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ENVIRONMENTAL SCIENCE &
PLANNING

PROPOSED MAINTENANCE BUILDING: BALLEALLY LANDFILL/ROGERSTOWN PARK, LUSK, CO. DUBLIN

REPORT TO INFORM SCREENING FOR APPROPRIATE ASSESSMENT

Prepared for: Fingal County Council

**Comhairle Contae
Fhine Gall**
Fingal County
Council



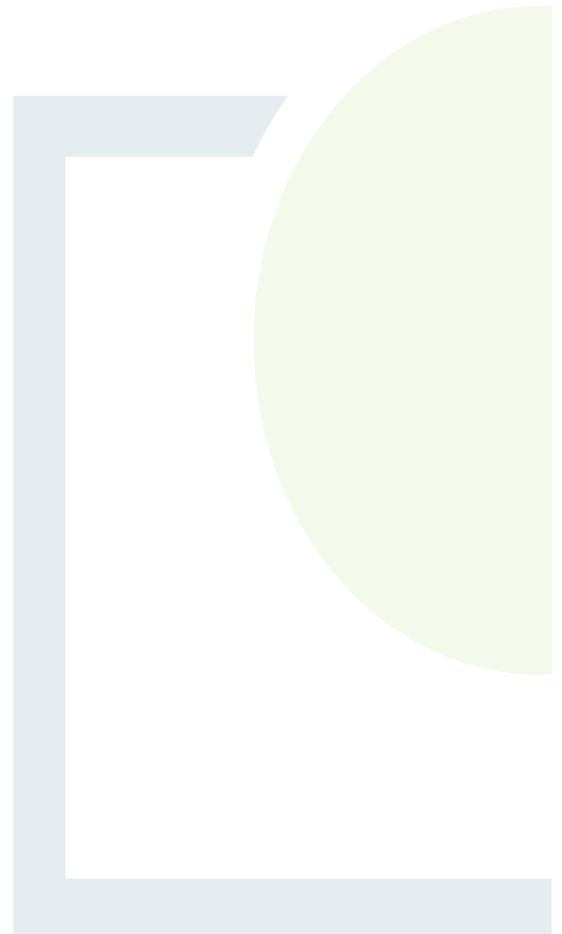
Date: October 2021

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REPORT TO INFORM SCREENING FOR APPROPRIATE ASSESSMENT – PROPOSED MAINTENANCE BUILDING AT BALLEALLY LANDFILL/ROGERSTOWN PARK.

User is responsible for Checking the Revision Status of This Document

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Abstract: This document comprises an assessment of the potential for the proposed maintenance shed at Rogerstown Park (Former Balleally Landfill) at Balleally/Rogerstown, Co. Dublin to have significant effects on European sites. Appropriate Assessment is required under Article 6 (3) of the Habitats Directive for any project or plan that may give rise to significant effects on a European (Natura 2000) site.

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1. INTRODUCTION

Fehily Timoney and Company (FT) were commissioned by Fingal Co. Council to prepare a report to inform the screening for Appropriate Assessment to determine the need for Appropriate Assessment as required by Article 6 of Council Directive 92/43/EEC (Habitats Directive) considering the proposed maintenance shed at Rogerstown Park (Former Balleally Landfill) at Balleally/Rogerstown, Co. Dublin.

In compliance with the provisions of Article 6 of the Habitats Directive, as implemented by Part XAB of the Planning and Development Act 2000, as amended, in circumstances where a proposed plan or project is likely to have a significant effect on a European (Natura 2000) site, either individually or in combination with other plans or projects, an Appropriate Assessment (AA) must be undertaken by the competent authority, of the implications for the site in view of the site's conservation objectives.

European sites comprise both Special Protection Areas (SPAs) for birds and Special Areas of Conservation (SACs) for habitats and species. The Habitats Directive formed a basis for the designation of SACs. Similarly, SPAs are legislated for under the Birds Directive (Council Directive 79/409/EEC on the Conservation of Wild Birds). In general terms, European sites are considered to be of exceptional importance in terms of rare, endangered or vulnerable habitats and species within the European Community.

Article 6 of the Habitats Directive envisages a two-stage process, which is implemented in some detail by the provisions of sections 177U and 177V of the Planning and Development Act. Screening for appropriate assessment in accordance with section 177U is the first stage of the AA process, in which the possibility of there being a significant effect on a European site is considered. Plans or projects that have no appreciable effect on a European site are thereby excluded, or screened out, at this stage of the process. Where screening concludes that there is the potential for significant effects, then it is necessary to carry out an AA for the purposes of Article 6(3), and a Natura Impact Statement (NIS) is produced. The NIS, which forms the basis of the AA, considers the effect of a project or plan on the integrity of a European site and on its conservation objectives, and where necessary, draws up mitigation measures to avoid/minimise negative effects.

This report presents an assessment of whether the proposed remediation work is likely to have a significant effect on a European site (either alone or in combination with other plans or projects) and is based on best available scientific knowledge. This report is to inform the competent authority in completing their statutory obligation to carry out a Screening for Appropriate Assessment.

The competent authority, in carrying out a screening for AA, is required to make an examination, analysis, evaluation, findings, conclusions and a final determination as to whether or not the proposed works would be likely to have significant effects on the relevant European site (s) in view of their conservation objectives.

To evaluate the potential effect(s) of the proposed development on the European sites, an initial exercise based on examination of aerial imagery and GIS mapping of available protected sites, species and habitats datasets was carried out. From this, a list of European sites was compiled for further examination for source-pathway-receptor connectivity.



The proposed project is not located within any European site. A total of 17 European sites were identified for examination in terms of source-pathway-receptor connectivity:

- Rogerstown Estuary SAC¹ (site code 000208; 60m south)
- Rogerstown Estuary SPA (site code 004015; 65m south)
- Malahide Estuary SAC (site code 000205; 3.4 km south)
- Malahide Estuary SPA (site code 004025; 3.4 km south)
- Rockabill to Dalkey Island SAC (site code 003000; 6.1 km east)
- Skerries Islands SPA (site code 004122; 8.4 km north-east)
- Lambay Island SAC (site code 000204; 8.6 km east)
- Lambay Island SPA (site code 004069; 8.6 km east)
- Rockabill SPA (site code 004014; 9.5 km north-east)
- Baldoyle Bay SPA (site code 004016; 9.7 km south)
- Baldoyle Bay SAC (site code 000199; 9.8 km south)
- Ireland's Eye SPA (site code 004117; 12 km south-west)
- Ireland's Eye SAC (site code 002193; 12.4 km south-west)
- North Bull Island SPA (site code 004006; 13.3 km south)
- North Dublin Bay SAC (site code 000206; 13.3 km south)
- Howth Head SAC (site code 000202; 14.6 km south-west)
- Howth Head Coast SPA (site code 004113; 14.6 km south-west)

1.1 Legislative Requirements

The requirements for an AA are set out in the Habitats Directive 92/43/EEC. Articles 6(3) and 6(4) of this Directive states:

6(3) Any plan or project not directly connected with or necessary to the management of the site (Natura 2000 sites) but likely to have 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.

¹ At present most SACs in Ireland are currently 'candidate' SACs and referred to as cSACs. The relevant Statutory Instruments for the cSACs in Ireland have not yet been made, however, these "candidate" sites must still be afforded the same level of protection as if they were SACs as designated in accordance with the EU Habitats Directive.



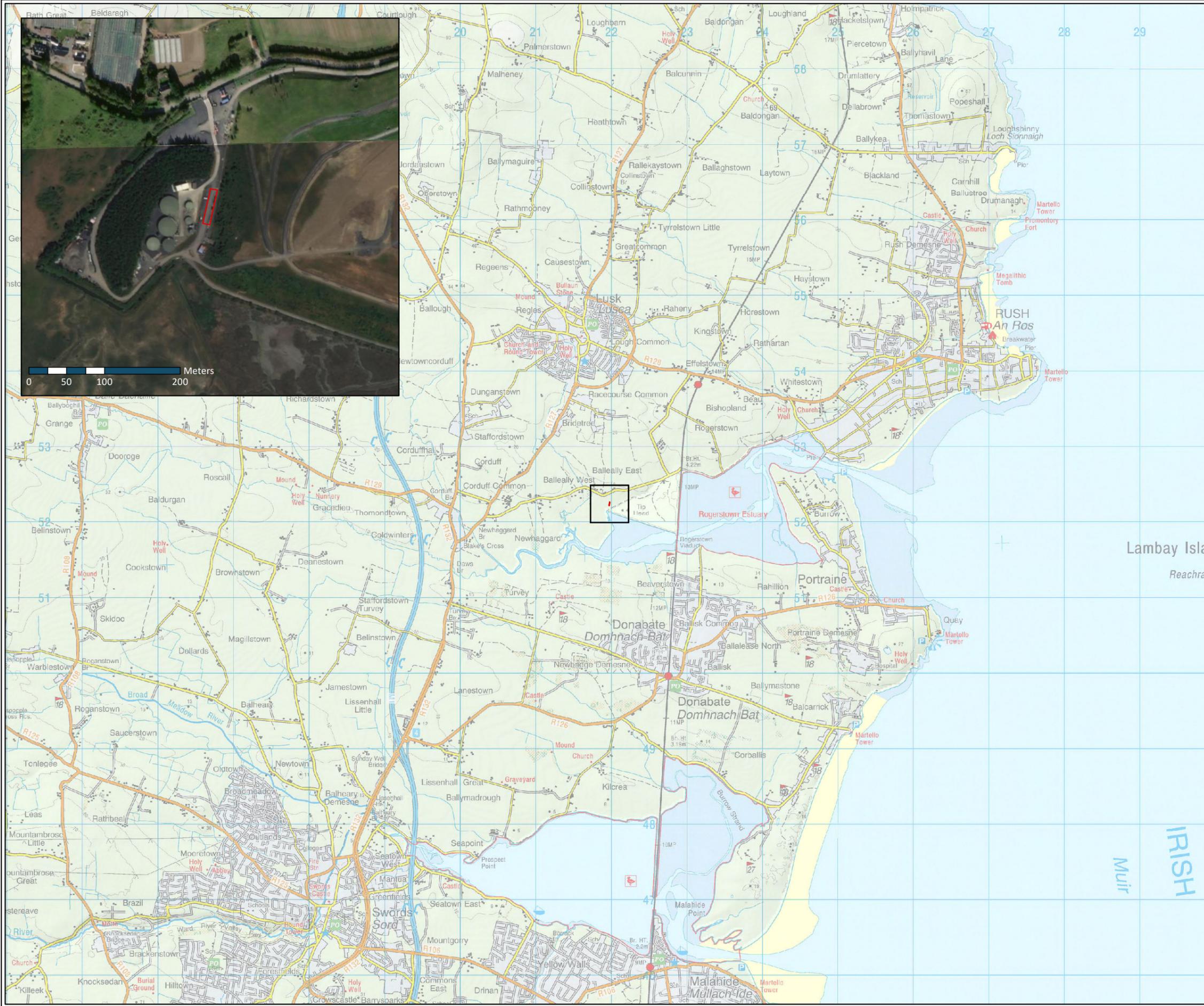
6(4) If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.

Where the site concerned hosts a priority natural habitat type and/or a priority species the only considerations which may be raised are those relating to 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.

The provisions of Article 6 do not apply where the proposed plan or project is 'connected with or necessary to the management of the site'. In this case, the proposed maintenance shed is not directly connected with or necessary to the management of any European site(s) and as such an assessment as to whether the project would be likely to have significant effects on European Sites must be carried out.

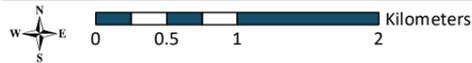
1.2 Statement of Authority

This report has been prepared by Ben O'Dwyer and reviewed by Rita Mansfield. Ben has over 4 years' experience and holds a BSc in Wildlife Biology from Institute of Technology Tralee. Rita is Principal ecologist with Fehily Timoney and has 17 years' experience in the field of ecological assessment. She holds a BSc (Hons) in Applied Ecology from University College Cork and a HDip. (Hons) in Environmental Protection and Pollution Control from Sligo Institute of Technology. Rita has prepared Natura Impact Statements for numerous large scale public infrastructure projects and plans in the transport, energy, and water sectors (including flood relief schemes).



Proposed Shed Location

TITLE:	Site Location
PROJECT:	Maintenance Shed at Rogerstown Park
FIGURE NO:	1.1
CLIENT:	Fingal County Council
SCALE:	1:50000
REVISION:	0
DATE:	04/03/2021
PAGE SIZE:	A3





2. METHODOLOGY

2.1 Guidance

In the preparation of this assessment regard has been had to the relevant guidance, in particular:

- *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*, Office for Official Publications of the European Communities, Luxembourg (EC, 2002);
- *Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities*. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin (2010);
- *Managing Natura 2000 sites. The provisions of Article 6 of the Habitats Directive 92/43/EEC*. European Commission (2018). Brussels, 21.11.2018 C (2018) 7621 final;
- *Interpretation Manual of European Union Habitats*. Version EUR 28. European Commission 2013;

2.2 Assessment Protocol

The process in determining the likelihood of significant effects from the proposed project on European sites is as follows:

Characteristics of the Project and Identification of Impacts

The assessment commences with a description of the project (Section 3 of this report) and the associated likely environmental impacts. All elements of the project are presented including the project location and existing baseline environment. The type of impacts which are likely due to the project are identified having regard to the spatial and temporal scale of the project, resource requirements and likely emissions. The zone of influence (Zol) of the project is therefore defined, and European Sites within the Zol are identified.

The potential for cumulative impacts with other plans and projects is also assessed having regard to the identified impacts of the project.

European Site Characteristics

The European sites which fall within the Zol of the project impacts are identified. The conservation objectives for these European Sites are identified and the environmental conditions needed to maintain or achieve favourable conservation status is determined along with the existing threats and pressures to the Sites (Section 4).

Likelihood of Significance of Effects

The likelihood of significant effects on the European Sites is determined having regard to the sensitivity of the site to the impacts associated with the project on its own and in combination with other plans and projects.



Having regard to Alen-Buckley and Anor V An Bord Pleanála and Anor (2017) IEHC 541, the assessment of 'likely' is made on the basis that "... *there need not be any hard and fast evidence that such a significant effect was likely, there merely had to be a possibility that this significant effect was likely*". Thus, a precautionary approach is adopted and, in cases of uncertainty, the likelihood of an effect is assumed.

Note the threshold for a significant effect is assessed on a *de minimis* level as per the opinion of the Advocate General Sharpston for CJEU case C-258/11:

"48. The requirement that the effect in question be 'significant' exists in order to lay down a de minimis threshold. Plans or projects that have no appreciable effect on a European site are thereby excluded. If all plans or projects capable of having any effect whatsoever on the site were to be caught by Article 6(3), activities on or near the site would risk being impossible by reason of legislative overkill."

2.3 Desktop Study

In order to complete the Screening for Appropriate Assessment certain information on the existing environment is required. A desk study was carried out to collate available information on the site's natural environment. This comprised a review of the following publications, data and datasets:

- Fingal Development Plan 2017-2023;
- Fingal County Council Planning Enquiry System;
- National Parks and Wildlife Service (NPWS) website and metadata available (www.npws.ie);
- OSI Aerial photography and 1:50,000 mapping;
- National Biodiversity Data Centre (NBDC) (on-line map-viewer);
- BirdWatch Ireland website.



3. CHARACTERISTICS OF THE PROJECT

3.1 Project Description

Balleally Landfill is situated in north County Dublin, approximately 18 km from Dublin City and 4.5 km south of the village of Lusk. The landfill is located on the northern margin of Rogerstown Estuary, bounded to the east by the Dublin-Belfast railway line and to the north by Balleally Lane. The proposed maintenance building will be located to the east of the existing Leachate Treatment Plant at the western end of Balleally Landfill Site.

The proposed development will comprise a two-storey detached maintenance building in Balleally Landfill Site, Lusk, Co. Dublin. The maintenance building will provide storage room for vehicles and equipment used to operate and maintain Rogerstown Park.

The maintenance building, will be approximately 8.5 m wide by 45m long with a total height of 8.2 m. The total floor area for the development is approximately 354m² comprising a ground floor area of approximately 315m² and a first-floor area of approximately 39m².

The ground floor level will be divided into the following areas:

- Maintenance Shed for the storage of maintenance vehicles associated with Rogerstown Park.
- Water Closet (WC) connected to existing foul drainage.
- Equipment Store – a separately lockable storage room for general maintenance equipment.

The following areas are proposed at first floor level:

- Mezzanine Store – additional small item storage room accessible via stairs.

At roof level solar PV panels will be installed at each front and rear of the building. Rooflights will also be installed to allow natural lighting into the building.

