impact the population trends or distribution of SCI species. Additionally, the western side of Deer Park golf course is private land and closed to the public, therefore removing potential for increased human presence to disturb SCI flocks here.

7.10.3.2 Bird mortality as a result of Collision Risk Impacts

278 Considering the proposed development's coastal location, adjacent to Baldoyle Bay, there is potential for the proposed development to present a collision risk to mobile SCI species which may fly over the proposed development lands to reach inland foraging sites.

279 Birds are mobile species and can travel up to 20km from designated sites.[91] As such collision risk impacts resulting in bird mortality occurring at a sufficient magnitude, has the potential to affect birds that occur in the receiving environment (either alone or in combination with other disturbance and displacement pressures) to an extent that undermines the conservation objectives Skerries Islands SPA.

280 The winter birds survey results show one single cormorant flight, consisting of a single individual bird recorded during the winter of 2020/2021 over the proposed development site. This flight was recorded at collision risk height (20m or below). The breeding birds surveys recorded only two flights consisting of individual cormorants in June 2020. Given the infrequency of use of the lands by the birds, it is, therefore, considered that the building will not pose a collision risk to cormorant.

281 The winter birds survey results show 174 herring gull flight, with a peak flock count of 56 birds, which is >29% of the SPA population. Of the 174 flights over the proposed development site, 67.3% were recorded at collision risk height (20m). The breeding birds surveys recorded six flights, four flights of individual birds, and two flights consisting of a pair in June 2020. Gulls traversed the footprint of the proposed development more than other bird species recorded in the winter 2020/2021 birds surveys, as they regularly use inland sites. In Dublin, gulls navigate an urban environment with built structures daily. To put some context on their avoidance capabilities, in a different setting and for use in collision risk modelling for onshore wind turbines, an avoidance rate of 99.5% is applied for large gull species and an avoidance rate of 99.2% is applied for small gull species (Furness, 2019)[92], which essentially this means that 99.5% and 99.2% of gull flights, respectively, will avoid collision with a moving turbine. The risk of collision is even less with a static, clearly detectable building. It is, therefore, considered that the building will not pose a collision risk to herring gulls that would have any population level effects.

282 The proposed buildings consist of glazing, broken up with intermittent stone and brick cladding with louvre panelling and metal balustrade over sections of external glazing. Although the presence of the proposed development may alter their flight patterns slightly to avoid the proposed building structure, the building will not pose a collision risk to light-bellied brent geese that would have any population level effects.

7.10.3.3 Summary

283 Table 25Table 7 below presents a summary of the potential impacts of the proposed development on the special conservation interests of Skerries Islands SPA, and how these impacts relate to affecting the site's conservation objectives.

[91] Scottish Natural Heritage (2016) Guidance: Assessing connectivity with Special Protection Areas (SPAs). Version 3

[92] Furness, R.W. (2019) Avoidance rates of herring gull, great black-backed gull and common gull for use in the assessment of terrestrial wind farms in Scotland. Scottish Natural Heritage Research Report No. 1019.

Table 25 Potential Impacts/Effects on the Conservation Objectives of Skerries Islands SPA

Conservation Objectives Attribute/Measure/Target	**Potential Impacts Requiring Mitigation?**	**Are mitigation measures required?**	**Residual Impacts?**
Skerries Islands SPA			
Cormorant (*Phalacrocorax* carbo) [A017], Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] and Herring Gull (*Larus argentatus*) [A184] There is no site specific conservation objectives document available for this SPA. Therefore, the attributes, measures and targets below have been developed based on the specific conservation objectives available for Rogerstown Estuary SPA [004015]			
Population trend / Percentage change / Long term population trend stable or increasing Distribution / Range, timing and intensity of use of areas / No significant decrease in the range, timing and intensity of use of areas by all of the above named species, other than that occurring from natural patterns of variation	<u>Disturbance and displacement impacts</u> *Herring gull* No – A peak flock count of 596 herring gull were recorded within the 300m buffer of the proposed development site during the winter bird survey in 2020/2021. This is significantly lower than the 1% international populations of herring gull. Herring gull were recorded consistently throughout both the winter of 2019/2020 and the winter of 2020/2021 within the 300m buffer of the proposed development site. During the breeding birds survey in 2020 no herring gull were recorded landing within the proposed development site. Given the availability of suitable inland feeding habitat in the surrounding lands and the short-term nature of the impact (limited to the construction phase only, after which disturbance levels would return to near baseline conditions), disturbance and displacement is not considered to be a significant potential impact requiring mitigation *Cormorant* No cormorant were recorded landing within the proposed development site during the winter bird survey in 2020/2021 or the breeding bird survey in 2020 or within the 300m buffer during the winter bird survey in 2020/2021, therefore there is no possibility to disturb/displace them.	<u>Disturbance and displacement impacts</u> No <u>Bird mortality as a result of Collision Risk Impacts</u> No	<u>Disturbance and displacement impacts</u> No <u>Bird mortality as a result of Collision Risk Impacts</u> No

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
	Bird mortality as a result of Collision Risk Impacts *Herring Gull* No - The winter bird survey in 2020/2021 survey results show 174 herring gull flight, with a peak flock count of 56 birds. Of the 174 flights over the proposed development site, 67.3% were recorded at collision risk height (20m). During the breeding birds survey in 2020 six herring gull flights were recorded, with a peak count of two birds, flying over the proposed development site. Gulls traversed the footprint of the proposed development more than other bird species recorded, as they regularly use inland sites. In Dublin, gulls navigate an urban environment with built structures daily. To put some context on their avoidance capabilities, in a different setting and for use in collision risk modelling for onshore wind turbines, an avoidance rate of 99.5% is applied for large gull species and an avoidance rate of 99.2% is applied for small gull species (Furness, 2019)[93], which essentially this means that 99.5% and 99.2% of gull flights, respectively, will avoid collision with a moving turbine. The risk of collision is even less with a static, clearly detectable building. It is, therefore, considered that the building will not pose a collision risk to herring gulls. *Cormorant* No –one single cormorant flight, consisting of a single individual bird recorded during the winter of 2020/2021 over the proposed development site. This flight was recorded at collision risk height (20m or below). During the breeding birds survey in 2020 only two cormorant flights, consisting of individual birds were recorded flying over the proposed development site.		

[93] Furness, R.W. (2019) Avoidance rates of herring gull, great black-backed gull and common gull for use in the assessment of terrestrial wind farms in Scotland. Scottish Natural Heritage Research Report No. 1019.

Conservation Objectives Attribute/Measure/Target	Potential Impacts Requiring Mitigation?	Are mitigation measures required?	Residual Impacts?
	Given the infrequency of use of the lands by the birds, it is, therefore, considered that the building will not pose a collision risk to cormorant.		
Shag *Phalacrocorax* aristotelis) [A018], Purple Sandpiper (*Calidris maritima*) [A148] and Turnstone (*Arenaria interpres*) [A169] There is no site specific conservation objectives document available for this SPA. Therefore, the attributes, measures and targets below have been developed based on the specific conservation objectives available for Rogerstown Estuary SPA [004015]			
Population trend / Percentage change / Long term population trend stable or increasing Distribution / Range, timing and intensity of use of areas / No significant decrease in the range, timing and intensity of use of areas by all of the above named species, other than that occurring from natural patterns of variation	<u>Disturbance and displacement impacts</u> None of these SCI species were recorded within the proposed development site or within the 300m buffer, therefore there is no possibility to disturb/displace them. <u>Bird mortality as a result of Collision Risk Impacts</u> None of these SCI species were recorded flying over the proposed development site, therefore there is no risk of collision.	<u>Disturbance and displacement impacts</u> No <u>Bird mortality as a result of Collision Risk Impacts</u> No	<u>Disturbance and displacement impacts</u> No <u>Bird mortality as a result of Collision Risk Impacts</u> No

7.10.4 Mitigation Measures

284 As there is no potential for impacts to occur on the Skerries Islands SPA as a result of the Proposed development, no mitigation measures are required.