Vehicular access to the maintenance building will be provided from the existing access to the Leachate Treatment Plant and via three installed roller shutter doors to the building.

3.1.1 Construction

The construction of the proposed maintenance building will commence with the excavation of the existing ground to the required depth for the installation of concrete foundation. The strip or raft foundations (subject to detailed design) will be constructed using reinforced concrete which will be poured in situ.

The superstructure will consist of a steel portal frame and reinforced concrete walls. The steel beams and rafters will be brought to site by truck and unloaded by crane. The crane will then lift the materials into position for anchoring and bolting (manual access typically provided by scaffolding).

The steel portal frame will be clad externally with profiled metal cladding. A concrete perimeter footpath will run around the building. This will be poured in situ.



The rebar number, shape and diameter for the concrete foundation, walls and footpaths will be determined at detailed design. Once shuttering / formwork has been installed, braced and anchored, concrete placement will be carried out. Placement will be by chutes, pump or hopper as per the elevation of the pour. Typically pouring height should not be more than 1.5m above the allocated location in order to prevent segregation. The quantity of concrete required for each pour will be predetermined by the engineer relative to the formwork to be filled. Concrete compacting will be carried out after each pour by mechanical vibrator. Once concrete is cured (over several days) formwork will be removed. It should be noted that concrete works cannot be carried out under adverse weather conditions (very cold or very high temperatures, or wet conditions) as this can compromise the concrete strength. Associated equipment e.g. concrete truck, chute/hopper, and mechanical vibrator will be cleaned down after each pour. This is done by washing down with a hose into a designated concrete skip / washout bin which will be located at the works area. The nearest surface water drain to the works area is approximately 4m away. The works area is on gravelled hardstanding.

The development includes site landscaping (mixed native broadleaf tree planting) along the berm at the rear of the building (separating the amenity area from the leachate facility), and south of the building. Duration of construction will be 30-36 weeks. During this period there will be an increase in noise, particularly associated with removal of formwork and ground preparation.

Typical noise levels (dB L_p) at source for a number of construction activities were obtained from BS 5228-1:2009². The activities examined included a 40-ton excavator digging (79 dBA); concrete slab cutting (91 dBA); angle grinder grinding steel (80 dBA), and a concrete mixing truck (80 dBA). Individual activities on site are not anticipated to exceed 91 dBA at source, and combined activities are not likely to exceed 96 dBA (based on 3 simultaneous emissions of 91 dBA at source)³. The occurrence of noise levels listed at the higher end of the scale would be intermittent and infrequent. Continuous/repetitive noises are expected to be around the lower end of the scale listed above, and would often be lower, reducing to the level of background noise.

A number of physical barriers including the landfill mound, a vegetated bank/hedge, leachate tanks and woodland are present to the east, south and west of the proposed development area. These would act to dampen noise as described below in section 4.1.

3.2 Operation

Surface water and foul water from the proposed development will be managed via the existing surface water management system and wastewater treatment plant respectively.

3.2.1 Surface Water Management

Surface water in the western end of Balleally Landfill is mainly collected via filter drains located at the base of the landfill slopes and along the edge of internal access tracks. The collected surface water discharges at intervals from the filter drains to a main drain located within the internal access track. This main surface water drain ultimately discharges by gravity to the Rogerstown Estuary via a 225mm diameter pipe.

² BSI British Standards: Code of practice for noise and vibration control on construction and open sites – Part 1: Noise

³ Calculated using: <https://noisetools.net/noisecalculator>



The 225mm outfall pipe to the Rogerstown Estuary is equipped with a ductile iron flap valve to prevent tidal backflows from the estuary into the site. The discharge location is monitored in accordance with the sites Waste Licence for several set parameters with corresponding emission limit values.

The existing 225mm diameter gravity drain runs along the eastern side of the proposed maintenance building.

The proposed surface water drainage strategy is outlined below:

- Roof runoff from the proposed maintenance building will be collected via gutters draining to a single down pipe located in the north-eastern corner of the proposed development.
- The proposed down pipe will drain to three 5,000 litres capacity overground rainwater harvesting tanks located adjacent to the maintenance building in the north-eastern corner. Rainwater harvesting will provide a grey water source for the proposed development as well as water for landscape maintenance works.
- Overflow pipes from the water harvesting tanks will discharge to a vegetated surface water swale to the east of the proposed development. The plan area of the swale is of approximately 110m².
- Runoff from the swale will be drained via a grated manhole; SW2
- Surface water from SW2 will be attenuated in a geocellular storage tank, a flow control device will be provided downstream of the attenuation tank to limit the runoff outflow from the development.
- The geocellular storage tank will discharge to proposed manhole SWW12A located downstream of existing manhole SWW12.
- Surface Water discharging to the proposed new manhole (SWW12A) will discharge to the Rogerstown Estuary via the existing EPA licensed and monitored discharge.

3.2.2 Foul Water Management

An existing 225mm diameter gravity foul sewer running along the east of the proposed maintenance building, out falling to a collection sump to the South of the proposed development.

The collection sump is part of the wider landfill leachate collection system. Leachate is pumped from Leachate collection sump to the Leachate Treatment Plant. Leachate is pumped from the leachate treatment plant, to the local foul pump station located outside Balleally Landfill Site along Rogerstown Lane.

At the Rogerstown Lane Foul Pump Station, leachate from Balleally Landfill, combines with other locally sources domestic and foul waters and are pumped to the Portrane Wastewater Treatment Plant (WWTP) located approximately 3.6 km south-east from the site.

3.2.3 Potable Water

Potable water supply will also be provided by a branched supply from the existing water services connection.

3.2.4 Bunding

The maintenance building equipment store will include as necessary mobile bund trays for the storage of small quantities of oils that may be utilised as part of general maintenance activities.



It is also proposed that small access ramps will be installed at all access points to the main maintenance building to provide a contained/self-bunded area to prevent the uncontrolled migration of small spillages/leaks from stored equipment.

Electrical and mechanical services will be provided internally for the purposes of lighting, heating, ventilation, security, mechanical plant (roller doors) etc. The proposed solar PV system shall be used to supply all proposed electrical systems in conjunction with a mains supply. It is proposed that a mains supply shall be established from the existing electrical substation. It is also proposed to provide electrical car charging points within the development.

3.3 Baseline Environment

The proposed maintenance shed at Rogerstown Park is located at the site of the closed Balleally landfill within the compound of the existing leachate treatment facility. The site is bounded to the south/south-west by Rogerstown Estuary and to the east by the existing amenity area (former landfill mound) which is separated from the works area by a post and wire fence, berm and treeline. The existing leachate treatment facility bounds the site to the west, while the access road leading to the L1180 local road is to the north.

According to Fingal Development Plan 2017-2023, Rogerstown Park is designated as OS (open space), as is Beaverstown Golf Club to the south on the opposite side of the estuary. The areas flanking the north and south sides of the estuary are predominantly designated as HA (high amenity), although areas designated as RU (rural), GE (general employment), RS (residential), RA (residential area), CI (community infrastructure), RB (rural business and GB (green belt) are also present in the wider area.

The closed landfill has been capped and extensive leachate and landfill gas management infrastructure is in place. The site is subject to ongoing environmental monitoring and is licenced by the EPA. Rogerstown Park extends over the capped and landscaped landfill. The proposed maintenance shed will be located in the existing leachate treatment facility compound.

A number of streams including the Ballyboghil, Ballough, Regles, Rahillion, Ballalease North, Horestown, Palmertown 08 and Deanstown flow into Rogertown Estuary from the north, west and south. The closest of these is the Regles, which runs c. 260m north-west of the proposed site at its closest point before continuing south-west to discharge into the estuary c. 600m west of the proposed site. None of these watercourses are hydrologically connected with the proposed site. The estuary extends for c. 5 km from its narrowly tapering inland end near Turvey to its mouth at Irish sea. The estuary widens on its' seaward side and extends for c. 1.5 km between its northern and southern shores before meeting Portrane Burrow which shelters the estuary from the Irish sea and constricts its mouth to a narrow channel just over 100m in width.

Rogerstown Estuary is designated as an SAC (site code 000208) and SPA (site code 004015); both sites overlap and are located c. 60m south-west of the proposed site, bordering the greater landfill site. Rogerstown estuary is also a pNHA, the extent and location of which is similar to the SAC. The large open part of the estuary east of Rogertown Park is a statutory nature reserve, while the Turvey nature reserve run by Birdwatch Ireland extends along the southern banks of the estuary to the south and west of Rogerstown Park.

The proposed maintenance shed site is located in an existing area west of the landfill, c. 60m and 65m north-east of Rogerstown Estuary SAC and SPA respectively.



The proposed site is screened to the east by the landfill and screened to the west by the leachate tanks and a mixed broadleaf/conifer woodland c. 8m tall and ranging from c. 30-60m in width. A vegetated bank/hedgerow c. 2m in height screens the proposed site from Rogerstown estuary to the south.

The area proposed for development currently comprises permeable gravel.

There is an existing perimeter surface water drain which runs along the toe of the existing grassed berm of the amenity area (capped and restored area) (see gravel berms on left in Plate 1 below). This drain discharges via outlet SW/V1 to a man-made channel entering Rogerstown Estuary SAC/SPA and drains to non-Annex 1 upper saltmarsh within the SAC. This detail on habitats within the SAC is available in habitat mapping and descriptions produced during the Saltmarsh Monitoring Project (McCorry, 2007). The surface water discharge is operated and monitored in accordance with the emission limit values (ELV) and monitoring requirements set out under EPA waste licence W0009-03. The licence ELVs will need to be upheld during the construction (and operation) of the maintenance building.



Plate 1: Existing Site - Proposed Development Area

SITE AREA
1.336 Ha

- Application site outlined in red.
- Proposed Building
- Foul water to existing waste water treatment plant
- Surface water to existing treatment plant
- Water supply from existing supply



- Foul water to existing waste water treatment plant
- Surface water to existing treatment plant

Landscaping & Planting Key

Sedges, Wildflowers & Grasses

Special Protection Area / Special Area of Conservation

Hard Surface - Hardcore / Gravel

Hard Surface - Concrete

Existing Trees

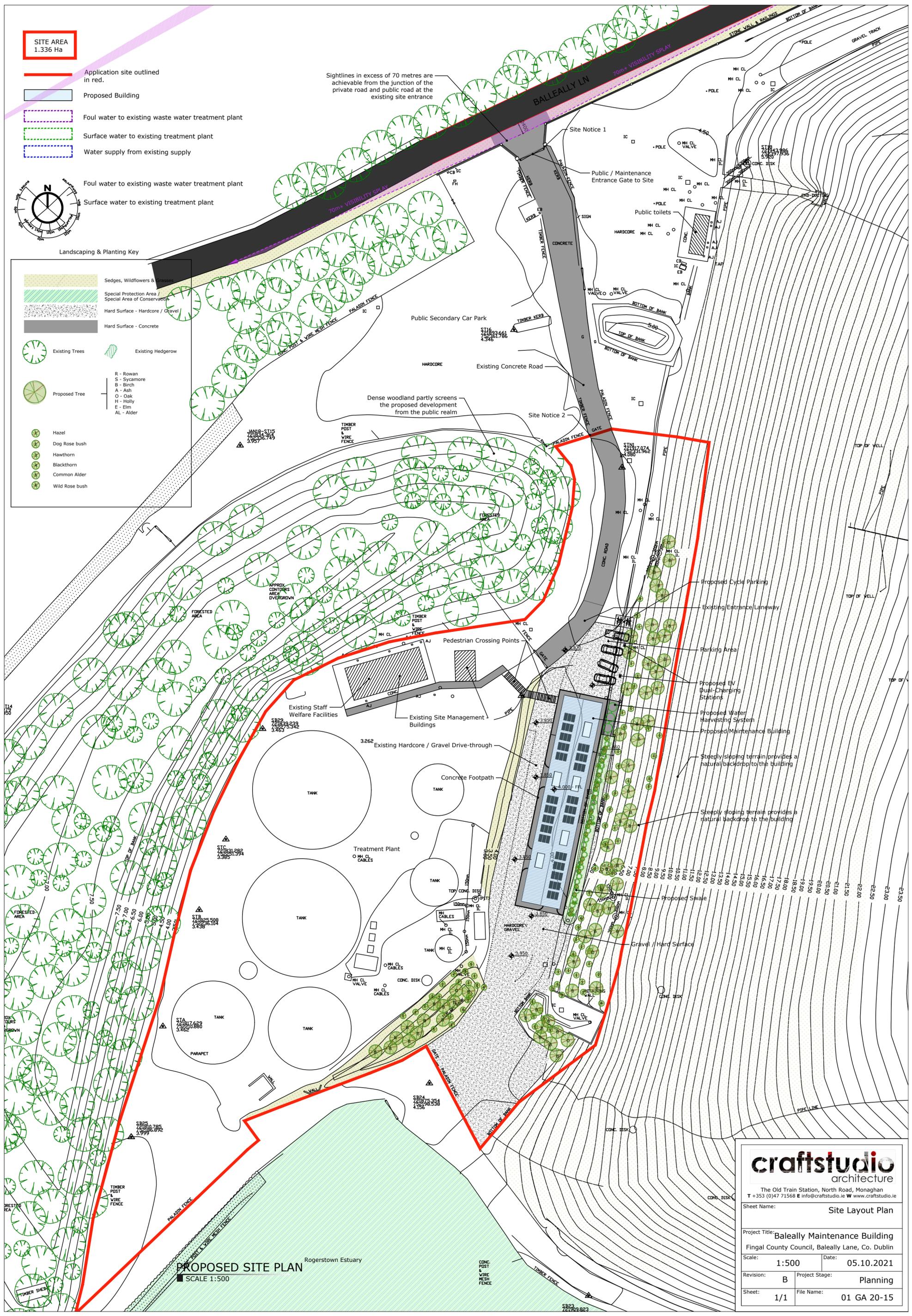
Existing Hedgerow

Proposed Tree

R - Rowan
S - Sycamore
B - Birch
A - Ash
O - Oak
H - Holly
E - Elm
AL - Alder

Hazel
Dog Rose bush
Hawthorn
Blackthorn
Common Alder
Wild Rose bush

Sightlines in excess of 70 metres are achievable from the junction of the private road and public road at the existing site entrance



PROPOSED SITE PLAN
SCALE 1:500

craftstudio
architecture

The Old Train Station, North Road, Monaghan
T +353 (0)47 71568 E info@craftstudio.ie W www.craftstudio.ie

Sheet Name: **Site Layout Plan**

Project Title: **Baleally Maintenance Building**
Fingal County Council, Baleally Lane, Co. Dublin

Scale: **1:500** Date: **05.10.2021**

Revision: **B** Project Stage: **Planning**

Sheet: **1/1** File Name: **01 GA 20-15**



4. CHARACTERISTICS OF EUROPEAN SITES

4.1 European Sites within 15 km of the Development

As an initial step in the identification of European sites within the potential zone of impact of the project, an assessment of aerial imagery and available protected species and habitats mapping datasets was carried out. There are 17 European sites within 15 km of the proposed project (see Figure 4.1). Table 4-1 lists the European sites, including their qualifying interests, conservation objectives and known threats to these sites (according to information provided by the NPWS www.npws.ie). The 17 sites are:

- Rogerstown Estuary SAC (site code 000208; 60m south)
- Rogerstown Estuary SPA (site code 004015; 65m south)
- Malahide Estuary SAC (site code 000205; 3.4 km south)
- Malahide Estuary SPA (site code 004025; 3.4 km south)
- Rockabill to Dalkey Island SAC (site code 003000; 6.1 km east)
- Skerries Islands SPA (site code 004122; 8.4 km north-east)
- Lambay Island SAC (site code 000204; 8.6 km east)
- Lambay Island SPA (site code 004069; 8.6 km east)
- Rockabill SPA (site code 004014; 9.5 km north-east)
- Baldoyle Bay SPA (site code 004016; 9.7 km south)
- Baldoyle Bay SAC (site code 000199; 9.8 km south)
- Ireland's Eye SPA (site code 004117; 12 km south-west)
- Ireland's Eye SAC (site code 002193; 12.4 km south-west)
- North Bull Island SPA (site code 004006; 13.3 km south)
- North Dublin Bay SAC (site code 000206; 13.3 km south)
- Howth Head SAC (site code 000202; 14.6 km south-west)
- Howth Head Coast SPA (site code 004113; 14.6 km south-west)

Figure 4-1 shows the location of the European sites in relation to the proposed development.

The full NPWS site synopses for the relevant designated sites are available in Appendix 2.

4.1.1 Conservation Objectives

According to the Habitats Directive, the *conservation status of a natural habitat* will be taken as 'favourable' within its biogeographic range when:

- Its natural range and areas 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 as defined below.