7.10.5 Residual Impacts

285 The proposed development poses no risk of affecting the conservation objectives, or the favourable conservation condition, of the special conservation interest habitats of Skerries Islands SPA, and there are therefore, no residual direct or indirect impacts associated with the proposed development that could adversely affect the integrity of Skerries Islands SPA.

7.10.6 Conclusion of Assessment for Skerries Islands SPA

286 Following an examination, analysis and evaluation in light of best scientific knowledge, of all relevant information in respect of the special conservation interests of Skerries Islands SPA, the potential impacts, and whether or not the predicted impacts would affect the conservation objectives that support the conservation condition of the special conservation interests, it has been concluded that the proposed development does not pose a risk of adversely affecting (either directly or indirectly) the integrity of Skerries Islands SPA.

8 In Combination Assessment

8.1 Analysis of Potential In Combination Effects

287 This section of the report presents the assessment carried out to examine whether any other plans or projects have the potential to act in combination with the proposed development to adversely affect the integrity of Baldoyle Bay Sac, Howth Head SAC, Baldoyle Bay SPA, North Bull Island SPA, Ireland's Eye SPA, Malahide Estuary SPA, South Dublin Bay and River Tolka Estuary SPA, Lambay Island SPA, Rogerstown Estuary SPA and Skerries Islands SPA. All other European sites fall beyond the zone of influence of the proposed development. Therefore, there is no potential for any other plans or projects to act in combination with the proposed development to adversely affect the integrity of any other European sites.

288 As assessed in Section 7, none of the potential impacts associated with the proposed development will result in any perceptible residual effect on the receiving environment or on the qualifying interests/special conservation interests of Baldoyle Bay Sac, Howth Head SAC, Baldoyle Bay SPA, North Bull Island SPA, Ireland's Eye SPA, Malahide Estuary SPA, South Dublin Bay and River Tolka Estuary SPA, Lambay Island SPA, Rogerstown Estuary SPA and Skerries Islands SPA. Therefore, there will not be any residual impacts associated with the proposed development that will adversely affect the conservation objectives supporting the conservation condition of the qualifying interests/special conservation interests of those European sites, and the proposed development in isolation will not adversely affect the integrity of those European site.

289 Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location. The following development types are included in considering cumulative effects (additionally, see section 6.5):

- Existing projects (under construction or operational)
- Projects which have been granted consent but not yet started
- Projects for which consent has been applied for which are awaiting a decision, including those under appeal
- Projects proposed at a plan level, if relevant (e.g. future strategic infrastructure such as roads or greenways)

290 There is the potential for other pollution sources within the Liffey and Dublin Bay WFD catchment and any other catchments that also drain to Baldoyle Bay to cumulatively affect water quality in the receiving estuarine and marine environments. The potential for in combination effects to arise in Baldoyle Bay from any existing or proposed land use plans or developments is regulated and controlled by the environmental protective policies and objectives of the Fingal Development Plan 2017-2023. Any existing/proposed plan or project that could potentially affect Baldoyle Bay SAC/ SPA, or any other European site, in combination with the proposed development, must adhere to these overarching environmental protective policies and objectives. These policies and objectives will ensure the protection of the European site within the zone of influence of the proposed development, and include the requirement for any future plans or projects to undergo Screening for Appropriate Assessment and/or Appropriate Assessment to examine and assess their effects on European sites, alone and in combination with other plans and projects.

291 Habitat loss associated with the proposed development has no potential, either alone or cumulatively with any other plans or projects such as those discussed in section 6.5 above, to affect the SCI populations of any SPA species' populations or distribution as the site is used infrequently by low numbers of birds and due to the availability of an abundance of alternative suitable habitat in the locality, see Figure 9 above, for the recorded SCI listed species.

292 Disturbance and displacement effects associated with the proposed development has no potential, either alone or cumulatively with any other plans or projects such as those discussed in section 6.5 above, to affect the SCI populations of any SPA species' populations or distribution as disturbance and displacement

effects are short-term in nature – during the 18-24 months of construction, and only effecting wintering birds during winter months.

293 There are specific objectives and policies in the Fingal Development Plan 2017-2023 to protect biodiversity, and specifically European sites. Objectives NH10, NH11, NH15, WQ04, and WT02 relate to the protection of European sites, AA and commitments to not permitting projects giving rise to adverse effects on the integrity of European sites without demonstrating there are no alternatives, there are imperative reasons of overriding public interest, and undertaking all compensation measures necessary to ensure the overall coherence of the network of European sites. The Fingal Development Plan 2017-2023 also includes objectives to protect (from risk of pollution), manage and enhance the counties' surface water and groundwater resources (SW04, WQ01, WQ04, WT01 and WT02).

294 The environmental protective policies and objectives set out in the Fingal Development Plan 2017-2023 are mirrored in the Fingal Biodiversity Action Plan 2010 - 2015 in terms of the protection of European sites.

295 Land use plans for the other local authorities (e.g. Meath County Council, Monaghan County Council and Cavan County Council) whose functional areas include surface water features which drain to Baldoyle Bay, were examined and analysed and those land use plans also include protective environmental policies to protect European sites and the receiving surface water environments.

8.2 Conclusion of In Combination Assessment

296 As the proposed development itself will not have any effects on the conservation objectives of any European sites, and considering the protective environmental policies and objectives in the Fingal Development Plan 2017-2023 and more widely across all of the other land use plans that seek to protect surface water quality in the catchments that drain to Baldoyle Bay, there is no potential for any other plan or project to adversely affect the integrity of any European sites in combination with the proposed development.

9 NIS Conclusion

297 This NIS has examined and analysed, in light of the best scientific knowledge, with respect to those European sites within the zone of influence of the proposed development, the potential impact sources and pathways, how these could impact on the sites' special conservation interest species and whether the predicted impacts would adversely affect the integrity of Baldoyle Bay Sac, Howth Head SAC, Baldoyle Bay SPA, North Bull Island SPA, Ireland's Eye SPA, Malahide Estuary SPA, South Dublin Bay and River Tolka Estuary SPA, Lambay Island SPA, Rogerstown Estuary SPA and Skerries Islands SPA. There are no other European sites at risk of effects from the proposed development.

298 It has been objectively concluded by Scott Cawley Ltd., following an examination, analysis and evaluation of the relevant information, including in particular the nature of the predicted impacts from the proposed development, that the proposed development will not adversely affect (either directly or indirectly) the integrity of any European site, either alone or in combination with other plans or projects.

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Appendix I

Scientific and Technical Competence Relied Upon

Caroline Kelly is a Senior Ecologist at Scott Cawley Ltd. with over 5 years' professional ecological consultancy experience in preparing ecological reports and assessments for inclusion in planning applications. She holds an honours degree in Environmental Biology, from University College Dublin (UCD), and a Masters in Ecological Assessment from University College Cork (UCC). Caroline has experience in habitat survey and assessment (including Annex I habitats and legally protected sites) in a range of terrestrial, freshwater and coastal environments. She is also experienced in surveys for protected species (e.g. bats, badger and otter), bird surveys (both breeding and overwintering) and surveys for invasive species. Whilst working at Scott Cawley Caroline has managed ecological assessments for a wide range of projects including tourism, recreational, industrial, commercial, residential, transport and renewable energy developments.

Andrew Speer is a Technical Director at Scott Cawley Ltd. with over 14 years' professional ecological consultancy experience in ecological impact assessment. Andrew is a Full Member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and holds an honours degree in Zoology from NUI Galway, a Postgraduate Diploma in Geographic Information Systems (GIS) from the University of Ulster and an Advanced Diploma in Planning and Environmental Law from Kings Inns. He has extensive experience in the Appropriate Assessment (AA) process and has been the lead author for the preparation of numerous Screening for Appropriate Assessment Reports, Natura Impact Statements (NISs) and Natura Impact Reports (NIRs). Andrew also provides technical review and due diligence of Appropriate Assessment documentation for public and local authorities to aid their decision-making process as well as peer review of AA documentation prior to lodgement of planning applications.

Appendix II

Planning polices/objectives relating to the protection of European sites and water quality

Eastern & Midland Regional Assembly, Regional Spatial & Economic Strategy 2019-2031
Regional Policy Objective 3.4 Ensure that all plans, projects and activities requiring consent arising from the Regional Spatial and Economic Strategy are subject to the relevant environmental assessment requirements including SEA, EIA and AA as appropriate. In addition the future strategic development of settlements throughout the Region will have full cognisance of the legal requirements pertaining to sites of International Nature Conservation Interest. **Regional Policy Objective 7.2** To achieve and maintain 'Good Environmental Status' for marine waters and to ensure the sustainable use of shared marine resources in the Region, and to promote the development of a cross-boundary and cross-border strategic management and stakeholder engagement framework to protect the marine environment. **Regional Policy Objective 7.10** Support the implementation of the Water Framework Directive in achieving and maintaining at least good environmental status for all water bodies in the Region and to ensure alignment between the core objectives of the Water Framework Directive and other relevant Directives, River Basin Management plans and local authority land use plans. **Regional Policy Objective 7.11** For water bodies with 'high ecological status' objectives in the Region, local authorities shall incorporate measures for both their continued protection and to restore those water bodies that have fallen below high ecological status and areas 'At Risk' into the development of local planning policy and decision making any measures for the continued protection of areas with high ecological status in the Region and for mitigation of threats to waterbodies identified as 'At Risk' as part of a catchment based approach in consultation with the relevant agencies. This shall include recognition of the need to deliver efficient wastewater facilities with sufficient capacity and thus contribute to improved water quality in the Region. **Regional Policy Objective 7.12** Future statutory land use plans shall include Strategic Flood Risk Assessment (SFRA) and seek to avoid inappropriate land use zonings and development in areas at risk of flooding and to integrate sustainable water management solutions (such as SuDS, nonporous surfacing and green roofs) to create safe places in accordance with the Planning System and Flood Risk Assessment Guidelines for Local Authorities. **Regional Policy Objective 7.15** Local authorities shall take opportunities to enhance biodiversity and amenities and to ensure the protection of environmentally sensitive sites and habitats, including where flood risk management measures are planned. **Regional Policy Objective 7.16** Support the implementation of the Habitats Directives in achieving an improvement in the conservation status of protected species and habitats in the Region and to ensure alignment between the core objectives of the EU Birds and Habitats Directives and local authority development plans. **Regional Policy Objective 7.22** Local authority development plan and local area plans, shall identify, protect, enhance, provide and manage Green Infrastructure in an integrated and coherent manner and should also have regard to the required targets in relation to the conservation of European sites, other nature conservation sites, ecological networks and protected species. **Regional Policy Objective 10.6** Delivery and phasing of services shall be subject to the required appraisal, planning and environmental assessment processes and shall avoid adverse impacts on the integrity of the Natura 2000 network. **Regional Policy Objective 10.7** Local authority core strategies shall demonstrate compliance with DHPLG Water Services Guidelines for local authorities and demonstrate phased infrastructure – led growth that is commensurate with the carrying

capacity of water services and prevent adverse impacts on the integrity of water dependent habitats and species within the Natura 2000 network.

Regional Policy Objective 10.10

Support Irish Water and the relevant local authorities in the Region to eliminate untreated discharges from settlements in the short term, while planning strategically for long term growth in tandem with Project Ireland 2040 and in increasing compliance with the requirements of the Urban Waste Water Treatment Directive from 39% today to 90% by the end of 2021, to 99% by 2027 and to 100% by 2040.

Regional Policy Objective 10.11

EMRA supports the delivery of the waste water infrastructure set out in Table 10.2, subject to appropriate environmental assessment and the planning process.[94]

Regional Policy Objective 10.12

Development plans shall support strategic wastewater treatment infrastructure investment and provide for the separation of foul and surface water networks to accommodate the future growth of the Region.

Regional Policy Objective 10.15

Support the relevant local authorities (and Irish Water where relevant) in the Region to improve storm water infrastructure to improve sustainable drainage and reduce the risk of flooding in the urban environment and in the development and provision at a local level of Sustainable Urban Drainage solutions.

Regional Policy Objective 10.16

Implement policies contained in the Greater Dublin Strategic Drainage Study (GDSDS), including SuDS.

Regional Policy Objective 10.18

Local authorities shall ensure adequate surface water drainage systems are in place which meet the requirements of the Water Framework Directive and the associated River Basin Management Plans.

Dún Laoghaire-Rathdown County Development Plan 2016-2022

Policy LHB19: Protection of Natural Heritage and the Environment

It is Council policy to protect and conserve the environment including, in particular, the natural heritage of the County and to conserve and manage Nationally and Internationally important and EU designated sites - such as Special Protection Areas, candidate Special Areas of Conservation, proposed Natural Heritage Areas and Ramsar sites - as well as non-designated areas of high nature conservation value which serve as 'Stepping Stones' for the purposes of Article 10 of the Habitats Directive.

Policy LHB20: Habitats Directive

It is Council policy to ensure the protection of natural heritage and biodiversity, including European sites that form part of the Natura 2000 network, in accordance with relevant EU Environmental Directives and applicable National Legislation, Policies, Plans and Guidelines.

Policy LHB22: Designated Sites

It is Council policy to protect and preserve areas designated as proposed Natural Heritage Areas, candidate Special Areas of Conservation, and Special Protection Areas. It is Council policy to promote the maintenance and as appropriate, delivery of 'favourable' conservation status of habitats and species within these areas.

Policy EI2: Wastewater Treatment and Appropriate Assessment

It is Council policy to provide adequate wastewater treatment facilities to serve the existing and future population of the County, subject to complying with the Water Framework Directive and the associated River Basin Management Plan or any updated version of this document, 'Water Quality in Ireland 2007-2009' (EPA 2011) or any updated version of the document, Pollution Reduction Programmes for Designated Shellfish Areas, the Urban Waste Water Treatment Directive and the Habitats Directive.

Policy El3: Surface Water Drainage and Appropriate Assessment

[94] The Greater Dublin Drainage Project, the Ringsend Wastewater Treatment Plant Project, the Athlone Main Drainage Project and the Upper Liffey Valley Sewerage Scheme

It is Council policy to require that a Sustainable Drainage System (SuDS) is applied to any development and that site specific solutions to surface water drainage systems are developed, which meet the requirements of the Water Framework Directive and the associated River Basin Management Plans and 'Water Quality in Ireland 2007-2009' (EPA 2011) or any updated version of the document.