According to the Habitats Directive, the conservation status of a species means the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations. The conservation status will be taken as 'favourable' within its biogeographic range 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.

The specific conservation objectives for each site are available on www.npws.ie. These have been accessed for the sites listed in Table 4-1 on 1st March 2021. Detailed site-specific conservation objectives were available for the following sites:

- Rogerstown Estuary SAC (000208; published 14/08/2013)
- Rogerstown estuary SPA (site code 004015; 20/05/2013)
- Rockabill SPA (004014; published 08/05/2013)
- Rockabill to Dalkey Island SAC (003000; published 07/05/2013)
- Lambay Island SAC (000204; published 22/06/2013)
- Ireland's Eye SAC (002193; published 27/01/2017)
- Howth Head SAC (000202; published 06/12/2016)
- North Dublin Bay SAC (000206; published 06/11/2013)
- North Bull Island SPA (004006; published 09/03/2015)
- Baldoyle Bay SPA (004016; published 27/02/2013)
- Baldoyle Bay SAC (000199; published 19/11/2012)
- Malahide Estuary SPA (004025; published 16/08/2013)
- Malahide Estuary SAC (000205; published 27/05/2013)

Generic conservation objectives only were available for:

- Skerries Islands SPA (004122; published 07/04/2020)
- Lambay Island SPA (004069; published 07/04/2020)
- Ireland's Eye SPA (004117; published 07/04/2020)
- Howth Head Coast SPA (004113; published 07/04/2020)

Conservation objectives and conservation objectives supporting documents for these sites are available from the NPWS through the protected sites search portal at <https://www.npws.ie/protected-sites>.

Management plans have not been prepared for any of the sites.



Table 4-1: European Sites Within 15 km of Proposed Works

Designated Site (Site Code)	Direct-line Distance from Proposed Development (km)	Conservation Objectives	Qualifying Interests	Threats
Rogerstown estuary SAC (000208)	0.06 km	To maintain/restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected	<ul style="list-style-type: none"> • Estuaries [1130] • Mudflats and sandflats not covered by seawater at low tide [1140] • <i>Salicornia</i> and other annuals colonising mud and sand [1310] • Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330] • Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] • Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120] • Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] 	<p>High intensity threats:</p> <ul style="list-style-type: none"> • J02.01.02 Reclamation of land from sea, estuary or marsh (I) • I01 Invasive non-native species (I) • A07 Use of biocides, hormones and chemicals (O) • J02.12.01 Sea defense or coast protection works, tidal barrages (I) • K01.01 Erosion (I) <p>Medium intensity threats:</p> <ul style="list-style-type: none"> • D01.02 Roads, motorways (O) • G01.02 Walking, horseriding and non-motorised vehicles (B) • F02.03.01 Bait digging / collection (I) • G01.01 Nautical sports (I) • G02.01 Golf course (O) • A08 Fertilisation (O) • A04 Grazing (B) • E01.03 Dispersed habitation (O) • E03 Discharges (O)



Designated Site (Site Code)	Direct-line Distance from Proposed Development (km)	Conservation Objectives	Qualifying Interests	Threats
Rogerstown Estuary SPA (004015)	0.06 km	To maintain/restore the favourable conservation condition of the bird species for which the SPA has been selected.	<ul style="list-style-type: none"> • Greylag Goose (<i>Anser anser</i>) [A043] • Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046] • Shelduck (<i>Tadorna tadorna</i>) [A048] • Shoveler (<i>Anas clypeata</i>) [A056] • Oystercatcher (<i>Haematopus ostralegus</i>) [A130] • Ringed Plover (<i>Charadrius hiaticula</i>) [A137] • Grey Plover (<i>Pluvialis squatarola</i>) [A141] • Knot (<i>Calidris canutus</i>) [A143] • Dunlin (<i>Calidris alpina</i>) [A149] • Black-tailed Godwit (<i>Limosa limosa</i>) [A156] • Redshank (<i>Tringa totanus</i>) [A162] • Wetland and Waterbirds [A999] 	<p>High intensity threats:</p> <ul style="list-style-type: none"> • E03.01 Disposal of household / recreational facility waste (O) • I01 Invasive non-native species (I) • E03.02 Disposal of industrial waste (O) • A J02.01 Landfill, land reclamation and drying out, general (O) • 08 Fertilisation (O) <p>Medium intensity threats:</p> <ul style="list-style-type: none"> • A04 Grazing (O) • A04 Grazing (I) • G02.01 Golf course (O) • F02.03.01 Bait digging / collection (I) • G01.01 Nautical sports (I) • E01.03 Dispersed habitation (O) <p>Low intensity threats:</p> <ul style="list-style-type: none"> • F03.01 (I)
Malahide Estuary SAC (000205)	3.4 km	To maintain/restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II	<ul style="list-style-type: none"> • Mudflats and sandflats not covered by seawater at low tide [1140] 	<p>High intensity threat:</p> <ul style="list-style-type: none"> • D01.05 Bridge, viaduct (I) • G01.02 Walking, horseriding and non-motorised vehicles (I) • G01.01 Nautical sports (I)



Designated Site (Site Code)	Direct-line Distance from Proposed Development (km)	Conservation Objectives	Qualifying Interests	Threats
		species for which the SAC has been selected	<ul style="list-style-type: none"> • Salicornia and other annuals colonising mud and sand [1310] • Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330] • Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] • Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120] • Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] 	<ul style="list-style-type: none"> • J02.01.02 Reclamation of land from sea, estuary or marsh (I, O) • G01.03 Motorised vehicles (I) <p>Medium intensity threat:</p> <ul style="list-style-type: none"> • A08 Fertilisation • I01 Invasive non-native species • E01 Urbanised areas, human habitation <p>Low intensity threat:</p> <ul style="list-style-type: none"> • F03.01 Hunting (I)
Malahide Estuary SPA (004025)	3.4 km		<ul style="list-style-type: none"> • Great Crested Grebe (<i>Podiceps cristatus</i>) [A005] • Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046] • Shelduck (<i>Tadorna tadorna</i>) [A048] • Pintail (<i>Anas acuta</i>) [A054] • Goldeneye (<i>Bucephala clangula</i>) [A067] 	<p>High intensity threat:</p> <ul style="list-style-type: none"> • D01.01 Paths, tracks, cycling tracks (I) • D01.04 Railway lines, TGV (O, I) • E01 Urbanised areas, human habitation (O) • G01.01 Nautical sports (I) • J02.01.02 Reclamation of land from sea, estuary or marsh (I,O) <p>Medium intensity threat:</p> <ul style="list-style-type: none"> • A08 Fertilisation (O) • D01.05 Bridge, viaduct (O)



Designated Site (Site Code)	Direct-line Distance from Proposed Development (km)	Conservation Objectives	Qualifying Interests	Threats
			<ul style="list-style-type: none"> • Red-breasted Merganser (<i>Mergus serrator</i>) [A069] • Oystercatcher (<i>Haematopus ostralegus</i>) [A130] • Golden Plover (<i>Pluvialis apricaria</i>) [A140] • Grey Plover (<i>Pluvialis squatarola</i>) [A141] • Knot (<i>Calidris canutus</i>) [A143] • Dunlin (<i>Calidris alpina</i>) [A149] • Black-tailed Godwit (<i>Limosa limosa</i>) [A156] • Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157] • Redshank (<i>Tringa totanus</i>) [A162] • Wetland and Waterbirds [A999] 	<ul style="list-style-type: none"> • E02 Industrial or commercial areas (O) • G01.02 Walking, horseriding and non-motorised vehicles (I) • I01 Invasive non-native species (I)
Rockabill to Dalkey Island SAC (003000)	6.1 km		<ul style="list-style-type: none"> • Reefs [1170] • <i>Phocoena phocoena</i> (Harbour Porpoise) [1351] 	High intensity threats: <ul style="list-style-type: none"> • D03.02 Shipping lanes (B) • H06.01 Noise nuisance, noise pollution (B) • E03 Discharges (O) • F02.02 Professional active fishing (B)



Designated Site (Site Code)	Direct-line Distance from Proposed Development (km)	Conservation Objectives	Qualifying Interests	Threats
				Medium intensity threats: <ul style="list-style-type: none"> D02 Utility and service lines (O) Low intensity threats: <ul style="list-style-type: none"> J02.02 Removal of sediments (mud) (O) J02.11 Siltation rate changes, dumping, depositing of dredged deposits (O)
Skerries Islands SPA (004122)	8.4 km		<ul style="list-style-type: none"> Cormorant (<i>Phalacrocorax carbo</i>) [A017] Shag (<i>Phalacrocorax aristotelis</i>) [A018] Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046] Purple Sandpiper (<i>Calidris maritima</i>) [A148] Turnstone (<i>Arenaria interpres</i>) [A169] Herring Gull (<i>Larus argentatus</i>) [A184] 	Medium intensity threats: <ul style="list-style-type: none"> G01.02 Walking, horseriding and non-motorised vehicles (I)
Lambay Island SAC (000204)	8.6 km		<ul style="list-style-type: none"> Reefs [1170] Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] 	High intensity threats: <ul style="list-style-type: none"> A04 Grazing (I)



Designated Site (Site Code)	Direct-line Distance from Proposed Development (km)	Conservation Objectives	Qualifying Interests	Threats
			<ul style="list-style-type: none"> • <i>Halichoerus grypus</i> (Grey Seal) [1364] • <i>Phoca vitulina</i> (Harbour Seal) [1365] 	<p>Medium intensity threats:</p> <ul style="list-style-type: none"> • G01.01 Nautical sports (O) • E02 Industrial or commercial areas (O) <p>Low intensity threats:</p> <ul style="list-style-type: none"> • F02.03 Leisure fishing (O) • A03 Mowing / cutting of grassland (I) • F03.01 Hunting (I) • E01 Urbanised areas, human habitation (O)
Lambay Island SPA (004069)	8.6 km		<ul style="list-style-type: none"> • Fulmar (<i>Fulmarus glacialis</i>) [A009] • Cormorant (<i>Phalacrocorax carbo</i>) [A017] • Shag (<i>Phalacrocorax aristotelis</i>) [A018] • Greylag Goose (<i>Anser anser</i>) [A043] • Lesser Black-backed Gull (<i>Larus fuscus</i>) [A183] • Herring Gull (<i>Larus argentatus</i>) [A184] • Kittiwake (<i>Rissa tridactyla</i>) [A188] • Guillemot (<i>Uria aalge</i>) [A199] 	<p>Medium intensity threats:</p> <ul style="list-style-type: none"> • G01.01 Nautical sports (O) • A03 Mowing / cutting of grassland (I) • A04 Grazing (I) • D03.02 Shipping lanes (O) <p>Low intensity threats:</p> <ul style="list-style-type: none"> • E01.03 Dispersed habitation (I) • F03.01 Hunting



Designated Site (Site Code)	Direct-line Distance from Proposed Development (km)	Conservation Objectives	Qualifying Interests	Threats
			<ul style="list-style-type: none"> Razorbill (<i>Alca torda</i>) [A200] Puffin (<i>Fratercula arctica</i>) [A204] 	
Rockabill SPA (004014)	9.5 km		<ul style="list-style-type: none"> Purple Sandpiper (<i>Calidris maritima</i>) [A148] Roseate Tern (<i>Sterna dougallii</i>) [A192] Common Tern (<i>Sterna hirundo</i>) [A193] Arctic Tern (<i>Sterna paradisaea</i>) [A194] 	<p>High intensity threats:</p> <ul style="list-style-type: none"> D06 Other forms of transportation and communication (I) <p>Medium intensity threats:</p> <ul style="list-style-type: none"> G01.01 Nautical sports (O) <p>Low intensity threats:</p> <ul style="list-style-type: none"> G01.01 Nautical sports (I)
Baldoyle Bay SPA (004016)	9.7 km	To maintain/restore the favourable conservation condition of the bird species for which the SPA has been selected.	<ul style="list-style-type: none"> Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046] Shelduck (<i>Tadorna tadorna</i>) [A048] Ringed Plover (<i>Charadrius hiaticula</i>) [A137] Golden Plover (<i>Pluvialis apricaria</i>) [A140] Grey Plover (<i>Pluvialis squatarola</i>) [A141] 	<p>High intensity threats:</p> <ul style="list-style-type: none"> A08 Fertilisation (O) E01 Urbanised areas, human habitation (O) G02.01 Golf course (O) I01 Invasive non-native species (I) J02.01.02 Reclamation of land from sea, estuary or marsh (I) <p>Medium intensity threats:</p> <ul style="list-style-type: none"> D01.02 Roads, motorways (O) F02.03.01 Bait digging / collection (I) F03.01 Hunting (I)



Designated Site (Site Code)	Direct-line Distance from Proposed Development (km)	Conservation Objectives	Qualifying Interests	Threats
			<ul style="list-style-type: none"> • Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157] • Wetland and Waterbirds [A999] 	<ul style="list-style-type: none"> • G01.02 Walking, horseriding and non-motorised vehicles (I) • K02.03 Eutrophication (natural) (I)
Baldoyle Bay SAC (000199)	9.8 km	To maintain/restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected	<ul style="list-style-type: none"> • Mudflats and sandflats not covered by seawater at low tide [1140] • Salicornia and other annuals colonising mud and sand [1310] • Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330] • Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] 	<p>High intensity threats:</p> <ul style="list-style-type: none"> • G01.02 Walking, horseriding and non-motorised vehicles (I) • E01 Urbanised areas, human habitation (O) • G02.01 Golf course (O) • I01 Invasive non-native species (I) • G01.01.02 Non-motorized nautical sports (I) <p>Medium intensity threats:</p> <ul style="list-style-type: none"> • D01.02 Roads, motorways (O) • F02.03.01 Bait digging / collection (I) • F03.01 Hunting (I) • K02.03 Eutrophication (natural) (I) • J02.01.02 Reclamation of land from sea, estuary or marsh (I) • E03 Discharges (I)



Designated Site (Site Code)	Direct-line Distance from Proposed Development (km)	Conservation Objectives	Qualifying Interests	Threats
				<ul style="list-style-type: none"> • K03.06 Antagonism with domestic animals (I)
Ireland's Eye SPA (004117)	12 km		<ul style="list-style-type: none"> • Cormorant (<i>Phalacrocorax carbo</i>) [A017] • Herring Gull (<i>Larus argentatus</i>) [A184] • Kittiwake (<i>Rissa tridactyla</i>) [A188] • Guillemot (<i>Uria aalge</i>) [A199] • Razorbill (<i>Alca torda</i>) [A200] 	<p>High intensity threats:</p> <ul style="list-style-type: none"> • G01.02 Walking, horseriding and non-motorised vehicles (I) <p>Low intensity threats:</p> <ul style="list-style-type: none"> • F02.03 Leisure fishing (I)
Ireland's Eye SAC (002193)	12.4 km		<ul style="list-style-type: none"> • Perennial vegetation of stony banks [1220] • Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] 	<p>High intensity threats:</p> <ul style="list-style-type: none"> • J01 Fire and fire suppression (I) • G05.01 Trampling, overuse (I) • G02.09 Wildlife watching (I) • G01.02 Walking, horseriding and non-motorised vehicles (I) • A04.03 Abandonment of pastoral systems, lack of grazing (I) <p>Medium intensity threats:</p> <ul style="list-style-type: none"> • G01.01 Nautical sports (B)



Designated Site (Site Code)	Direct-line Distance from Proposed Development (km)	Conservation Objectives	Qualifying Interests	Threats
North Dublin Bay SAC (000206)	13.3 km	To maintain/restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected	<ul style="list-style-type: none"> • Mudflats and sandflats not covered by seawater at low tide [1140] • Annual vegetation of drift lines [1210] • <i>Salicornia</i> and other annuals colonising mud and sand [1310] • Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330] • Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] • Embryonic shifting dunes [2110] • Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120] • Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] * • Humid dune slacks [2190] • <i>Petalophyllum ralfsii</i> (Petalwort) [1395] 	<p>High intensity threat:</p> <ul style="list-style-type: none"> • E01 Urbanised areas, human habitation (O) • E02 Industrial or commercial areas (O) • E03 Discharges (O) • K03.06 Antagonism with domestic animals (O) <p>Medium intensity threat:</p> <ul style="list-style-type: none"> • A04 Grazing (I) • F02.03.01 Bait digging / collection (I) • G01.01 Nautical sports (I) • G01.02 Walking, horseriding and non-motorised vehicles (O) • G02.01 Golf course (O) • H01.03 Other point source pollution to surface water (I) • I01 Invasive non-native species (I) • J01.01 Burning down (I) <p>Low intensity threat:</p> <ul style="list-style-type: none"> • F02 Fishing and harvesting aquatic resources (I) • G05.05 Intensive maintenance of public parcs /cleaning of beaches (I)