Dublin City Development Plan 2016 – 2022

GI23
To protect flora, fauna and habitats, which have been identified by Articles 10 and 12 of Habitats Directive, Birds Directive, Wildlife Acts 1976–2012, the Flora (Protection) Order 2015 S.I No. 356 of 2015, European Communities (Birds and Natural Habitats) Regulations 2011 to 2015.

GI24
To conserve and manage all Natural Heritage Areas, Special Areas of Conservation and Special Protection Areas designated, or proposed to be designated, by the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.

GIO17
To seek the continued improvement of water quality, bathing facilities and other recreational opportunities in the coastal, estuarine and surface waters in the city and to protect the ecology and wildlife of Dublin Bay.

GI20
To seek continued improvement in water quality, bathing facilities and other recreational opportunities in the coastal, estuarine and surface waters in the city, having regard to the sensitivities of Dublin Bay and to protect the ecology and wildlife of Dublin Bay.

SI18: To require the use of Sustainable Urban Drainage Systems in all new developments, where appropriate, as set out in the Greater Dublin Regional Code of Practice for Drainage Works. The following measures will apply:

- The infiltration into the ground through the development of porous pavement such as permeable paving, swales, and detention basins
- The holding of water in storage areas through the construction of green roofs, rainwater harvesting, detention basins, ponds, and wetlands
- The slow-down of the movement of water.

South Dublin County Council Development Plan 2016-2022

HCL12 Objective 1

To prevent development that would adversely affect the integrity of any Natura 2000 site located within and immediately adjacent to the County and promote favourable conservation status of habitats and protected species including those listed under the Birds Directive, the Wildlife Acts and the Habitats Directive.

HCL12 Objective 2

To ensure that projects that give rise to significant direct, indirect or secondary impacts on Natura 2000 sites, either individually or in combination with other plans or projects, will not be permitted unless the following is robustly demonstrated in accordance with Article 6(4) of the Habitats Directive and S.177AA of the Planning and Development Act (2000 – 2010) or any superseding legislation:

1. There are no less damaging alternative solutions available; and
2. There are imperative reasons of overriding public interest (as defined in the Habitats Directive) requiring the project to proceed; and
3. Adequate compensatory measures have been identified that can be put in place.

IE Policy 1 Water & Wastewater

It is the policy of the Council to work in conjunction with Irish Water to protect existing water and drainage infrastructure and to promote investment in the water and drainage network to support environmental protection and facilitate the sustainable growth of the County.

IE1 Objective 1

To work in conjunction with Irish Water to protect, manage and optimise water supply and foul drainage networks in the County.

IE1 Objective 2

To work in conjunction with Irish Water to facilitate the timely delivery of ongoing upgrades and the expansion of water supply and wastewater services to meet the future needs of the County and the Region.

IE Policy 2 Surface Water & Groundwater

It is the policy of the Council to manage surface water and to protect and enhance ground and surface water quality to meet the requirements of the EU Water Framework Directive.

IE2 Objective 1

To maintain, improve and enhance the environmental and ecological quality of our surface waters and groundwater by implementing the programme of measures set out in the Eastern River Basin District River Basin Management Plan.

IE2 Objective 3

To maintain and enhance existing surface water drainage systems in the County and promote and facilitate the development of Sustainable Urban Drainage Systems (SUDS), including integrated constructed wetlands, at a local, district and County level, to control surface water outfall and protect water quality.

IE2 Objective 4

To incorporate Sustainable Urban Drainage Systems (SUDS) as part of Local Area Plans, Planning Schemes, Framework Plans and Design Statements to address the potential for Sustainable Urban Drainage at a site and/or district scale, including the potential for wetland facilities.

IE2 Objective 5

To limit surface water run-off from new developments through the use of Sustainable Urban Drainage Systems (SUDS) and avoid the use of underground attenuation and storage tanks.

IE2 Objective 6

To promote and support the retrofitting of Sustainable Urban Drainage Systems (SUDS) in established urban areas, including integrated constructed wetlands.

Kildare County Development Plan 2017-2023

NH 4

Support the conservation and enhancement of Natura 2000 Sites including any additional sites that may be proposed for designation during the period of this Plan and to protect the Natura 2000 network from any plans and projects that are likely to have a significant effect on the coherence or integrity of a Natura 2000 Site.

NH 5

Prevent development that would adversely affect the integrity of any Natura 2000 site located within and immediately adjacent to the county and promote favourable conservation status of habitats and protected species including those listed under the Birds Directive, the Wildlife Acts and the Habitats Directive.

NH 6

Ensure an Appropriate Assessment, in accordance with Article 6(3) and Article 6(4) of the Habitats Directive and with DEHLG guidance (2009), is carried out in respect of any plan or project not directly connected with or necessary to the management of a Natura 2000 site to determine the likelihood of the plan or project having a significant effect on a Natura 2000 site, either individually or in combination with other plans or projects and to ensure that projects which may give rise to significant cumulative, direct, indirect or secondary impacts on Natura 2000 sites will not be permitted (either individually or in combination with other plans or projects) unless for reasons of overriding public interest.

WQ 1

Co-operate with the EPA and other authorities in the continued implementation of the EU Water Framework Directive and assist and co-operate with the lead authority for the River Basin Management Plan(s).

WQ 2

Ensure, through the implementation of the River Basin Management Plan(s) and the associated Programmes of Measures and any other associated legislation, the protection and improvement of all drinking water, surface water and ground waters throughout the county.

WQ 6

Protect recognised salmonid water courses in conjunction with Inland Fisheries Ireland such as the Liffey catchment, which are recognised to be exceptional in supporting salmonid fish species.

WW 4

Ensure that adequate wastewater services will be available to service development prior to the granting of planning permission. Applicants who are proposing to connect to the public wastewater network should consult with Irish Water regarding available capacity prior to applying for planning permission.

WW 12

Ensure that existing and permitted private wastewater treatment plants are operated in compliance with their wastewater discharge license, in order to protect water quality.

Wicklow County Development Plan 2016-2022

NH2

No projects giving rise to significant cumulative, direct, indirect or secondary impacts on Natura 2000 sites arising from their size or scale, land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, decommissioning or from any other effects shall be permitted on the basis of this plan (either individually or in combination with other plans or projects).

Except as provided for in Section 6(4) of the Habitats Directive, viz. There must be: a) no alternative solution available, b) imperative reasons of overriding public interest for the project to proceed; and c) Adequate compensatory measures in place.

NH3

To contribute, as appropriate, towards the protection of designated ecological sites including candidate Special Areas of Conservation (cSACs) and Special Protection Areas (SPAs); Wildlife Sites (including proposed Natural Heritage Areas); Salmonid Waters; Flora Protection Order sites; Wildfowl Sanctuaries (see S.I. 192 of 1979); Freshwater Pearl Mussel catchments; and Tree Preservation Orders (TPOs). To contribute towards compliance with relevant EU Environmental Directives and applicable National Legislation, Policies, Plans and Guidelines, including the following and any updated/superseding documents:

- EU Directives, including the Habitats Directive (92/43/EEC, as amended)7 , the Birds Directive (2009/147/EC)8 , the Environmental Liability Directive (2004/35/EC)9 , the Environmental Impact Assessment Directive (85/337/EEC, as amended), the Water Framework Directive (2000/60/EC) and the Strategic Environmental Assessment Directive (2001/42/EC).
- National legislation, including the Wildlife Act 197610, the European Communities (Environmental Impact Assessment) Regulations 1989 (SI No. 349 of 1989) (as amended), the Wildlife (Amendment) Act 2000, the European Union (Water Policy) Regulations 2003 (as amended), the Planning and Development Act 2000 (as amended), the European Communities (Birds and Natural Habitats) Regulations 2011 (SI No. 477 of 2011) and the European Communities (Environmental Liability) Regulations 200811.
- National policy guidelines (including any clarifying Circulars or superseding versions of same), including the Landscape and Landscape Assessment Draft Guidelines 2000, the Environmental Impact Assessment Sub-Threshold Development Guidelines 2003, Strategic Environmental Assessment Guidelines 2004 and the Appropriate Assessment Guidance 2010.
- Catchment and water resource management Plans, including Eastern and South Eastern River Basin Management Plan 2009-2015 (including any superseding versions of same).
- Biodiversity Plans and guidelines, including Actions for Biodiversity 2011-2016: Ireland's 2nd National Biodiversity Plan (including any superseding version of same).
- Ireland's Environment 2014 (EPA, 2014, including any superseding versions of same), and to make provision where appropriate to address the report's goals and challenges.

NH4

All projects and plans arising from this plan12 (including any associated improvement works or associated infrastructure) will be screened for the need to undertake Appropriate Assessment under Article 6 of the Habitats Directive. A plan or project will only be authorised after the competent authority has ascertained, based on scientific evidence, Screening for Appropriate Assessment, and a Stage 2 Appropriate Assessment where necessary, that:

1) The Plan or project will not give rise to significant adverse direct, indirect or secondary effects on the integrity of any European site (either individually or in combination with other plans or projects); or

2) The Plan or project will have significant adverse effects on the integrity of any European site (that does not host a priority natural habitat type and / or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000; or

3) The Plan or project will have a significant adverse effect on the integrity of any European site (that hosts a natural habitat type and/or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons for overriding public interest, restricted to reasons of human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000.

NH5

To maintain the conservation value of all proposed and future Natural Heritage Areas (NHAs) and to protect other designated ecological sites in Wicklow.

Along with cSACs, SPAs and pNHA these include Salmonid Waters; Flora Protection Order sites; Wildfowl Sanctuaries (see S.I. 192 of 1979); Freshwater Pearl Mussel catchments; and Tree Preservation Orders (TPOs).

WI2

To protect existing and potential water resources of the County, in accordance with the EU Water Framework Directive, the River Basin Management Plans, the Groundwater Protection Scheme and source protection plans for public water supplies.

WI12

Ensure the implementation of Sustainable Urban Drainage Systems (SUDS) and in particular, to ensure that all surface water generated in a new development is disposed of on-site or is attenuated and treated prior to discharge to an approved surface water system.

WI6

In order to fulfil the objectives of the Core Strategy, Wicklow County Council will work alongside and facilitate the delivery of Irish Water's Water Services Investment Programme, to ensure that all lands zoned for development are serviced by an adequate wastewater collection and treatment system and in particular, to endeavour to secure the delivery of regional and strategic wastewater schemes. In particular, to support and facilitate the development of a WWTP in Arklow, at an optimal location following detailed technical and environmental assessment and public consultation.

WI7

Permission will be considered for private wastewater treatment plants for single rural houses where:

- the specific ground conditions have been shown to be suitable for the construction of a treatment plant and any associated percolation area;
- the system will not give rise to unacceptable adverse impacts on ground waters / aquifers and the type of treatment proposed has been drawn up in accordance with the appropriate groundwater protection response set out in the Wicklow Groundwater Protection Scheme (2003);

- the proposed method of treatment and disposal complies with Wicklow County Council's Policy for Wastewater Treatment & Disposal Systems for Single Houses (PE ≤ 10) and the Environmental Protection Agency "Waste Water Treatment Manuals"; and
- in all cases the protection of ground and surface water quality shall remain the overriding priority and proposals must definitively demonstrate that the proposed development will not have an adverse impact on water quality standards and requirements set out in EU and national legislation and guidance documents.

WI9

Private wastewater treatment plants for commercial / employment generating development will only be considered where:

- Irish Water has confirmed the site is due to be connected to a future public system in the area6 or Irish Water have confirmed there are no plans for a public system in the area;
- it can clearly demonstrated that the proposed system can meet all EPA / Local Authority environmental criteria; and
- an annually renewed contract for the management and maintenance of the system is contracted with a reputable company / person, details of which shall be provided to the Local Authority.

Appendix III

Winter 2020/2021 Flight activity survey results for SCI species (see Figure 7 and 8)

Flight ID	Surveyor	Date	Start Time	End Time	BTO Code[95]	Peak Count	Height (m)
1	SB	26/11/2020	09:29	09:29	HG	2	5
2	SB	26/11/2020	09:40	09:40	HG	1	5
3	SB	26/11/2020	10:03	10:03	HG	1	5
4	SB	26/11/2020	14:44	14:44	HG	1	10
5	SB	26/11/2020	15:13	15:13	HG	2	10
6	EV	15/12/2020	09:00	09:05	HG	1	NR
7	EV	15/12/2020	10:29	10:29	HG	2	NR
8	EV	15/12/2020	10:38	10:38	HG	2	NR
10	EV	15/12/2020	10:54	10:54	HG	2	NR
11	EV	15/12/2020	12:20	12:20	HG	1	NR
12	EV	15/12/2020	13:28	13:28	HG	2	NR
13	EV	15/12/2020	13:34	13:34	HG	1	NR
14	EV	15/12/2020	15:25	15:25	HG	4	NR
15	EV	15/12/2020	15:29	15:29	HG	11	NR
16	EV	15/12/2020	15:32	15:32	HG	3	NR
17	EV	15/12/2020	14:45	14:45	CU	1	NR
18	EV	15/12/2020	13:22	13:22	HG	1	NR
19	EV	15/12/2020	14:11	14:11	CU	1	NR
20	LG	16/02/2021	08:25	08:25	HG	1	15
21	LG	16/02/2021	08:29	08:29	HG	2	20
22	LG	16/02/2021	08:31	08:31	HG	4	20
24	LG	16/02/2021	08:44	08:44	CU	1	10
27	LG	16/02/2021	08:49	08:49	HG	2	15
28	LG	16/02/2021	08:51	08:51	CA	1	15
29	LG	16/02/2021	08:53	08:53	HG	3	15
30	LG	16/02/2021	08:56	08:56	HG	4	15
31	LG	16/02/2021	08:58	08:58	HG	7	10
32	LG	16/02/2021	09:18	09:18	HG	2	20
33	LG	16/02/2021	09:31	09:33	HG	6	20
34	LG	16/02/2021	09:37	09:37	HG	4	20
35	LG	16/02/2021	09:46	09:46	HG	1	10
36	LG	16/02/2021	09:50	09:50	HG	1	15
37	LG	16/02/2021	09:53	09:53	HG	1	10

[95] BTO Codes

HG	Herring Gull	CA	Cormorant	OC	Oystercatcher
BH	Black-headed Gull	CU	Curlew	BG	Light-bellied Brent Goose