Designated Site (Site Code)	Direct-line Distance from Proposed Development (km)	Conservation Objectives	Qualifying Interests	Threats
North Bull Island SPA (004006)	13.3 km	To maintain/restore the favourable conservation condition of the bird species for which the SPA has been selected.	<ul style="list-style-type: none"> • Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046] • Shelduck (<i>Tadorna tadorna</i>) [A048] • Teal (<i>Anas crecca</i>) [A052] • Pintail (<i>Anas acuta</i>) [A054] • Shoveler (<i>Anas clypeata</i>) [A056] • Oystercatcher (<i>Haematopus ostralegus</i>) [A130] • Golden Plover (<i>Pluvialis apricaria</i>) [A140] • Grey Plover (<i>Pluvialis squatarola</i>) [A141] • Knot (<i>Calidris canutus</i>) [A143] • Sanderling (<i>Calidris alba</i>) [A144] • Dunlin (<i>Calidris alpina</i>) [A149] • Black-tailed Godwit (<i>Limosa limosa</i>) [A156] • Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157] 	<p>High intensity threats:</p> <ul style="list-style-type: none"> • D01.05 Bridge, viaduct (I) • G01.02 Walking, horseriding and non-motorised vehicles (I) <p>Medium intensity threats:</p> <ul style="list-style-type: none"> • D01.02 Roads, motorways (O) • D03.02 Shipping lanes (O) • E01.01 Continuous urbanisation (O) • E02 Industrial or commercial areas (O) • E03 Discharges (I) • E03 Discharges (O) • F02.03.01 Bait digging / collection (I) • G01.01 Nautical sports (I) • G02.01 Golf course (I) <p>Low intensity threats:</p> <ul style="list-style-type: none"> • E01.04 Other patterns of habitation (I)

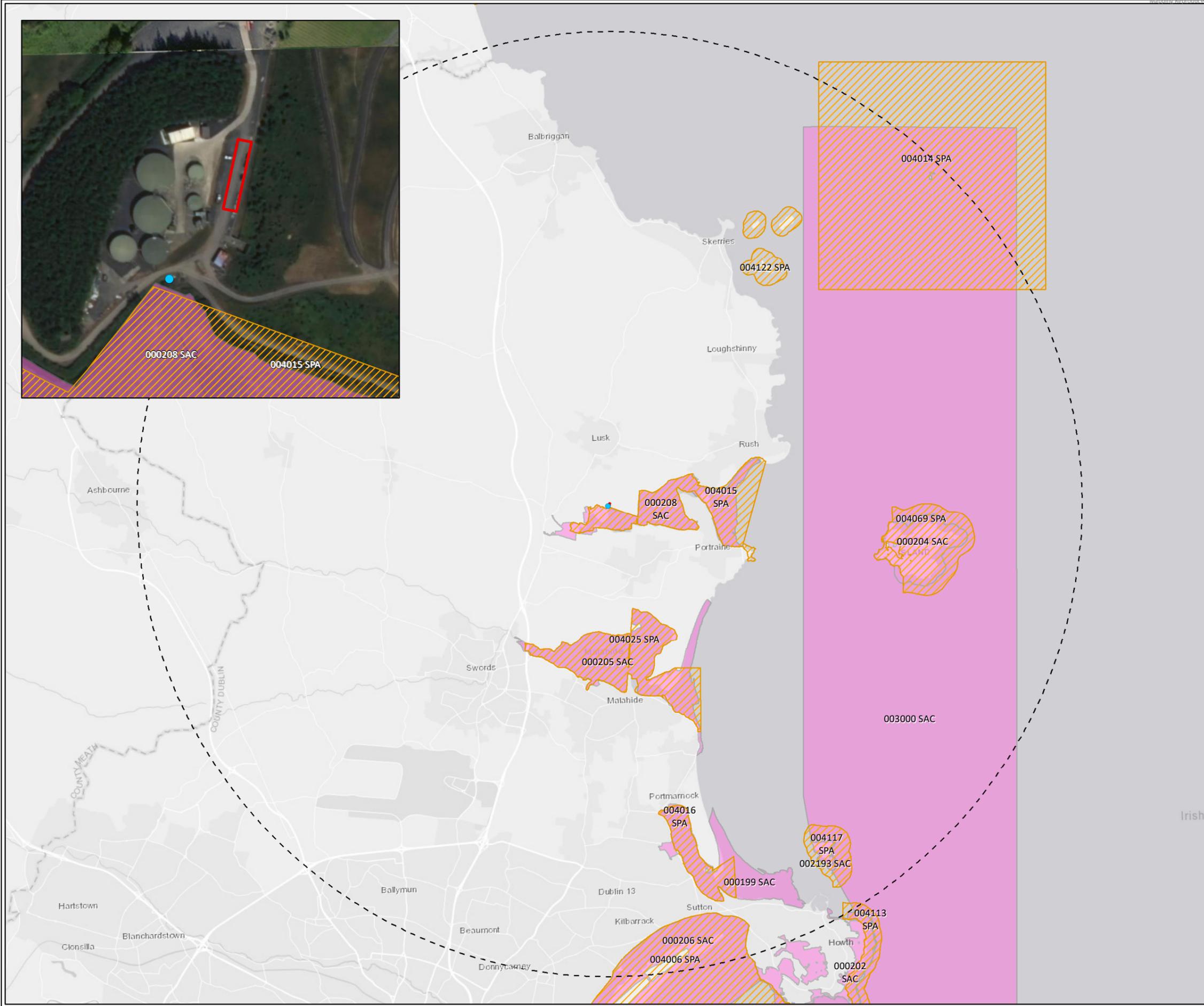


Designated Site (Site Code)	Direct-line Distance from Proposed Development (km)	Conservation Objectives	Qualifying Interests	Threats
			<ul style="list-style-type: none"> • Curlew (<i>Numenius arquata</i>) [A160] • Redshank (<i>Tringa totanus</i>) [A162] • Turnstone (<i>Arenaria interpres</i>) [A169] • Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179] • Wetland and Waterbirds [A999] 	
Howth Head SAC (000202)	14.6 km		<ul style="list-style-type: none"> • Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] • European dry heaths [4030] 	<p>High intensity threats:</p> <ul style="list-style-type: none"> • G01.02 Walking, horse riding and non-motorised vehicles (I) • C01 Mining and quarrying (B) • I01 Invasive non-native species (I) • J01.01 Burning down (I) <p>Medium intensity threats:</p> <ul style="list-style-type: none"> • G05.04 Vandalism (I) • D01.01 Paths, tracks, cycling tracks (I) • E01 Urbanised areas, human habitation (B) • A04.03 Abandonment of pastoral systems, lack of grazing (I)



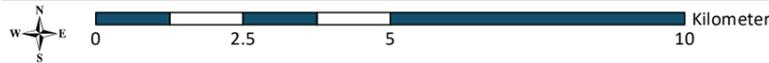
Designated Site (Site Code)	Direct-line Distance from Proposed Development (km)	Conservation Objectives	Qualifying Interests	Threats
				Low intensity threats: <ul style="list-style-type: none"> • C01.01.01 Sand and gravel quarries (I)
Howth Head Coast SPA (004113)	14.6 km		<ul style="list-style-type: none"> • Kittiwake (<i>Rissa tridactyla</i>) [A188] 	High intensity threats: <ul style="list-style-type: none"> • G01.02 Walking, horse riding and non-motorised vehicles (I) Low intensity threats: <ul style="list-style-type: none"> • J01.01 Burning down (I)

* indicates a priority habitat under EU Habitats Directive



- Surface Water Outfall
 - Proposed Shed Footprint
 - 15km Buffer of Site Boundary
 - Special Protection Area (SPA)
- Code, Name, Distance (km)*
- 004006, North Bull Island SPA, 13.33
 - 004014, Rockabill SPA, 9.49
 - 004015, Rogerstown Estuary SPA, 0.06
 - 004016, Baldoyle Bay SPA, 9.78
 - 004025, Malahide Estuary SPA, 3.37
 - 004069, Lambay Island SPA, 8.56
 - 004113, Howth Head Coast SPA, 14.64
 - 004117, Ireland's Eye SPA, 12
 - 004122, Skerries Islands SPA, 8.45
- Special Area of Conservation (SAC)
- Code, Name, Distance (km)*
- 000199, Baldoyle Bay SAC, 9.7
 - 000202, Howth Head SAC, 14.56
 - 000204, Lambay Island SAC, 8.55
 - 000205, Malahide Estuary SAC, 3.37
 - 000206, North Dublin Bay SAC, 13.34
 - 000208, Rogerstown Estuary SAC, 0.06
 - 002193, Ireland's Eye SAC, 12.42
 - 003000, Rockabill to Dalkey Island SAC, 6.14

TITLE:	European Sites within 15km of the Proposed Development
PROJECT:	Maintenance Shed at Rogerstown Park
FIGURE NO:	4.1
CLIENT:	Fingal County Council
SCALE:	1:120000
REVISION:	0
DATE:	04/03/2021
PAGE SIZE:	A3





4.2 Source-Pathway-Receptor Assessment

The source-pathway-receptor connectivity between the proposed maintenance building and the European sites within the potential zone of impact was assessed having regard to the ecology, structure and function of the sites' qualifying interests/special conservation interests.

Only Rogerstown Estuary SPA (004015) was determined to have a source-pathway-receptor connectivity to the proposed project.

- The proposed development will result in a temporary increase in noise levels and human activity within the site during construction. Wetland birds associated with the SPA may be sensitive to a change in existing background noise and activity levels.

The Rogerstown Estuary SAC (000208) was determined not to have a source-pathway-receptor connectivity to the project on the following basis: The SAC is not designated for the protection of any species, all qualifying interests are habitats and as such will not be disturbed by noise associated with the construction works. The proposed construction works are located such a distance from the SAC that there is no potential for effects by dust or lighting.

An existing surface water filter drain runs along the perimeter of the amenity area of the landfill and immediately adjacent to the lands proposed for the development of the maintenance building. This drain will not be interfered with by the works. The drain discharges from an outfall to the estuary. Water from this outfall enters a vegetated man-made channel running north-east to south-west. The channel drains to non-Annex 1 upper saltmarsh within the SAC/SPA (NPWS, 2013a; McCorry, 2007). The surface water drainage from this outfall is licensed under EPA Waste Licence W0009-03. There is an obligation on Fingal County Council to operate this surface water discharge in accordance with licence conditions. As such, any works that might interfere with the achievement of the ELVs must be controlled so as to ensure compliance with licence conditions. Thus, the works will not be permitted to result in any change in water quality entering the estuary.

All other European sites were determined not to have a source-pathway-receptor connectivity to the project due to distance from the proposed works.

4.2.1 Characteristics of Rogerstown Estuary SPA

Conservation objectives supporting documentation for Rogerstown Estuary SPA (NPWS, 2013b) indicates the area of upper saltmarsh south and south-east of the proposed site (subsite OUL04/New Haggard) (c.67m from proposed site) is used by foraging and roosting flocks of light-bellied brent geese (an SCI species for Rogerstown Estuary SPA). Other SCI species including black godwit and redshank were also recorded foraging and roosting within this subsite. The SCI species shelduck, shoveler and grey plover were also recorded roosting at the New Haggard subsite. Subsite OUL05 which is not recorded as being of significance for any SCI species is located to the south-east of the proposed development area.

NPWS mapping (NPWS, 2013b) indicates that light-bellied brent geese forage at New Haggard within up to c. 100m of the proposed development. The peak number recorded for this species foraging in this area (in conservation objectives supporting documentation) is 468.



It is noted that saltmarsh plants are eaten by light-bellied brent geese when their preferred food eelgrass *Zostera* sp. is absent or depleted. *Zostera* is an intertidal grass which grows around low tide level and as such the primary foraging areas for this species would be further out on the estuary's mudflats, as confirmed by observations of the highest numbers of low and inter-tidal foraging for this species at subsites OUL10 and OUL11 located over 1km east of the proposed site (NPWS, 2013b).

NPWS mapping (NPWS, 2013b) also indicates a total of 4 shelduck roosted in this area c. 200m from the proposed development, while 3-4 redshank were observed foraging c. in this area c. 200m from the proposed development.

The conservation objectives supporting documentation also indicates the presence of mixed -species roosts along the eastern and southern fringes of New Haggard, the closest of which are between 250-300m from the proposed development. Within these groups, flocks of up to 29 light-bellied brent geese, 154 shelduck, 3 shoveler, 33 redshank, 5 grey plover and 60 black-tailed godwit were recorded. Unpublished Birdwatch Ireland data is noted within the NPWS report to have included the highest numbers of pale-bellied brent geese and black-tailed godwit within the SPA roosting at subsite OUL04/ New Haggard.



5. POTENTIAL FOR SIGNIFICANT EFFECTS

5.1 Potential Disturbance of SCI Species at Rogerstown Estuary SPA

The potential for the disturbance of SPA birds by noise and human presence on site to result in significant effects on the conservation objectives of the Rogerstown Estuary SPA is discussed hereunder.

5.1.1 Visual Disturbance

The TIDE toolkit for waterbirds⁴ was used to define the potential zone of impact for disturbance to the special conservation interests of the SPA having regard to the known foraging and roosting ranges of the species in the SPA as documented in the Conservation Objectives supporting document.

Table 5-1: Potential Zone of Impact for Wetland Birds of Rogerstown SPA

Species	Nearest Roosting & Foraging Areas	Sensitivity to Visual Disturbance
Greylag Goose	Noted as frequenting Rogertown estuary and nearby grasslands. No records from OUL04. SPA supporting document records flock as using subsite OUL08 (Portrairie) located across the estuary c. 1.3 km south-east.	Not included in TIDE toolkit. Comparable sensitivity to light-bellied brent goose assumed.
Light-bellied Brent Goose	Foraging birds recorded c. 100m from the proposed site and mixed-species roosting groups occurring within 250-300m of the proposed site.	Light-bellied brent goose are noted within the TIDE waterbird guidance as having high sensitivity to moderate and high level visual disturbance. However, the guidance also gives distances of 105m and 205m for foraging and roosting respectively at which brent geese will react.
Shelduck	Shelduck were recorded roosting in limited numbers (4 birds) within c. 200m of the proposed site and have been recorded in larger numbers roosting in mixed-species groups occurring within 250-300m of the proposed site.	The TIDE toolkit notes shelduck as Having high sensitivity to visual disturbance and as not approaching construction works closer than 300m and being affected by visual disturbance up to 500m from the source.

⁴ https://www.tide-toolbox.eu/tidetools/waterbird_disturbance_mitigation_toolkit/



Species	Nearest Roosting & Foraging Areas	Sensitivity to Visual Disturbance
Shoveler	Recorded as roosting within the mixed-species groups occurring within 250-300m of the proposed site.	Information on the disturbance tolerance of shoveler was not available, however there were only low numbers of this species recorded and distance of mixed species roosting groups.
Oystercatcher	Widely distributed but no records from OUL04. Peak counts were in OUL10 and OUL11 over 1.3 km east.	Oystercatchers are relatively tolerant of disturbance stimuli and will habituate rapidly to ongoing activity
Ringed Plover	No records from OUL04. Peak counts were most frequently in OUL10 over 1.3 km east.	An extremely tolerant species that habituates to anthropogenic activities rapidly
Grey Plover	Recorded as roosting within the mixed-species groups occurring within 250-300m of the proposed site.	Grey plover are noted as being tolerant of human presence within 50-100m.
Knot	No records from OUL04. Peak numbers recorded at OU455, OUL09 and OUL10 (closest site is OUL09, c. 900m east).	Tolerant of visual disturbance, evidence of birds reacting to walkers at <75m when roosting.
Dunlin	No records from OUL04. Peak numbers recorded at OUL08 and OUL10 (both c. 1.3 km east/south-east).	Tolerant of visual disturbance, allowing approach as close as 50-90m before flushing.
Black-tailed Godwit	Recorded as roosting within the mixed-species groups occurring within 250-300m of the proposed site.	The TIDE guidance notes a paucity of information on black-tailed godwit disturbance-response but does describe one instance of disturbance caused by a moving crane jib c. 250m from the receptor.
Redshank	Redshank have been recorded foraging within c. 200m of the proposed site.	Relatively tolerant of visual disturbance, approaching within 70-115m of humans before flushing.
Wetland and Waterbirds	Other water bird species (additional to named SPA species listed above) recorded at OUL04 included Black-headed Gull, Curlew, Great Black-backed Gull, Herring Gull, Lapwing, Teal, Grey Heron, Ruff and Wigeon. No additional species were recorded at OUL05.	Curlew are noted as being wary of moderate to high-level visual disturbance and moderately sensitive to noise stimuli. Lapwing are tolerant of moderate visual disturbance and are thought to be only moderately sensitive to noise however little evidence is available so a precautionary approach is advised.



Species	Nearest Roosting & Foraging Areas	Sensitivity to Visual Disturbance
		The other additional species are not included in TIDE toolkit. Comparable sensitivity (i.e., moderate) is assumed.

Having regard to Table 5-1, much of the species associated with the SPA have a low sensitivity to visual disturbance with the exception of Greylag Goose, Light-bellied Brent Goose and Shelduck. The known nearest foraging and roosting areas within the estuary for these species is generally located beyond or at the limit of the documented disturbance distances for these species.

As such there is limited potential for visual disturbance. This, coupled with the fact that the proposed works location has the benefit of being surrounded by existing vegetation screens and berms, further reduces the potential for disturbance. As such, there is no potential for significant effects from the proposed works.

5.1.2 Noise

Noise levels were modelled using the MAS Environmental *Multiple Noise Sources Calculator - Point Source Model*⁵ as recommended in the TIDE toolkit guidance. Noise levels at distance bands of 100-400m from the proposed site were calculated based on simultaneous emissions of 91dBa (concrete cutting), 80dBa (concrete truck mixing) and 79dBa (40-ton excavator) at source. These would produce levels of 72dBa, 66dBa, 62dBa and 60dBa at receptors located 100m, 200m, 300m and 400m away respectively.

The TIDE waterbird guidance notes varying responses to noise disturbance for different species. Shelduck are noted as being subject to aural disturbance (at the bird) from 72dB upwards, while the species has been observed to react to approximately 30% of sudden noises above 60dB or any noise above 70dB. A high degree of habituation is also noted, with further exposure to sounds of the same or greater level resulting in no response to stimuli.

Redshank are noted as being sensitive to noise stimuli, particularly in conjunction with visual stimuli. As such a noise of up to 70dB (at the bird) is acceptable to the bird but with caution above 55dB.

Specific noise thresholds at receptor are not given for brent geese, black-tailed godwit, shoveler and grey plover however general thresholds (at the bird) are given as sudden single noises over 60dB and continuous/repetitive noise over 72dB (high-level disturbance stimuli); sudden noises of 55-60dB and continuous/repetitive noises from 60-72dB (moderate disturbance stimuli), and noise less than of 55dB (low-level disturbance stimuli).

If the modelled high noise level was continuous, high-level disturbance could occur within the section of OUL04 in the ZOI within 0-100m of the proposed site, which covers an area of c. 0.045 Ha, or approximately 0.2% of subsite OUL04. Sudden single noises over 60dB could occur at receptors (high-level disturbance) within the section of OUL04 in the ZOI within 0-400m of the proposed site. This ZOI represents a larger proportion of OUL04: 6.5 Ha or roughly 23% of subsite OUL04.

⁵ MAS (2006) <https://noisetools.net/noisecalculator>



As such, there is potential for foraging brent geese to be disturbed in the event of sudden noises over 60dB at source. Roosting Shelduck, foraging/roosting redshank and roosting shoveler, black-tailed godwit and grey plover could also potentially be disturbed by sudden noises over 60dB as these species have been recorded engaging in these activities within 400m of the proposed site.

As noted above however, shelduck were observed to react to only approximately 30% of sudden noises over 60dB and become habituated after initial occurrences. Habituation to repeated disturbance can also be expected to some degree for all species. In addition, the presence of the vegetated bank/hedge will reduce noise levels.

While the conservation objectives supporting document (NPWS 2013b) indicates mixed-species flocks of up to 400 birds roosting within the 400m/60dB potential high-level disturbance zone, the majority of birds roost outside this area (flocks of up to 3-5,000 birds roost further south within OUL04).

The primary users of the full area of subsite OUL04 are foraging brent geese, which could be subject to occasional disturbance affecting a maximum of c. 23% of this subsite. Considering the predicted intermittent nature of disturbance, existing physical barrier provided by the vegetated bank, availability of other foraging sites and potential for habituation, any disturbance effects on this species are unlikely to be significant. Potential for disturbance of other SCI species is also limited and unlikely to be significant, based on their recorded low levels of usage of the potentially disturbed zone and availability of alternative habitats nearby.

5.2 Potential Cumulative Effects

In considering whether the proposed development, by itself or in combination with other plans and projects, has the potential to affect the conservation objectives of the designated sites within 15 km of the proposed development, the following were considered:

- Fingal Development Plan 2017-2023;
- Fingal County Council Planning Enquiry System;
- Permitted projects in the vicinity of the development;
- Proposed projects in the vicinity of the development.

A planning search limited to applications submitted within the townlands overlapping (Balleally East) and adjacent to the development (Balleally West) during the previous five years was conducted on 1st March 2021.

No planning applications for projects within these townlands have been lodged during the previous five years.

The surrounding lands contain areas zoned as high amenity and open space, with lands zoned as rural, general employment, residential, residential area, community infrastructure, rural business and green belt present in the wider area.



5.3 Screening Assessment Criteria

The potential for effects arising from the proposed project (alone or in combination with other projects or plans) is has been considered having regard to the conservation objectives of the European site(s). The findings of the assessment are summarised in the screening matrix presented hereunder. The assessment has been made having regard to the guidance document ‘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).

5.4 Screening Matrix

Assessment Criteria	Discussion of Potential Effects
<p><i>Brief description of project or plan</i></p>	<p>The proposed development will comprise a two-storey detached maintenance building in Balleally Landfill Site, Lusk, Co. Dublin. The maintenance building will provide storage room for vehicles and equipment used to operate and maintain Rogerstown Park. The maintenance building will be approximately 8.5 m wide by 45m long with a total height of 8.2 m. The total floor area for the development is approximately 354m² comprising a ground floor area of approximately 315m² and a first-floor area of approximately 39m².</p> <p>The ground floor level will be divided into the following areas:</p> <ul style="list-style-type: none"> • Maintenance Shed for the storage of maintenance vehicles associated with Rogerstown Park. • Water Closet (WC) connected to existing foul drainage. • Equipment Store – a separately lockable storage room for general maintenance equipment. <p>The following areas are proposed at first floor level:</p> <ul style="list-style-type: none"> • Mezzanine Store – additional small item storage room accessible via stairs. <p>Vehicular access to the maintenance building will be provided from the existing access to the Leachate Treatment Plant area and three installed roller shutter doors.</p> <p>Construction will comprise:</p> <ul style="list-style-type: none"> • Excavation and installation of concrete foundations which will be poured in situ. • Construction of superstructure, consisting of a steel portal frame and reinforced concrete walls (to be poured in situ).



Assessment Criteria	Discussion of Potential Effects
	<p>The steel portal frame will be clad externally with profiled metal cladding. A concrete perimeter footpath will run around the building. This will be poured in situ.</p> <p>Once shuttering / formwork has been installed, braced and anchored, concrete placement will be carried out. Placement will be by chutes, pump or hopper as per the elevation of the pour. Typically pouring height should not be more than 1.5m above the allocated location in order to prevent segregation.</p> <p>The quantity of concrete required for each pour will be predetermined by the engineer relative to the formwork to be filled. Concrete compacting will be carried out after each pour by mechanical vibrator.</p> <p>Once concrete is cured (over several days) formwork will be removed. It should be noted that concrete works cannot be carried out under adverse weather conditions (very cold or very high temperatures, or wet conditions) as this can compromise the concrete strength.</p> <p>Concrete washout (chutes only) will be carried out at a designated concrete washout skip located at the works area.</p> <p>Surface water and foul water from the proposed development will be managed via the existing surface water management system and wastewater treatment plant respectively. Potable water supply will also be provided by a branched supply from the existing water services connection.</p> <p>The maintenance building equipment store will include as necessary mobile bund trays for the storage of small quantities of oils that may be utilised as part of general maintenance activities. It is also proposed that small access ramps will be installed at all access points to the main maintenance building to provide a contained/self-bunded area to prevent the uncontrolled migration of small spillages/leaks from stored equipment.</p> <p>Electrical and mechanical services will be provided internally for the purposes of lighting, heating, ventilation, security, mechanical plant (roller doors) etc. The proposed solar PV system shall be used to supply all proposed electrical systems in conjunction with a mains supply. It is proposed that a mains supply shall be established from the existing electrical substation. It is also proposed to provide electrical car charging points within the development.</p>
<p><i>Brief description of the Natura 2000 (European) Site Assessment criteria</i></p>	<p>There are 17 European sites within the potential zone of influence (15 km) of the proposed project:</p> <ul style="list-style-type: none"> • Rogerstown Estuary SAC (site code 000208; 60m south) • Rogerstown Estuary SPA (site code 004015; 65m south) • Malahide Estuary SAC (site code 000205; 3.4 km south) • Malahide Estuary SPA (site code 004025; 3.4 km south) • Rockabill to Dalkey Island SAC (site code 003000; 6.1 km east) • Skerries Islands SPA (site code 004122; 8.4 km north-east)



Assessment Criteria	Discussion of Potential Effects
	<ul style="list-style-type: none"> • Lambay Island SAC (site code 000204; 8.6 km east) • Lambay Island SPA (site code 004069; 8.6 km east) • Rockabill SPA (site code 004014; 9.5 km north-east) • Baldoyle Bay SPA (site code 004016; 9.7 km south) • Baldoyle Bay SAC (site code 000199; 9.8 km south) • Ireland’s Eye SPA (site code 004117; 12 km south-west) • Ireland’s Eye SAC (site code 002193; 12.4 km south-west) • North Bull Island SPA (site code 004006; 13.3 km south) • North Dublin Bay SAC (site code 000206; 13.3 km south) • Howth Head SAC (site code 000202; 14.6 km south-west) • Howth Head Coast SPA (site code 004113; 14.6 km south-west) <p>A hydrological connection between the proposed development area and Rogerstown Estuary SAC (000208) and Rogerstown Estuary SPA (004015) exists. This connection is via the existing surface water filter drain running c. 4-5m from the proposed development area which discharges from an outfall within c. 6 and 8m of the SAC and SPA respectively.</p> <p>The outfall is located c. 58m south-west of the proposed development area. Water from this outfall enters a vegetated man-made channel running north-east to south-west and then south-east to north-west.</p> <p>The boundaries of Rogerstown Estuary SAC and SPA run within and along this channel at a number of points. The channel drains to non-Annex 1 upper saltmarsh within the SAC/SPA (NPWS, 2013a).</p> <p>This connection is not representative of a source-pathway-receptor linkage between the proposed development area and Rogerstown Estuary SAC and Rogerstown Estuary SPA, however. This is due to the following: works will not interfere with the drain, and the surface water discharge is required to be operated by Fingal Co. Council in accordance with EPA Waste Licence W0009-03.</p> <p>The proposed construction works are located such a distance from the SAC that there is no potential for effects by dust or lighting.</p> <p>Existing screening is in place in the form of the landfill mound, a vegetated bank/hedge and leachate tanks/woodland to the east, south and west respectively.</p> <p>None of the other 15 European sites are hydrologically or otherwise connected with the proposed development area. In addition, the proposed development area (an existing hard standing) does not offer any habitat of value to SCI (Special Conservation Interest) bird species associated with surrounding SPAs.</p>
<p><i>Describe the individual elements of the project (either alone or in combination with</i></p>	<p>Construction noise and visual stimuli may result in limited disturbance of SCI species, with the presence of foraging brent geese having been noted within the potential ZOI for noise and visual disturbance in NPWS documentation.</p>



Assessment Criteria	Discussion of Potential Effects
<p><i>other plans or projects) likely to give rise to effects on the Natura 2000 sites.</i></p>	<p>Mixed-species roosts containing the SCI species light-bellied brent goose, redshank, black-tailed godwit, shelduck and shoveler have also been recorded as occurring within the potential noise/visual disturbance zone (NPWS 2013b).</p> <p>While there is potential for silt to be generated by the proposed works and transported towards Rogerstown Estuary SAC and Rogerstown Estuary SPA, no likely significant effects are predicted in this regard due to the limited scale of works and sedimentary nature of the substrates within Rogerstown Estuary.</p>
<p><i>Describe any likely direct, indirect or secondary effects of the project (either alone or in combination with other plans or projects) on the Natura 2000 site by virtue of:</i></p> <ul style="list-style-type: none"> ▪ <i>Size and scale;</i> ▪ <i>Land-take;</i> ▪ <i>Distance from Natura 2000 site or key features of the site;</i> ▪ <i>Resource requirements;</i> ▪ <i>Emissions;</i> ▪ <i>Excavation requirements;</i> ▪ <i>Transportation requirements;</i> ▪ <i>Duration of construction, operation etc.;</i> ▪ <i>Other.</i> 	<p>Size and scale, land-take and distance from European (Natura 2000) sites</p> <p>Potential Effects: Visual/noise disturbance to Rogerstown Estuary SPA SCI species</p> <p>The project is of limited scale, comprising a two-storey building c. 354m² in area. As such no likely significant effects are predicted in this regard.</p> <p>The project is not located within any European site and as such no land take from any European site will occur.</p> <p>The proximity of Rogerstown Estuary SPA means SCI bird species may be subject to visual and noise disturbance from proposed works.</p> <p>Potential for visual disturbance to foraging brent geese is extremely limited since the since an area no more than c. 450m² is encroached by the potential ZOI for visual disturbance for foraging brent geese (105m). There is limited potential for roosting shelduck and black-tailed godwit to be affected by visual disturbance due to recorded (based on their flushing distances when roosting and potential to roost within 200-250m of the proposed site). The probability of visual disturbance is reduced by the physical barrier provided by the vegetated bank/hedge screening the proposed site from subsite OUL04.</p> <p>There is potential for noise disturbance to affect up to c. 23% of subsite OUL04, with foraging brent geese being the group most affected. While mixed-species flocks of up to 400 birds roosting within the outer limits of the potential noise disturbance zone, the majority of birds roost outside this area (flocks of up to 3-5,000 birds roost further south within OUL04).</p> <p>Considering the predicted intermittent nature of disturbance, existing physical barrier, site usage patterns, availability of other foraging/roosting sites and potential for habituation, any disturbance effects on SCI species are unlikely to be significant.</p> <p>As such no likely significant effects on SCI species arising from noise and/or visual disturbance are predicted.</p> <p>Resource requirements and Excavation requirements</p> <p>Potential Effects: None</p> <p>There will be no resource requirements or excavation requirements from any European site as a result of the development. Excavation requirements within the proposed site will be minimal. Therefore, no direct or indirect likely significant effects on any European site will occur.</p>



Assessment Criteria	Discussion of Potential Effects
	<p>Emissions</p> <p>Potential Effects: <i>None</i></p> <p>The hydrological connection identified is not representative of a source-pathway-receptor linkage between the proposed development area and Rogerstown Estuary SAC and Rogerstown Estuary SPA. This is due to the following: works will not interfere with the drain, and the surface water discharge is required to be operated by Fingal Co. Council in accordance with EPA Waste Licence W0009-03.</p> <p>The proposed construction works are located such a distance from the SAC that there is no potential for effects by dust or lighting.</p> <p>No likely significant effects arising from siltation are predicted due to the limited scale of works and sedimentary nature of the substrates within Rogerstown Estuary.</p> <p>During the operational phase, foul water from the proposed development will be managed using the existing system which discharges leachate directly to Portrairie WWTP via a rising main and pipeline. Surface water runoff will be managed using the existing surface water management system.</p> <p>The maintenance building equipment store will include as necessary mobile bund trays for the storage of small quantities of oils that may be utilised as part of general maintenance activities. It is also proposed that small access ramps will be installed at all access points to the main maintenance building to provide a contained/self-bunded area to prevent the uncontrolled migration of small spillages/leaks from stored equipment.</p> <p>Transportation requirements</p> <p>Potential Effects: <i>None.</i></p> <p>Site access will not traverse any European site. No likely significant effects arising from transportation requirements are envisaged.</p> <p>Duration of Construction and Operation</p> <p>Potential Effects: <i>None.</i></p> <p>Construction activities are predicted to last approximately 7-9 months.</p> <p>The operational phase will be ongoing into the foreseeable future.</p> <p>Cumulative effects</p> <p>Potential Effects: <i>None.</i></p>



Assessment Criteria	Discussion of Potential Effects
	<p>No planning applications for projects within the townlands overlapping (Balleally East) and adjacent to the proposed development (Balleally West) have been lodged during the previous five years.</p> <p>The surrounding lands contain areas zoned as high amenity and open space, with lands zoned as rural, general employment, residential, residential area, community infrastructure, rural business and green belt present in the wider area.</p> <p>Due to the limited scale of the proposed development and absence of other proposed projects in the vicinity, no likely significant cumulative effects in conjunction with other projects are predicted.</p>
<p><i>Describe any likely changes to the site arising as a result of:</i></p> <ul style="list-style-type: none"> ▪ <i>Reduction of habitat area;</i> ▪ <i>Disturbance of key species;</i> ▪ <i>Habitat or species fragmentation;</i> ▪ <i>Reduction in species density;</i> ▪ <i>Changes in key indicators of conservation value;</i> ▪ <i>Climate change.</i> 	<p>There is potential for disturbance of key species associated with Rogerstown Estuary SPA to arise from visual/noise stimuli associated with construction activities.</p> <p>The probability of visual disturbance is limited, while noise disturbance could affect foraging brent geese and roosting SCI species. Effects are predicted to be temporary and unlikely to be significant.</p> <p>No potential for fragmentation or reduction of habitats, reduction in species density and/or changes in key indicators of conservation value was identified for Rogerstown Estuary SAC and Rogerstown Estuary SPA.</p>
<p><i>Describe any likely effects on the Natura 2000 site as a whole in terms of:</i></p> <ul style="list-style-type: none"> ▪ <i>Interference with the key relationships that define the structure of the site;</i> ▪ <i>Interference with key relationships that define the function of the site.</i> 	<p>No likely significant effects in terms of the key relationships that define the structure and function of any European sites are predicted.</p>
<p><i>Provide indicators of significance as a result of the identification of effects set out above in terms of:</i></p> <ul style="list-style-type: none"> ▪ <i>loss,</i> ▪ <i>fragmentation,</i> ▪ <i>disruption,</i> ▪ <i>disturbance,</i> 	<p>No likely significant effects in terms of <i>loss, fragmentation, disruption, disturbance or changes to key elements</i> of any European sites are predicted.</p>



Assessment Criteria	Discussion of Potential Effects
<ul style="list-style-type: none"> ▪ <i>change to key elements of the site (e.g. water quality etc.).</i> 	
<p><i>Describe from the above those elements of the project or plan, or combination of elements, where the above effects are likely to be significant or where the scale of magnitude of effects is not known.</i></p>	<p>No elements of the proposed project are likely to result in significant effects.</p>



5.5 Stage One Screening Conclusion

It is concluded beyond reasonable scientific doubt that there are not likely to be significant effects from the proposed development on any European sites, either alone or in combination with other plans or projects.