38	LG	16/02/2021	09:59	09:59	HG	1	20
39	LG	16/02/2021	10:11	10:11	HG	3	15
40	LG	16/02/2021	10:25	10:25	HG	1	10
41	LG	16/02/2021	10:27	10:27	OC	3	15
42	LG	16/02/2021	12:54	12:54	HG	3	15
43	LG	16/02/2021	12:56	12:56	HG	2	20
44	LG	16/02/2021	13:01	13:01	HG	2	20
45	LG	16/02/2021	13:09	13:09	HG	2	20
46	LG	16/02/2021	13:20	13:20	HG	1	15
47	LG	16/02/2021	13:20	13:20	HG	1	20
48	LG	16/02/2021	13:26	13:26	HG	1	15
49	LG	16/02/2021	13:20	13:20	OC	1	5
50	LG	16/02/2021	13:31	13:31	HG	1	15
51	LG	16/02/2021	13:34	13:34	HG	1	20
52	LG	16/02/2021	13:40	13:40	OC	1	10
53	LG	16/02/2021	13:42	13:42	HG	1	20
55	LG	16/02/2021	13:53	13:53	HG	1	20
56	LG	16/02/2021	13:55	13:55	HG	1	20
57	LG	16/02/2021	13:57	13:57	HG	2	20
58	LG	16/02/2021	14:03	14:03	HG	3	20
59	LG	16/02/2021	14:08	14:08	HG	1	20
60	LG	16/02/2021	14:12	14:12	HG	1	15
61	LG	16/02/2021	15:10	15:10	HG	1	15
62	LG	16/02/2021	15:12	15:12	HG	1	15
63	LG	16/02/2021	15:17	15:17	HG	2	20
64	LG	16/02/2021	15:20	15:20	HG	4	20
65	LG	16/02/2021	15:25	15:25	HG	1	15
66	LG	16/02/2021	15:36	15:36	HG	7	15
67	LG	16/02/2021	15:39	15:39	HG	21	20
69	LG	16/02/2021	15:50	15:50	CU	1	5
72	LG	16/02/2021	16:03	16:03	HG	1	15
73	LG	16/02/2021	16:05	16:05	HG	6	15
74	LG	16/02/2021	16:07	16:07	HG	2	15
75	LG	16/02/2021	16:39	16:39	HG	1	20
76	LG	16/02/2021	16:41	16:41	HG	8	20
78	LG	16/02/2021	16:46	16:46	HG	1	20
79	LG	16/02/2021	16:48	16:48	HG	5	20
81	LG	16/02/2021	16:51	16:51	HG	1	25
83	LG	16/02/2021	16:58	16:58	HG	2	15
84	LG	16/02/2021	17:02	17:02	HG	1	15
85	LG	16/02/2021	17:08	17:08	HG	1	20
86	LG	16/02/2021	13:18	13:18	HG	2	20
87	LG	16/02/2021	13:47	13:47	HG	9	15
88	LG	16/02/2021	15:30	15:30	HG	11	20
89	LG	16/02/2021	15:58	15:58	HG	1	15

91	LG	25/02/2021	08:22	08:22	HG	1	15
92	LG	25/02/2021	07:55	07:55	BH	2	15
93	LG	25/02/2021	08:40	08:40	OC	1	15
94	LG	25/02/2021	08:05	08:05	CU	1	20
95	LG	25/02/2021	08:00	08:00	HG	1	15
96	LG	25/02/2021	11:44	11:44	HG	1	15
97	LG	25/02/2021	09:00	09:00	HG	1	20
98	LG	25/02/2021	09:55	09:55	HG	2	20
100	LG	25/02/2021	11:52	11:52	HG	2	20
101	LG	25/02/2021	11:40	11:40	HG	3	15
102	LG	25/02/2021	11:56	11:56	BG	1	20
103	LG	25/02/2021	09:52	09:52	HG	1	10
104	LG	25/02/2021	09:02	09:02	CU	20	10
105	LG	25/02/2021	09:02	09:02	OC	12	10
106	LG	25/02/2021	14:41	14:41	OC	1	15
107	LG	25/02/2021	14:49	14:49	HG	1	15
108	LG	25/02/2021	14:31	14:31	HG	1	15
109	LG	25/02/2021	14:33	14:33	CU	1	15
110	LG	25/02/2021	14:44	14:44	HG	1	15
111	LG	25/02/2021	17:01	17:01	CU	3	15
112	LG	25/02/2021	16:54	16:54	HG	1	15
114	LG	11/03/2021	07:35	07:35	HG	1	15
115	LG	11/03/2021	07:39	07:39	HG	1	15
116	LG	11/03/2021	07:44	07:44	HG	3	15
117	LG	11/03/2021	08:13	08:13	HG	2	20
118	LG	11/03/2021	08:39	08:39	CU	10	15
119	LG	11/03/2021	09:16	09:16	HG	4	20
120	LG	11/03/2021	09:40	09:40	HG	4	15
121	LG	11/03/2021	09:55	09:55	HG	2	15
122	LG	11/03/2021	09:55	09:55	HG	3	20
123	LG	11/03/2021	12:30	12:30	CU	30	10
124	LG	11/03/2021	12:40	12:40	HG	4	20
126	LG	11/03/2021	14:25	14:25	HG	1	20
127	LG	11/03/2021	17:22	17:22	HG	1	15
129	LG	11/03/2021	18:05	18:05	HG	56	25
130	EV	15/03/2021	07:03	07:03	HG	3	15
131	EV	15/03/2021	07:03	07:03	HG	1	15
132	EV	15/03/2021	07:06	07:06	HG	3	15
133	EV	15/03/2021	07:11	07:12	HG	1	15
134	EV	15/03/2021	07:14	07:14	HG	50	15
135	EV	15/03/2021	07:19	07:20	HG	35	15
136	EV	15/03/2021	07:58	07:58	HG	1	15
137	EV	15/03/2021	08:05	08:06	HG	2	15
138	EV	15/03/2021	10:32	10:36	HG	14	15
139	EV	15/03/2021	14:53	15:01	HG	2	15

140	EV	15/03/2021	14:56	14:56	HG	2	20
141	EV	15/03/2021	07:08	07:08	HG	3	15
142	EV	15/03/2021	10:48	10:48	HG	3	15
143	EV	15/03/2021	15:29	15:29	HG	1	15
145	EV	15/03/2021	17:34	17:34	HG	1	15
146	EV	15/03/2021	07:11	07:11	HG	2	15
147	EV	15/03/2021	07:46	07:46	HG	2	20
148	EV	15/03/2021	13:53	13:53	HG	3	15
149	EV	15/03/2021	14:25	14:25	HG	1	15
150	EV	15/03/2021	16:46	16:46	HG	2	15
151	EV	15/03/2021	17:22	17:22	HG	2	20
152	EV	15/03/2021	17:27	17:27	HG	1	15
153	EV	15/03/2021	07:49	07:50	HG	2	15
154	EV	15/03/2021	08:04	08:04	HG	1	15
155	EV	15/03/2021	08:05	08:05	HG	2	15
156	EV	15/03/2021	08:09	08:09	HG	2	15
157	EV	15/03/2021	08:21	08:21	HG	1	20
158	EV	15/03/2021	08:26	08:26	HG	1	15
159	EV	15/03/2021	08:28	08:28	CU	1	15
160	EV	15/03/2021	08:34	08:34	HG	7	15
161	EV	15/03/2021	10:15	10:15	HG	1	15
162	EV	15/03/2021	10:27	10:27	HG	5	15
163	EV	15/03/2021	11:08	11:08	HG	1	15
164	EV	15/03/2021	12:09	12:09	HG	1	15
165	EV	15/03/2021	17:09	17:09	HG	1	20
166	EV	15/03/2021	17:46	17:46	HG	3	15
167	EV	15/03/2021	07:34	07:34	HG	1	15
168	EV	15/03/2021	11:11	11:11	HG	1	15
169	EV	15/03/2021	14:05	14:05	HG	2	15
170	EV	15/03/2021	15:18	15:18	HG	2	20
171	EV	15/03/2021	17:52	17:52	HG	2	15
172	EV	15/03/2021	14:47	14:47	HG	3	20
173	EV	15/03/2021	17:39	17:39	HG	1	15
174	EV	15/03/2021	18:03	18:03	HG	1	15
175	EV	15/03/2021	18:09	18:09	HG	6	20
176	EV	15/03/2021	18:13	18:15	HG	3	15
177	EV	15/03/2021	08:03	08:03	HG	3	15
179	EV	15/03/2021	08:30	08:30	HG	3	15
180	EV	15/03/2021	10:23	10:24	HG	1	15
181	EV	15/03/2021	10:26	10:26	HG	2	20
182	EV	15/03/2021	10:35	10:35	HG	1	15
183	EV	15/03/2021	11:06	11:06	HG	2	15
184	EV	15/03/2021	11:17	11:17	HG	1	15
185	EV	15/03/2021	11:52	11:52	HG	1	20
186	EV	15/03/2021	11:59	11:59	HG	2	20