See Appendix 1 for Findings of No Significant Effects Report.



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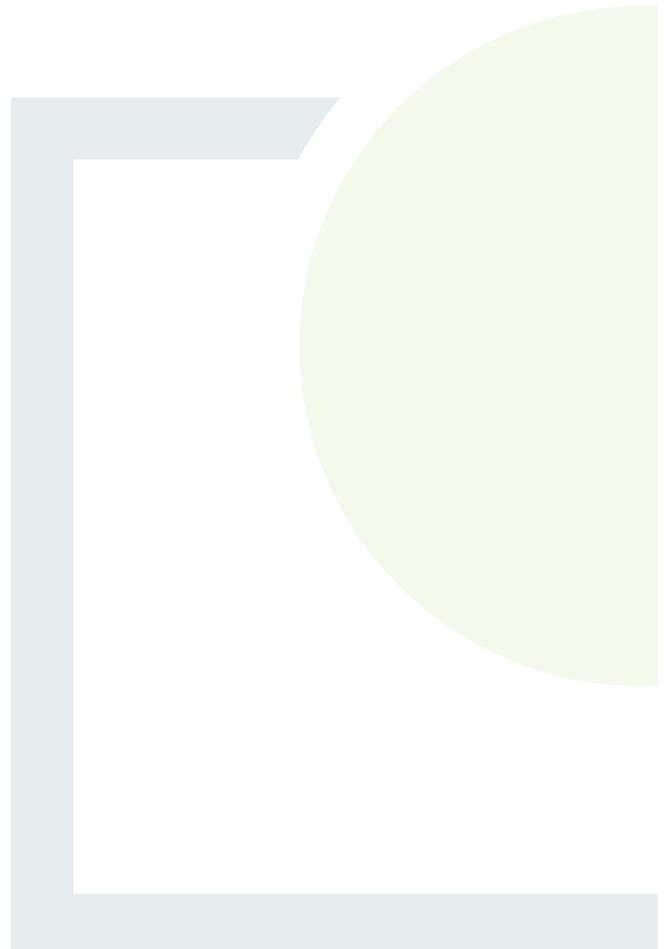


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CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE & PLANNING

APPENDIX 1

Finding of No Significant
Effects Report



Finding of No Significant Effects Report

<p><i>Name and location of the Natura 2000 sites</i></p>	<p>The proposed project is not located within any European site. A total of 17 European sites are located within 15 km of the proposed development:</p> <ul style="list-style-type: none"> • Rogerstown Estuary SAC (site code 000208; 60m south) • Rogerstown Estuary SPA (site code 004015; 65m south) • Malahide Estuary SAC (site code 000205; 3.4 km south) • Malahide Estuary SPA (site code 004025; 3.4 km south) • Rockabill to Dalkey Island SAC (site code 003000; 6.1 km east) • Skerries Islands SPA (site code 004122; 8.4 km north-east) • Lambay Island SAC (site code 000204; 8.6 km east) • Lambay Island SPA (site code 004069; 8.6 km east) • Rockabill SPA (site code 004014; 9.5 km north-east) • Baldoyle Bay SPA (site code 004016; 9.7 km south) • Baldoyle Bay SAC (site code 000199; 9.8 km south) • Ireland’s Eye SPA (site code 004117; 12 km south-west) • Ireland’s Eye SAC (site code 002193; 12.4 km south-west) • North Bull Island SPA (site code 004006; 13.3 km south) • North Dublin Bay SAC (site code 000206; 13.3 km south) • Howth Head SAC (site code 000202; 14.6 km south-west) • Howth Head Coast SPA (site code 004113; 14.6 km south-west) <p>A hydrological connection between the proposed development area and Rogerstown Estuary SAC (000208) and Rogerstown Estuary SPA (004015) exists. This connection is via the existing surface water filter drain running c. 4-5m from the proposed development area which discharges from an outfall within c. 6 and 8m of the SAC and SPA respectively.</p> <p>The outfall is located c. 58m south-west of the proposed development area. Water from this outfall enters a vegetated man-made channel running north-east to south-west and then south-east to north-west. The boundaries of Rogerstown Estuary SAC and SPA run within and along this channel at a number of points. The channel drains to non-Annex 1 upper saltmarsh within the SAC/SPA (NPWS, 2013a).</p> <p>This connection is not representative of a source-pathway-receptor linkage between the proposed development area and Rogerstown Estuary SAC and Rogerstown Estuary SPA. This is due to the following: works will not interfere with the drain, and the surface water discharge is required to be operated by Fingal Co. Council in accordance with EPA Waste Licence W0009-03.</p>
<p><i>Description of the project or plan</i></p>	<p>The proposed development will comprise a two-storey detached maintenance building in Balleally Landfill Site, Lusk, Co. Dublin. The maintenance building will provide storage room for vehicles and equipment used to operate and maintain Rogerstown Park The maintenance building, will be approximately 8.5 m wide by 45m long with a total height of 8.2 m.</p>

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The total floor area for the development is approximately 354m² comprising a ground floor area of approximately 315m² and a first-floor area of approximately 39m².

The ground floor level will be divided into the following areas:

- Maintenance Shed for the storage of maintenance vehicles associated with Rogerstown Park.
- Water Closet (WC) connected to existing foul drainage.
- Equipment Store – a separately lockable storage room for general maintenance equipment.

The following areas are proposed at first floor level:

- Mezzanine Store – additional small item storage room accessible via stairs.

Vehicular access to the maintenance building will be provided from the existing access to the Leachate Treatment Plant area and three installed roller shutter doors.

Construction will comprise:

- Excavation and installation of concrete foundations which will be poured in situ.
- Construction of superstructure, consisting of a steel portal frame and reinforced concrete walls (to be poured in situ). The steel portal frame will be clad externally with profiled metal cladding. A concrete perimeter footpath will run around the building. This will be poured in situ.

Once shuttering / formwork has been installed, braced and anchored, concrete placement will be carried out. Placement will be by chutes, pump or hopper as per the elevation of the pour. Typically pouring height should not be more than 1.5m above the allocated location in order to prevent segregation. The quantity of concrete required for each pour will be predetermined by the engineer relative to the formwork to be filled. Concrete compacting will be carried out after each pour by mechanical vibrator. Once concrete is cured (over several days) formwork will be removed. It should be noted that concrete works cannot be carried out under adverse weather conditions (very cold or very high temperatures, or wet conditions) as this can compromise the concrete strength.

Concrete washout (chutes only) will be carried out at a designated concrete washout skip located at the works area.

Finding of No Significant Effects Report

	<p>Surface water and foul water from the proposed development will be managed via the existing surface water management system and wastewater treatment plant respectively. Potable water supply will also be provided by a branched supply from the existing water services connection.</p> <p>The maintenance building equipment store will include as necessary mobile bund trays for the storage of small quantities of oils that may be utilised as part of general maintenance activities. It is also proposed that small access ramps will be installed at all access points to the main maintenance building to provide a contained/self-bunded area to prevent the uncontrolled migration of small spillages/leaks from stored equipment.</p> <p>Electrical and mechanical services will be provided internally for the purposes of lighting, heating, ventilation, security, mechanical plant (roller doors) etc. The proposed solar PV system shall be used to supply all proposed electrical systems in conjunction with a mains supply. It is proposed that a mains supply shall be established from the existing electrical substation. It is also proposed to provide electrical car charging points within the development.</p>
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<p><i>Is the Project or Plan directly connected with or necessary to the management of the site (provide details)?</i></p>	<p>No.</p>
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<p><i>Are there other projects or plans that together with the project of plan being assessed could affect the site (provide details)?</i></p>	<p>No planning applications for projects within the townlands overlapping (Balleally East) and adjacent to the proposed development (Balleally West) have been lodged during the previous five years.</p> <p>The surrounding lands contain areas zoned as high amenity and open space, with lands zoned as rural, general employment, residential, residential area, community infrastructure, rural business and green belt present in the wider area.</p> <p>Due to the limited scale of the proposed development and absence of other proposed projects in the vicinity, no likely significant cumulative effects in conjunction with other projects are predicted.</p>
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Assessment of Effects

<p><i>Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 site</i></p>	<p>There is potential for disturbance of key species associated with Rogerstown Estuary SPA to arise from visual/noise stimuli associated with construction activities. The probability of visual disturbance is limited, while noise disturbance could affect foraging brent geese and roosting SCI species. Effects are predicted to be temporary and unlikely to be significant.</p>
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<p><i>Explain why these effects are not considered significant</i></p>	<p>Potential for visual disturbance to foraging brent geese is extremely limited since the since an area no more than c. 450m² is encroached by the potential ZOI for visual disturbance for foraging brent geese (105m). There is limited potential for roosting shelduck and black-tailed godwit to be affected by visual disturbance due to recorded (based on their flushing distances when roosting and potential to roost within 200-250m of the proposed site).</p> <p>The probability of visual disturbance is reduced by the physical barrier provided by the vegetated bank/hedge screening the proposed site from subsite OUL04.</p>
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Finding of No Significant Effects Report

	<p>There is potential for noise disturbance to affect up to c. 23% of subsite OUL04, with foraging brent geese being the group most affected. While mixed-species flocks of up to 400 birds roosting within the outer limits of the potential noise disturbance zone, the majority of birds roost outside this area (flocks of up to 3-5,000 birds roost further south within OUL04).</p> <p>Considering the predicted intermittent nature of disturbance, existing physical barrier, site usage patterns, availability of other foraging/roosting sites and potential for habituation, any disturbance effects on SCI species are unlikely to be significant.</p> <p>A such no likely significant effects on SCI species arising from noise and/or visual disturbance are predicted.</p>
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Name of Agency or Body Consulted	Summary of Response
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N/A	N/A
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Data Collected to Carry out the Assessment

<i>Who carried out the assessment</i>	<i>Sources of Data</i>	<i>Level of assessment completed</i>	<i>Where can the full results of the assessment be accessed and viewed</i>
<p>This evaluation was completed by Fehily Timoney and Company</p>	<ul style="list-style-type: none"> Information on the designated nature conservation sites within 15km of the study area was obtained from the NPWS website and metadata available online from the NPWS mapping system (http://webgis.npws.ie/npwsviewer/). Information on the waterbody catchments in the development area was obtained from the Water Framework Directive Water Mapping Information System http://gis.epa.ie/Envision OSI Aerial photography and 1:50000 mapping. Google maps Google street view Site description and photographs from FT environmental scientist National Biodiversity Data Centre mapping and datasets Fingal County Council website 	<p>Appropriate Assessment Screening (Stage One)</p>	<p>Fingal County Council</p>

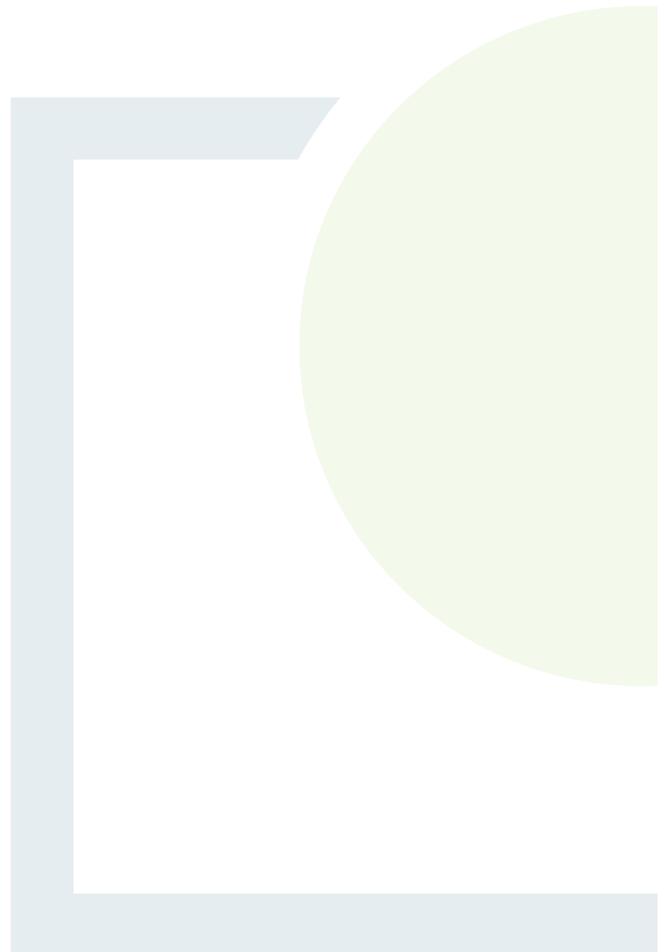


**FEHILY
TIMONEY**

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APPENDIX 2

European Site Synopses





Site Name: Malahide Estuary SAC

Site Code: 000205

Malahide Estuary is situated immediately north of Malahide and east of Swords in Co. Dublin. It is the estuary of the River Broadmeadow. The site is divided by a railway viaduct which was built in the 1800s.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

- | |
|-------------------------------------|
| [1140] Tidal Mudflats and Sandflats |
| [1310] <i>Salicornia</i> Mud |
| [1330] Atlantic Salt Meadows |
| [1410] Mediterranean Salt Meadows |
| [2120] Marram Dunes (White Dunes) |
| [2130] Fixed Dunes (Grey Dunes)* |

The outer part of the estuary is mostly cut off from the sea by a large sand spit, known as 'the island'. The outer estuary drains almost completely at low tide, exposing sand and mud flats. There is a large bed of Eelgrass (Dwarf Eelgrass, *Zostera noltii*, and Narrow-leaved Eelgrass, *Z. angustifolia*) in the north section of the outer estuary, along with Beaked Tasselweed (*Ruppia maritima*) and extensive mats of green algae (*Enteromorpha* spp., *Ulva lactuca*). Common Cord-grass (*Spartina anglica*) is also widespread in this sheltered part of the estuary.

The dune spit has a well developed outer dune ridge dominated by Marram Grass (*Ammophila arenaria*). The dry areas of the stabilised dunes have a dense covering of Burnet Rose (*Rosa pimpinellifolia*), Red Fescue (*Festuca rubra*) and species such as Yellow-wort (*Blackstonia perfoliata*), Autumn Gentian (*Gentianella amarella*), Hound's-tongue (*Cynoglossum officinale*), Carlina Thistle (*Carlina vulgaris*) and Pyramidal Orchid (*Anacamptis pyramidalis*). Much of the interior of the spit is taken up by a golf course. The inner stony shore has frequent Sea-holly (*Eryngium maritimum*). Well-developed saltmarshes occur at the tip of the spit. Atlantic salt meadow is the principle type and is characterised by species such as Sea-purslane (*Halimolobos portulacoides*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Sea Arrowgrass (*Triglochin maritima*) and Common Saltmarsh-grass (*Puccinellia maritima*). Elsewhere in the outer estuary, a small area of Mediterranean salt meadow occurs which is characterised by the presence of Sea Rush (*Juncus maritimus*). Below the salt marshes there are good examples of pioneering glasswort (*Salicornia* spp.) swards and other annual species, typified by *S. dolichostachya* and Annual Sea-blite (*Suaeda maritima*).

The inner estuary does not drain at low tide apart from the extreme inner part. Here, patches of saltmarsh and salt meadows occur, with Sea Aster, Sea Plantain (*Plantago maritima*) and Sea Club-rush (*Scirpus maritimus*). Beaked Tasselweed occurs in one of the channels.

The site includes a fine area of rocky shore south-east of Malahide and extending towards Portmarnock. This represents the only continuous section through the fossiliferous Lower Carboniferous rocks in the Dublin Basin, and is the type locality for several species of fossil coral.

The estuary is an important wintering bird site and holds an internationally important population of Brent Goose and nationally important populations of a further 15 species. Average maximum counts during the 1995/96-1997/98 period were: Brent Goose 1217; Great Crested Grebe 52; Mute Swan 106; Shelduck 471; Pochard 200; Goldeneye 333; Red-breasted Merganser 116; Oystercatcher 1228; Golden Plover 2123; Grey Plover 190; Redshank 454; Wigeon 50; Teal 78; Ringed Plover 106; Knot 858; Dunlin 1474; Greenshank 38; Pintail 53; Black-tailed Godwit 345; Bar-tailed Godwit 99. The high numbers of diving birds reflects the lagoon-type nature of the inner estuary.

The estuary also attracts migrant species such as Ruff, Curlew Sandpiper, Spotted Redshank and Little Stint. Breeding birds of the site include Ringed Plover, Shelduck and Mallard. Up to the 1950s there was a major tern colony at the southern end of the island and the habitat remains suitable for these birds.

The inner part of the estuary is heavily used for water sports. A section of the outer estuary has recently been infilled for a marina and housing development.

This site is a fine example of an estuarine system with all the main habitats represented. The site is important ornithologically, with a population of Brent Goose of international significance.

SITE SYNOPSIS

SITE NAME: MALAHIDE ESTUARY SPA

SITE CODE: 004025

Malahide Estuary is situated in north Co. Dublin, between the towns of Malahide and Swords. The site encompasses the estuary, saltmarsh habitats and shallow subtidal areas at the mouth of the estuary. A railway viaduct, built in the 1800s, crosses the site and has led to the inner estuary becoming lagoonal in character and only partly tidal. Much of the outer part of the estuary is well-sheltered from the sea by a large sand spit, known as "The Island". This spit is now mostly converted to golf-course. The outer part empties almost completely at low tide and there are extensive intertidal flats exposed. Substantial stands of eelgrass (both *Zostera noltii* and *Z. angustifolia*) occur in the sheltered part of the outer estuary, along with Tasselweed (*Ruppia maritima*). Green algae, mostly *Ulva* spp., are frequent on the sheltered flats. Common Cord-grass (*Spartina anglica*) is well established in the outer estuary and also in the innermost part of the site. The intertidal flats support a typical macro-invertebrate fauna, with polychaete worms (*Arenicola marina* and *Hediste diversicolor*), bivalves such as *Cerastoderma edule*, *Macoma balthica* and *Scrobicularia plana*, the small gastropod *Hydrobia ulvae* and the crustacean *Corophium volutator*. Salt marshes, which provide important roosts during high tide, occur in parts of the outer estuary and in the extreme inner part of the inner estuary. These are characterised by such species as Sea Purslane (*Halimione portulacoides*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Sea Arrowgrass (*Triglochin maritima*) and Common Saltmarsh-grass (*Puccinellia maritima*).

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Great Crested Grebe, Light-bellied Brent Goose, Shelduck, Pintail, Goldeneye, Red-breasted Merganser, Oystercatcher, Golden Plover, Grey Plover, Knot, Dunlin, Black-tailed Godwit, Bar-tailed Godwit and Redshank. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

This site is of high importance for wintering waterfowl and supports a particularly good diversity of species. It has internationally important populations of Light-bellied Brent Goose (1,104 individuals or 5% of the all-Ireland total) and Black-tailed Godwit (409 individuals or 2.9% of the all-Ireland total) - figures given here and below are mean peaks for the five winters 1995/96-1999/2000. Furthermore, the site supports nationally important populations of an additional 12 species: Great Crested Grebe (63), Shelduck (439), Pintail (58), Goldeneye (215), Red-breasted Merganser (99), Oystercatcher (1,360), Golden Plover (1,843), Grey Plover (201), Knot (915), Dunlin (1,594), Bar-tailed Godwit (156) and Redshank (581). The high numbers of diving ducks reflects the lagoon-type nature of the inner estuary, and this is one of the few sites in eastern Ireland where substantial numbers of Goldeneye can be found.

A range of other species occurs, including Mute Swan (37), Pochard (36), Ringed Plover (86), Lapwing (1,542), Curlew (548), Greenshank (38) and Turnstone (112).

The estuary also attracts other migrant wader species such as Ruff, Curlew Sandpiper, Spotted Redshank and Little Stint. These occur mainly in autumn, though occasionally in spring and winter.

Breeding birds of the site include Ringed Plover, Shelduck and Mallard. Up to the 1950s there was a major tern colony at the southern end of Malahide Island. Grey Herons breed nearby and feed regularly within the site.

Malahide Estuary SPA is a fine example of an estuarine system, providing both feeding and roosting areas for a range of wintering waterfowl. The lagoonal nature of the inner estuary is of particular value as it increases the diversity of birds which occur. The site is of high conservation importance, with internationally important populations of Light-bellied Brent Goose and Black-tailed Godwit, and nationally important populations of a further 12 species. Two of the species which occur regularly (Golden Plover and Bar-tailed Godwit) are listed on Annex I of the E.U. Birds Directive. Malahide Estuary (also known as Broadmeadow Estuary) is a Ramsar Convention site.

23.8.2013

SITE SYNOPSIS

SITE NAME: NORTH BULL ISLAND SPA

SITE CODE: 004006

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

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

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Light-bellied Brent Goose, Shelduck, Teal, Pintail, Shoveler, Oystercatcher, Golden Plover, Grey Plover, Knot, Sanderling, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Turnstone and Black-headed Gull. The site is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

The North Bull Island SPA is of international importance for waterfowl on the basis that it regularly supports in excess of 20,000 waterfowl. The site supports internationally important populations of three species, Light-bellied Brent Goose (1,548), Black-tailed Godwit (367) and Bar-tailed Godwit (1,529) - all figures are mean peaks for the five winters between 1995/96 and 1999/2000. The site is one of the most important in the country for Light-bellied Brent Goose. A further 14 species have populations of national importance – Shelduck (1,259), Teal (953), Pintail (233), Shoveler (141), Oystercatcher (1,784), Grey Plover (517), Golden Plover (2,033), Knot (2,837), Sanderling (141), Dunlin (4,146), Curlew (937), Redshank (1,431), Turnstone (157) and Black-headed Gull (2,196). The populations of Pintail and Knot are of particular note as they comprise 14% and 10% respectively of the all-Ireland population totals. Other species that occur regularly in winter include Grey Heron, Little Egret, Cormorant, Wigeon, Goldeneye, Red-breasted Merganser, Ringed Plover and Greenshank. Gulls are a feature of the site during winter and, along with the nationally important population of Black-headed Gull (2,196), other species that occur include Common Gull (332) and Herring Gull (331). While some of the birds

also frequent South Dublin Bay and the River Tolka Estuary for feeding and/or roosting purposes, the majority remain within the site for much of the winter. The wintering bird populations have been monitored more or less continuously since the late 1960s and the site is now surveyed each winter as part of the larger Dublin Bay complex.

The North Bull Island SPA is a regular site for passage waders, especially Ruff, Curlew Sandpiper and Spotted Redshank. These are mostly observed in single figures in autumn but occasionally in spring or winter.

The site formerly had an important colony of Little Tern but breeding has not occurred in recent years. Several pairs of Ringed Plover breed, along with Shelduck in some years. Breeding passerines include Skylark, Meadow Pipit, Stonechat and Reed Bunting. The island is a regular wintering site for Short-eared Owl, with up to 5 present in some winters.

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

25.3.2014



Site Name: North Dublin Bay SAC

Site Code: 000206

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

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

- [1140] Tidal Mudflats and Sandflats
- [1210] Annual Vegetation of Drift Lines
- [1310] *Salicornia* Mud
- [1330] Atlantic Salt Meadows
- [1410] Mediterranean Salt Meadows
- [2110] Embryonic Shifting Dunes
- [2120] Marram Dunes (White Dunes)
- [2130] Fixed Dunes (Grey Dunes)*
- [2190] Humid Dune Slacks
- [1395] Petalwort (*Petalophyllum ralfsii*)

North Bull Island is a sandy spit which formed after the building of the South Wall and Bull Wall in the 18th and 19th centuries. It now extends for about 5 km in length and is up to 1 km wide in places. A well-developed and dynamic dune system stretches along the seaward side of the island. Various types of dunes occur, from fixed dune grassland to pioneer communities on foredunes. Marram Grass (*Ammophila arenaria*) is dominant on the outer dune ridges, with Lyme-grass (*Leymus arenarius*) and Sand Couch (*Elymus farctus*) on the foredunes. Behind the first dune ridge, plant diversity increases with the appearance of such species as Wild Pansy (*Viola tricolor*), Kidney Vetch (*Anthyllis vulneraria*), Common Bird's-foot-trefoil (*Lotus corniculatus*), Common Restharrow (*Ononis repens*), Yellow-rattle (*Rhinanthus minor*) and Pyramidal Orchid (*Anacamptis pyramidalis*). In these grassy areas and slacks, the scarce Bee Orchid (*Ophrys apifera*) occurs.

About 1 km from the tip of the island, a large dune slack with a rich flora occurs, usually referred to as the 'Alder Marsh' because of the presence of Alder trees (*Alnus glutinosa*). The water table is very near the surface and is only slightly brackish. Saltmarsh Rush (*Juncus maritimus*) is the dominant species, with Meadowsweet (*Filipendula ulmaria*) and Devil's-bit Scabious (*Succisa pratensis*) being frequent. The orchid flora is notable and includes Marsh Helleborine (*Epipactis palustris*), Common

Twayblade (*Listera ovata*), Autumn Lady's-tresses (*Spiranthes spiralis*) and Marsh Orchids (*Dactylorhiza* spp.).

Saltmarsh extends along the length of the landward side of the island. The edge of the marsh is marked by an eroding edge which varies from 20 cm to 60 cm high. The marsh can be zoned into different levels according to the vegetation types present. On the lower marsh, Glasswort (*Salicornia europaea*), Common Saltmarsh-grass (*Puccinellia maritima*), Annual Sea-blite (*Suaeda maritima*) and Greater Sea-spurrey (*Spergularia media*) are the main species. Higher up in the middle marsh Sea Plantain (*Plantago maritima*), Sea Aster (*Aster tripolium*), Sea Arrowgrass (*Triglochin maritima*) and Thrift (*Armeria maritima*) appear. Above the mark of the normal high tide, species such as Common Scurvygrass (*Cochlearia officinalis*) and Sea Milkwort (*Glaux maritima*) are found, while on the extreme upper marsh, the rushes *Juncus maritimus* and *J. gerardi* are dominant. Towards the tip of the island, the saltmarsh grades naturally into fixed dune vegetation.

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

The island shelters two intertidal lagoons which are divided by a solid causeway. The sediments of the lagoons are mainly sands with a small and varying mixture of silt and clay. The north lagoon has an area known as the "Salicornia flat", which is dominated by *Salicornia dolichostachya*, a pioneer glasswort species, and covers about 25 ha. Beaked Tasselweed (*Ruppia maritima*) occurs in this area, along with some Narrow-leaved Eelgrass (*Zostera angustifolia*). Dwarf Eelgrass (*Z. noltii*) also occurs in Sutton Creek. Common Cordgrass (*Spartina anglica*) occurs in places but its growth is controlled by management. Green algal mats (*Enteromorpha* spp., *Ulva lactuca*) cover large areas of the flats during summer. These sediments have a rich macrofauna, with high densities of Lugworms (*Arenicola marina*) in parts of the north lagoon. Mussels (*Mytilus edulis*) occur in places, along with bivalves such as *Cerastoderma edule*, *Macoma balthica* and *Scrobicularia plana*. The small gastropod *Hydrobia ulvae* occurs in high densities in places, while the crustaceans *Corophium volutator* and *Carcinus maenas* are common. The sediments on the seaward side of North Bull Island are mostly sands. The site extends below the low spring tide mark to include an area of the sublittoral zone.

Three rare plant species which are legally protected under the Flora (Protection) Order, 1999 have been recorded on the North Bull Island. These are Lesser Centaury (*Centaureum pulchellum*), Red Hemp-nettle (*Galeopsis angustifolia*) and Meadow Saxifrage (*Saxifraga granulata*). Two further species listed as threatened in the Red Data Book, Wild Clary/Sage (*Salvia verbenaca*) and Spring Vetch (*Vicia lathyroides*), have also been recorded. A rare liverwort, *Petalophyllum ralfsii*, was first recorded from the North Bull Island in 1874 and has recently been confirmed as still present. This species is of high conservation value as it is listed on Annex II of the E.U. Habitats Directive. The North Bull is the only known extant site for the species in Ireland away from the western seaboard.

North Dublin Bay is of international importance for waterfowl. During the 1994/95 to 1996/97 period the following species occurred in internationally important numbers (figures are average maxima): Brent Goose 2,333; Knot 4,423; Bar-tailed Godwit 1,586. A further 14 species occurred in nationally important concentrations - Shelduck 1505; Wigeon 1,166; Teal 1,512; Pintail 334; Shoveler 239; Oystercatcher 2,190; Ringed Plover 346; Grey Plover 816; Sanderling 357; Dunlin 6,238; Black-tailed Godwit 156; Curlew 1,193; Turnstone 197 and Redshank 1,175. Some of these species frequent South Dublin Bay and the River Tolka Estuary for feeding and/or roosting purposes (mostly Brent Goose, Oystercatcher, Ringed Plover, Sanderling and Dunlin).

The tip of the North Bull Island is a traditional nesting site for Little Tern. A high total of 88 pairs nested in 1987. However, nesting attempts have not been successful since the early 1990s. Ringed Plover, Shelduck, Mallard, Skylark, Meadow Pipit and Stonechat also nest. A well-known population of Irish Hare is resident on the island

The invertebrates of the North Bull Island have been studied and the island has been shown to contain at least seven species of regional or national importance in Ireland (from the Orders Diptera, Hymenoptera and Hemiptera).

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

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



Site Name: Rogerstown Estuary SAC

Site Code: 000208

Rogerstown Estuary is situated about 2 km north of Donabate in Co. Dublin. It is a relatively small, narrow estuary separated from the sea by a sand and shingle bar. The estuary is divided by a causeway and narrow bridge, built in the 1840s to carry the Dublin-Belfast railway line.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[1130] Estuaries
[1140] Tidal Mudflats and Sandflats
[1310] <i>Salicornia</i> Mud
[1330] Atlantic Salt Meadows
[1410] Mediterranean Salt Meadows
[2120] Marram Dunes (White Dunes)
[2130] Fixed Dunes (Grey Dunes)*

The estuary drains almost completely at low tide. The intertidal flats of the outer estuary are mainly of sands, with soft muds in the north-west sector and along the southern shore. Associated with these muds are stands of Common Cordgrass (*Spartina anglica*). Green algae (mainly *Enteromorpha* spp. and *Ulva lactuca*) are widespread and form dense mats in the more sheltered areas. The intertidal angiosperm Beaked Tasselweed (*Ruppia maritima*) grows profusely in places beneath the algal mats. The Lugworm (*Arenicola marina*) is common in the outer estuary and large Mussel beds (*Mytilus edulis*) occur at the outlet to the sea.

The area of intertidal flats in the inner estuary is reduced as a result of the local authority refuse tip on the north shore. The sediments are mostly muds, which are very soft in places. Common Cordgrass is widespread in parts, and in summer, dense green algal mats grow on the muds. In the extreme inner part, the estuary narrows to a tidal river.