187	EV	15/03/2021	12:22	12:22	HG	2	20
188	EV	15/03/2021	17:30	17:33	HG	2	20
189	EV	15/03/2021	14:35	14:35	HG	2	25
190	EV	15/03/2021	15:01	15:07	HG	3	20
191	EV	15/03/2021	15:28	15:28	HG	1	25
192	EV	15/03/2021	16:48	16:48	HG	1	15
193	EV	15/03/2021	17:00	17:04	HG	5	15
194	EV	15/03/2021	17:17	17:17	HG	1	20
196	EV	15/03/2021	11:48	11:50	HG	5	15
197	EV	15/03/2021	11:18	11:18	HG	1	15
198	EV	15/03/2021	12:01	12:01	HG	1	15
199	EV	15/03/2021	12:16	12:16	HG	1	15
200	EV	15/03/2021	12:30	12:30	HG	6	20
201	EV	15/03/2021	14:35	14:52	HG	4	15
202	EV	15/03/2021	15:15	15:25	HG	2	15
203	EV	15/03/2021	17:47	17:47	HG	2	15
204	EV	15/03/2021	10:35	10:45	HG	13	15
205	EV	15/03/2021	10:57	11:10	HG	4	15
207	EV	15/03/2021	12:04	12:13	HG	6	15
209	EV	15/03/2021	12:29	12:36	HG	6	20
211	EV	15/03/2021	13:59	13:59	HG	3	15
212	EV	15/03/2021	14:19	14:28	HG	5	15
214	EV	15/03/2021	15:19	15:19	HG	1	20
215	EV	15/03/2021	17:00	17:07	HG	4	15
216	EV	15/03/2021	17:35	18:12	HG	9	15

Appendix IV

Landed birds using both the proposed development site and lands within a 300m buffer of the proposed development site (see Figure 4, 5 and 6)

ID	Surveyor	Date	Start time	End time	BTO Code[96]	Peak count	Activity Code
1	COB	22/10/2019	NR[97]	NR	BZ	1	PE
2	COB	22/10/2019	11:42	11:42	BH	2	HU
3	COB	15/11/2019	NR	NR	H.	1	RO
4	COB	15/11/2019	NR	NR	H.	7	RO
5	COB	23/12/2019	NR	NR	LB	1	HU
6	COB	23/12/2019	NR	NR	CU	2	HU
7	COB	23/12/2019	NR	NR	HG	54	HU/RO
8	COB	23/12/2019	11:26	NR	BH	24	HU/RO
9	COB	23/12/2019	11:26	NR	GB	25	HU/RO
10	COB	23/12/2019	14:52	NR	BH	14	HU/RO
11	COB	23/12/2019	14:52	NR	GB	34	HU/RO
12	COB	23/12/2019	14:52	NR	HG	94	HU/RO
13	COB	23/12/2019	15:52	NR	RK	1	HU
14	COB	10/01/2020	NR	NR	CU	1	HU
15	COB	10/01/2020	NR	NR	BH	34	HU
16	COB	10/01/2020	NR	NR	BG	45	HU/RO
17	COB	10/01/2020	NR	NR	HG	195	HU/RO
18	COB	29/01/2020	NR	NR	H.	4	HU
19	COB	29/01/2020	16:10	16:10	BG	65	HU
20	COB	13/02/2020	NR	NR	BH	13	HU
21	COB	13/02/2020	NR	NR	HG	116	HU
22	COB	13/02/2020	NR	NR	GB	79	HU/RO
23	COB	13/02/2020	NR	NR	H.	3	RO
24	COB	13/02/2020	14:51	14:51	CU	79	HU
25	COB	13/02/2020	14:51	15:13	OC	13	HU
26	COB	13/02/2020	14:53	15:19	CU	83	HU
27	COB	13/02/2020	15:32	15:36	CU	90	HU
28	COB	13/02/2020	12:41	12:41	CU	90	HU
29	COB	13/02/2020	12:41	12:41	OC	30	HU
30	COB	13/02/2020	14:21	14:23	CU	83	HU

[96] BTO Codes

HG	Herring Gull*	CA	Cormorant*	H.	Heron	GB	Great Black-backed Gull
BH	Black-headed Gull*	RK	Redshank*	CU	Curlew*	LB	Lesser Black-backed Gull
BG	Light-bellied Brent Goose*	OC	Oystercatcher*	DN	Dunlin*	BZ	Buzzard

*SCI species for SPAs within 20km of the proposed development site

[97] NR- Not Recorded by surveyor

31	COB	13/02/2020	14:29	14:29	CU	95	HU
32	COB	26/02/2020	NR	NR	CU	1	HU
33	COB	26/02/2020	NR	NR	RK	1	HU
34	COB	26/02/2020	07:48	07:55	OC	22	HU
35	COB	26/02/2020	09:35	09:38	CU	6	HU
36	COB	26/02/2020	09:57	10:13	CU	10	HU
37	COB	26/02/2020	10:13	10:25	CU	15	HU
38	COB	26/02/2020	10:10	10:23	OC	16	HU
39	COB	26/02/2020	11:10	12:02	CU	35	HU
40	COB	26/02/2020	11:10	12:02	OC	20	HU
41	COB	26/02/2020	12:06	12:27	CU	34	HU
42	COB	26/02/2020	12:06	12:27	OC	23	HU
43	COB	26/02/2020	12:28	12:56	CU	39	HU
44	COB	26/02/2020	12:30	12:56	OC	26	HU
45	COB	26/02/2020	12:39	13:25	OC	26	HU
46	COB	26/02/2020	13:12	13:30	OC	24	HU
47	COB	26/02/2020	13:12	13:31	CU	43	HU
48	COB	26/02/2020	15:22	15:57	OC	13	HU
49	COB	26/02/2020	15:22	15:57	CU	35	HU
50	COB	26/02/2020	15:59	17:03	CU	39	HU
51	COB	26/02/2020	15:59	17:03	OC	10	HU
52	COB	26/02/2020	08:34	08:35	CU	11	HU
53	COB	26/02/2020	08:34	08:35	OC	11	HU
54	EV	10/12/2020	NR	NR	CU	1	OG
55	EV	10/12/2020	10:15	10:30	BG	10	RO
56	EV	10/12/2020	10:15	10:30	RK	1	RO
57	EV	10/12/2020	10:15	10:30	H.	1	RO
58	EV	10/12/2020	10:15	10:30	BH	5	RO
59	EV	10/12/2020	10:15	10:30	HG	171	RO
60	EV	10/12/2020	10:15	10:30	GB	12	RO
61	EV	10/12/2020	13:20	13:35	GB	2	RO
62	EV	10/12/2020	13:20	13:35	HG	24	RO
63	EV	10/12/2020	13:20	13:35	BH	3	RO
64	EV	10/12/2020	13:20	13:35	HG	47	RO
65	EV	10/12/2020	13:20	13:35	RK	1	RO
66	EV	10/12/2020	13:20	13:35	OC	3	RO
67	EV	25/01/2021	NR	NR	CU	28	OG
68	EV	25/01/2021	NR	NR	CU	13	OG
69	EV	25/02/2021	07:35	NR	HG	10	HU
70	EV	15/03/2021	06:59	06:59	H.	1	RO
71	EV	15/03/2021	09:18	NR	OC	1	HU
72	EV	15/03/2021	09:18	NR	HG	15	RO
73	EV	15/03/2021	16:09	NR	HG	135	HU
74	EV	15/03/2021	16:09	NR	OC	4	HU
75	EV	15/03/2021	16:09	NR	BG	8	HU

76	EV	15/03/2021	16:09	NR	GB	16	HU
77	EV	15/03/2021	16:09	NR	RK	1	HU
78	EV	15/03/2021	09:18	NR	HG	8	RO
79	EV	15/03/2021	16:09	NR	HG	5	HU
80	EV	15/03/2021	07:00	08:15	CU	5	HU
81	EV	15/03/2021	13:40	13:53	CU	6	HU
82	EV	15/03/2021	14:03	14:16	CU	9	HU
83	EV	15/03/2021	16:41	16:56	CU	9	HU
84	HD	29/01/2020	08:15	08:55	OC	10	HU
85	HD	29/01/2020	08:15	08:55	CU	3	HU
86	HD	29/01/2020	08:15	08:55	RK	1	HU
87	HD	29/01/2020	08:15	08:55	ET	1	HU
88	HD	29/01/2020	08:15	08:55	BG	14	HU
89	HD	29/01/2020	08:15	08:55	HG	596	RO
90	HD	29/01/2020	08:15	08:55	GB	72	RO
91	HD	29/01/2020	09:20	10:45	H.	1	PE
92	HD	29/01/2020	13.15	13:40	H.	2	PE
93	HD	29/01/2020	11:15	12:10	H.	2	PE
94	HD	29/01/2020	10:10	10:20	MH	1	HU
95	HD	13/02/2020	11:05	11:18	CU	117	HU
96	HD	13/02/2020	11:05	11:18	OC	38	HU
97	HD	13/02/2020	11:22	11:50	CU	71	HU
98	HD	13/02/2020	11:29	11:50	OC	34	HU
99	HD	13/02/2020	13:50	14:20	CU	128	HU
100	HD	13/02/2020	13:50	14:20	OC	42	HU
101	HD	13/02/2020	15:20	17:00	H.	2	PE
102	HD	26/02/2020	07:30	08:00	OC	5	HU
103	HD	26/02/2020	07:30	08:00	RK	2	HU
104	HD	26/02/2020	07:30	08:00	BH	1	OG
105	HD	26/02/2020	07:30	08:30	HG	346	RO
106	HD	26/02/2020	07:30	08:30	GB	67	RO
107	HD	26/02/2020	13:00	13:30	OC	8	RO
108	HD	26/02/2020	13:55	15:30	CU	38	HU
109	HD	26/02/2020	13:55	15:30	OC	22	HU
110	HD	12/03/2020	09:00	09:30	CU	2	OG
111	HD	12/03/2020	09:00	09:30	RK	1	HU
112	HD	12/03/2020	09:00	09:30	OC	3	HU
113	HD	12/03/2020	09:00	09:30	HG	143	OG
114	HD	12/03/2020	09:00	09:30	GB	43	OG
115	HD	24/03/2020	17:15	17:45	CU	2	HU
116	HD	24/03/2020	17:15	17:45	OC	2	HU
117	HD	24/03/2020	17:15	17:45	HG	136	OG
118	HD	24/03/2020	17:15	17:45	GB	15	OG
119	KS	24/03/2020	NR	NR	CU	1	HU
120	KS	24/03/2020	NR	NR	GB	16	HU

121	LG	15/12/2020	08:38	08:40	HG	3	HU
122	LG	15/12/2020	14:25	14:45	OC	5	HU
123	LG	15/12/2020	14:25	14:45	LB	7	HU
124	LG	15/12/2020	14:25	14:45	GB	5	HU
125	LG	15/12/2020	14:25	14:45	HG	224	HU
126	LG	15/12/2020	14:25	14:45	BH	4	HU
127	LG	16/02/2021	13:20	13:32	OC	1	OG
128	LG	16/02/2021	14:38	NR	BH	1	SW
129	LG	16/02/2021	07:41	08:00	BH	1	OG
130	LG	16/02/2021	07:41	08:00	HG	18	OG
131	LG	16/02/2021	07:41	08:00	GB	36	OG
132	LG	16/02/2021	07:41	08:00	OC	10	OG
133	LG	16/02/2021	07:41	08:00	CU	2	OG
134	LG	25/02/2021	09:02	09:14	OC	1	HU
135	LG	25/02/2021	09:02	09:27	OC	29	HU
136	LG	25/02/2021	09:02	09:27	CU	62	HU
137	LG	25/02/2021	09:14	NR	OC	1	HU
138	LG	25/02/2021	10:24	NR	HG	1	SW
139	LG	25/02/2021	11:08	11:24	OC	1	HU
140	LG	25/02/2021	16:08	NR	OC	4	HU
141	LG	25/02/2021	16:08	NR	HG	26	HU
142	LG	25/02/2021	16:08	NR	GB	1	HU
143	LG	11/03/2021	10:40	NR	H.	1	HU
144	LG	11/03/2021	10:55	11:08	CU	26	HU
145	LG	11/03/2021	11:26	11:31	CU	30	HU
146	LG	11/03/2021	11:32	NR	CU	30	HU
147	LG	11/03/2021	11:34	11:47	HG	2	OG
148	LG	11/03/2021	13:25	NR	GB	17	HU
149	LG	11/03/2021	13:25	NR	HG	84	HU
150	LG	11/03/2021	13:25	NR	OC	1	HU
151	LG	11/03/2021	16:12	NR	CU	14	HU
152	LG	11/03/2021	16:21	NR	HG	9	HU
153	LG	11/03/2021	16:21	NR	GB	1	HU
154	LG	15/03/2021	17:28	17:44	HG	47	OG
155	NF	29/01/2021	15:25	15:40	DN	35	HU
156	NF	29/01/2021	15:00	15:40	GB	12	HU
157	NF	29/01/2021	15:00	15:40	OC	18	OG
158	NF	29/01/2021	15:25	15:40	BG	5	HU
159	NF	29/01/2021	08:41	09:15	BH	40	OG
160	NF	29/01/2021	12:15	12:48	BG	6	OG
161	NF	29/01/2021	12:36	12:48	OC	4	OG
162	NF	29/01/2021	15:00	15:40	HG	40	OG
163	NF	11/03/2021	NR	NR	HG		
164	SB	29/11/2019	NR	NR	RK	2	HU
165	SB	29/11/2019	NR	NR	OC	16	HU

166	SB	29/11/2019	NR	NR	GB	24	HU/RO
167	SB	29/11/2019	NR	NR	BG	6	HU/RO
168	SB	29/11/2019	NR	NR	HG	30	HU/RO
169	SB	26/11/2020	11:44	11:44	BZ	1	PE
170	SB	26/11/2020	12:05	12:30	HG	1	PE
171	SB	26/11/2020	09:04	09:10	HG	1	HU
172	SB	16/02/2021	07:35	07:43	HG	29	OG
173	SB	16/02/2021	08:55	17:35	H.	5	PE