The habitat '*Salicornia* mud' occurs in both the outer and inner estuaries, and *S. dolichostachya* is the main glasswort species found. Other species include *S. ramosissima*, *S. europaea* and Annual Sea-blite (*Suaeda maritima*).

Saltmarsh fringes parts of the estuary, especially the southern shores and parts of the outer sand spit. Common plant species of the saltmarsh include Sea Rush (*Juncus*

maritimus), Sea-purslane (*Halimione portulacoides*) and Common Saltmarsh-grass (*Puccinellia maritima*). Salt meadows and wet brackish fields occur along the tidal river. Low sand hills occur on the outer spit, including some small areas of fixed dunes and Marram Grass (*Ammophila arenaria*) dunes. Fine sandy beaches and intertidal sandflats occur at the outer part of the estuary.

Two plant species which are legally protected under the Flora (Protection) Order, 1999, occur within the site: Hairy Violet (*Viola hirta*) occurs on the sand spit and Meadow Barley (*Hordeum secalinum*) occurs in the saline fields of the inner estuary. This species has declined, apparently due to reclamation and embankment of lands fringing estuaries. Another rare species, Green-winged Orchid (*Orchis morio*), occurs in the sandy areas of the outer estuary.

Rogerstown Estuary is an important waterfowl site, with Brent Goose having a population of international importance (1176). A further 16 species have populations of national importance: Greylag Goose (186), Shelduck (785), Teal (584), Pintail (30), Shoveler (69), Oystercatcher (1028), Ringed Plover (152), Golden Plover (1813), Grey Plover (245), Lapwing (4056), Knot (2076), Dunlin (2625), Sanderling (57), Black-tailed Godwit (272), Curlew (1549), Redshank (732) and Greenshank (22) (All counts are average peaks over four winters 1994/95 - 1997/98). The presence of a significant population of Golden Plover is of note and this species is listed on Annex I of the E.U. Birds Directive. The estuary is a regular staging post for autumn migrants, especially Green Sandpiper, Ruff, Little Stint, Curlew Sandpiper and Spotted Redshank.

Little Tern has bred at the outer sand spit, but much of the nesting area has now been washed away as a result of erosion. The maximum number of pairs recorded was 17 in 1991. Ringed Plover breed in the same area.

The outer part of the estuary has been designated a Statutory Nature Reserve and a Special Protection Area under the E.U. Birds Directive. The inner estuary has been damaged by the refuse tip which covers 40 ha of mudflat.

This site is a good example of an estuarine system, with all typical habitats represented, including several listed on Annex I of the E.U. Habitats Directive. Rogerstown is an internationally important waterfowl site and has been a breeding site for Little Terns. The presence within the site of three rare plant species adds to its importance.



Site Name: Baldoyle Bay SAC

Site Code: 000199

Baldoyle Bay SAC extends from just below Portmarnock village to the west pier at Howth in Co. Dublin. It is a tidal estuarine bay protected from the open sea by a large sand-dune system. Two small rivers, the Mayne and the Sluice, flow into the bay.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[1140] Tidal Mudflats and Sandflats
[1310] <i>Salicornia</i> Mud
[1330] Atlantic Salt Meadows
[1410] Mediterranean Salt Meadows

Large areas of intertidal flats are exposed at low tide at this site. These are mostly sands but grade to muds in the inner sheltered parts of the estuary. Extensive areas of Common Cord-grass (*Spartina anglica*) occur in the inner estuary. Both the Narrow-leaved Eelgrass (*Zostera angustifolia*) and the Dwarf Eelgrass (*Z. noltii*) are also found here. During summer, the sandflats of the sheltered areas are covered by mats of green algae (*Enteromorpha* spp. and *Ulva lactuca*).

The sediments have a typical macrofauna, with Lugworm (*Arenicola marina*) dominating the sandy flats. The tubeworm *Lanice conchilega* is present in high densities at the low tide mark and the small gastropod *Hydrobia ulvae* occurs in the muddy areas, along with the crustacean *Corophium volutator*.

Areas of saltmarsh occur near Portmarnock Bridge and at Portmarnock Point, with narrow strips along other parts of the estuary. Species such as glassworts (*Salicornia* spp.), Sea-purslane (*Halimione portulacoides*), Sea Plantain (*Plantago maritima*) and Sea Rush (*Juncus maritimus*) are found here. Portmarnock Spit formerly had a well-developed sand dune system but this has been largely replaced by golf courses and is mostly excluded from the site. A few dune hills are still intact at Portmarnock Point, and there are small dune hills east of Cush Point and below the Claremont Hotel. These are mostly dominated by Marram (*Ammophila arenaria*), though Lyme-grass (*Leymus arenarius*) is also found.

The site includes a brackish marsh along the Mayne River. Soils here have a high organic content and are poorly drained, and some pools occur. Rushes (*Juncus* spp.) and salt tolerant species such as Common Scurvygrass (*Cochleria officinalis*) and

Greater Sea-spurrey (*Spergularia media*) are typical of this area. Knotted Hedge-parsley (*Torilis nodosa*), a scarce plant in eastern Ireland, has been recorded here, along with Brackish Water-crowfoot (*Ranunculus baudotti*), a species of brackish pools and ditches which has declined in most places due to habitat loss. Two plant species, legally protected under the Flora (Protection) Order, 1999, occur in the Mayne marsh, Borrer's Saltmarsh-grass (*Puccinellia fasciculata*) and Meadow Barley (*Hordeum secalinum*).

Baldoyle Bay is an important bird site for wintering waterfowl and the inner part of the estuary is a Special Protection Area under the E.U. Birds Directive as well as being a Statutory Nature Reserve. Internationally important numbers of Pale-bellied Brent Goose (418) and nationally important numbers of two Annex I Birds Directive species - Golden Plover (1,900) and Bar-tailed Godwit (283) - have been recorded. Four other species also reached nationally important numbers: Shelduck (147), Pintail (26), Grey Plover (148) and Ringed Plover (218) - all figures are average peaks for four winters 1994/95 to 1997/1998. Breeding wetland birds at the site include Shelduck, Mallard and Ringed Plover. Small numbers of Little Tern, a species listed on Annex I of the E.U. Birds Directive, have bred on a few occasions at Portmarnock Point but not since 1991.

The area surrounding Baldoyle Bay is densely populated and so the main threats to the site include visitor pressure, disturbance to wildfowl and dumping. In particular, the dumping of spoil onto the foreshore presents a threat to the value of the site.

Baldoyle Bay is a fine example of an estuarine system. It contains four habitats listed on Annex I of the E.U. Habitats Directive, and supports two legally protected plant species. The site is also an important bird area and part of it is a Special Protection Area under the E.U. Birds Directive, as well as being a Statutory Nature Reserve. It supports internationally important numbers of Brent Goose and nationally important numbers of six other bird species, including two Annex I Birds Directive species.

SITE SYNOPSIS

SITE NAME: BALDOYLE BAY SPA

SITE CODE: 004016

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

Large areas of intertidal flats are exposed at low tide. These are mostly sands but grade to muds in the inner sheltered parts of the estuary. Extensive areas of Common Cord-grass (*Spartina anglica*) occur in the inner estuary. Both the Narrow-leaved Eelgrass (*Zostera angustifolia*) and the Dwarf Eelgrass (*Z. noltii*) are also found here. During summer, the sandflats of the sheltered areas are covered by mats of green algae (*Ulva* spp.). The sediments have a typical macrofauna, with Lugworm (*Arenicola marina*) dominating the sandy flats. Areas of saltmarsh occur near Portmarnock Bridge and at Portmarnock Point, with narrow strips found along other parts of the estuary. Species such as Glasswort (*Salicornia* spp.), Sea-purslane (*Halimione portulacoides*), Sea Plantain (*Plantago maritima*) and Sea Rush (*Juncus maritimus*) are found here.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Light-bellied Brent Goose, Shelduck, Ringed Plover, Golden Plover, Grey Plover and Bar-tailed Godwit. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

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

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

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

25.3.2014

SITE SYNOPSIS

SITE NAME: SKERRIES ISLANDS SPA

SITE CODE: 004122

The Skerries Islands are a group of three small uninhabited islands, Shenick's Island, St Patrick's Island and Colt Island, situated between 0.5 km and 1.5 km off the north Co. Dublin coast. Skerries Islands SPA comprises the three islands and the seas surrounding them, to a distance of 200 m from the shore. The three islands are all low-lying with maximum heights ranging from 8 m to 13 m above sea level. St Patrick's Island and Colt Island have low cliffs, while Shenick's Island has more extensive expanses of intertidal rocky shore and sand flats. Shenick's Island also has a shingle bar and is connected to the mainland at low tides; it became a BirdWatch Ireland Reserve in 1987. The vegetation of the islands is dominated by rank grasses, with Brambles (*Rubus* spp.) and other species such as Hogweed (*Heracleum sphondylium*) occurring commonly.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Cormorant, Shag, Light-bellied Brent Goose, Purple Sandpiper, Turnstone and Herring Gull. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

The islands are of importance for both breeding seabirds and wintering waterfowl. In 1999 a survey recorded an internationally important population of breeding Cormorant (558 pairs) and a nationally important population of Shag (100 pairs) on St Patrick's Island. The Cormorant population, which was only established in the early 1990s, when taken together with the nearby associated colonies on Lambay Island and Ireland's Eye, comprises about 30% of the total Irish population. A nationally important population of Herring Gull (300 pairs) occurs on St Patrick's Island and Shenick's Island. Other breeding seabirds recorded during the 1999 survey include: Fulmar (35 pairs), Lesser Black-backed Gull (1 pair) and Great Black-backed Gull (95 pairs). Large gulls also breed on Colt Island but there has been no census in recent years. Other breeding birds present include Shelduck, Ringed Plover and Oystercatcher (several pairs of each).

In winter the islands regularly support a range of waterfowl species, including an internationally important population of Light-bellied Brent Goose (242) and nationally important populations of Cormorant (391), Purple Sandpiper (46), Turnstone (242) and Herring Gull (560) – all counts are mean peaks for the five year period 1995/96- 1999/2000. Other species utilising the site during winter include Wigeon (205), Mallard (240), Oystercatcher (463), Ringed Plover (66), Golden Plover (240), Grey Plover (15), Lapwing (238), Dunlin (42), Snipe (27), Curlew (327), Black-headed Gull (110) and Great Black-backed Gull (250). The islands are also a regular wintering site for Short-eared Owl, with several birds recorded in most winters.

The Skerries Islands SPA is of high ornithological importance for both breeding seabirds and wintering waterfowl. Internationally important populations of breeding Cormorant and nationally important populations of two other breeding seabirds occur on the islands. The wintering population of Light-bellied Brent Goose is of international importance and four other species occur in nationally important numbers during the winter. The presence of Golden Plover and Short-eared Owl, two species that are listed on Annex I of the E.U Birds Directive, is of note.

11.9.2009

SITE SYNOPSIS

SITE NAME: ROCKABILL SPA

SITE CODE: 004014

Rockabill consists of two small, low-lying, granitic islets situated *c.* 7 km off the Co. Dublin coast. The islands are separated by a narrow channel, though are connected at low spring tides. The main island, known as the Lighthouse Island, is vegetated by a scrubby sward of Tree Mallow (*Lavatera arborea*), with a range of other maritime species occurring, such as Sea Mayweed (*Matricaria maritima*), Sea Campion (*Silene maritima*), Sorrel (*Rumex* spp.), Common Scurvy-grass (*Cochlearia officinalis*), Orache (*Atriplex* spp.) and Rock Sea-spurrey (*Spergularia rupicola*). The smaller island, known as the Bill, is very exposed and is sparsely vegetated. A lighthouse, manned until 1989, is situated on the main island. The site includes the two islands and the surrounding seas to a distance of 3.5 km from the islands.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Purple Sandpiper, Roseate Tern, Common Tern and Arctic Tern.

Rockabill has a long history of nesting by terns and it is now the most important Roseate tern colony in Europe. The All-Ireland Tern Survey in 1995 recorded an internationally important population of Roseate Tern (554 pairs) and nationally important populations of Common Tern (351 pairs) and Arctic Tern (49 pairs) on Rockabill. Intensive wardening, management and monitoring since the 1980s has seen the colony grow significantly. In 2010 the Roseate population had increased to 1,093 pairs, which represents approximately 65% of the entire European biogeographic population. The Common Tern population is the largest in Ireland with 1,940 pairs recorded in 2010. The Arctic Tern population has also increased with 250 pairs recorded in 2010. Sandwich Tern nested up to the 1930s but apparently not since. Surveys of the foraging behaviour of the Roseate Tern population on Rockabill have recorded up to 73% of Roseate Terns foraging within 3.5 km of the islands. The seas surrounding the islands, to a distance of 3.5 km, are therefore included within the SPA to protect the foraging resource of this internationally important Roseate Tern population.

The terns nest amongst the scrubby vegetation and increasingly so in the nest boxes which are provided as part of the BirdWatch Ireland/National Parks and Wildlife Service conservation programme. Large gull species are discouraged from nesting on the islands, for the benefit of the terns, and visitors to the islands are strictly controlled. Detailed research is carried out each year, including studies on breeding behaviour, productivity and feeding. A ringing programme has been in operation since the 1980s and this has produced important information on the movement of the birds in an international context.

Other breeding seabirds which utilise the site include Black Guillemot (82 pairs in 2010) and a small colony of Kittiwake (163 pairs in 2010). Both of these species are monitored annually and most of the chicks produced are ringed.

In winter the site supports a nationally important population of Purple Sandpiper (48). Other species recorded include Cormorant (18), Oystercatcher (14) and Turnstone (38) – all figures are 3 year mean peaks for the period 1997/98 to 1999/2000.

Rockabill SPA is of ornithological importance as it supports the most important Roseate Tern colony in Europe. The site also supports nationally important breeding populations of Common Tern and Arctic Tern, and a nationally important wintering population of Purple Sandpiper. All three species of tern which occur are listed on Annex I of the E.U. Birds Directive. Owing to its international and national importance, Rockabill is a designated Refuge for Fauna.



Site Name: Rockabill to Dalkey Island SAC

Site Code: 003000

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

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[1170] Reefs [1351] Harbour Porpoise (<i>Phocoena phocoena</i>)
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Reef habitat is uncommon along the eastern seaboard of Ireland due to prevailing geology and hydrographical conditions. Expansive surveys of the Irish coast have indicated that the greatest resource of this habitat within the Irish Sea is found fringing offshore islands which are concentrated along the Dublin coast. A detailed survey of selected suitable islands has shown areas with typical biodiversity for this habitat both intertidally and subtidally. Species recorded in the intertidal included *Fucus spiralis*, *Fucus serratus*, *Pelvetia canaliculata*, *Ascophyllum nodosum*, *Semibalanus balanoides* and *Necora puber*. Subtidally, a wide range of species include *Laminaria hyperborea*, *Flustra foliacea*, *Alaria esculenta*, *Halidrys siliquosa*, *Pomatocereos triqueter*, *Alcyonium digitatum*, *Metridium senile*, *Caryophyllia smithii*, *Tubularia indivisa*, *Mytilus edulis*, *Gibbula umbilicalis*, *Asterias rubens*, and *Echinus esculentus*. These reefs are subject to strong tidal currents with an abundant supply of suspended matter resulting in good representation of filter feeding fauna such as sponges, anemones and echinoderms.

The area selected for designation represents a key habitat for the Annex II species Harbour Porpoise within the Irish Sea. Population survey data show that porpoise occurrence within the site boundary meets suitable reference values for other designated sites in Ireland. The species occurs year-round within the site and comparatively high group sizes have been recorded. Porpoises with young (i.e. calves) are observed at favourable, typical reference values for the species. Casual and effort-related sighting rates from coastal observation stations are significant for the east coast of Ireland and the latter appear to be relatively stable across all seasons. The selected site contains a wide array of habitats believed to be important for Harbour Porpoise including inshore shallow sand and mudbanks and rocky reefs scoured by strong current flow. The site also supports Common Seal and Grey Seal,

for which terrestrial haul-out sites occur in immediate proximity to the site. Bottlenosed Dolphins has also occasionally been recorded in the area. A number of other marine mammals have been recorded in this area including Minke, Fin and Killer Whales and Risso's and Common Dolphins.

The coastal environment of Co. Dublin is a very significant resource to birds with some nationally and internationally important populations. Of particular note in this site are the large number of terns (Arctic, Common and Roseate) known to use Dalkey Island as a staging area (approx. 2,000) after breeding. Other seabirds commonly seen include Kittiwake, Razorbill, Guillemot, Puffin, Fulmar, Shag, Cormorant, Manx Shearwater, Gannet and gulls.

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



Site Name: Lambay Island SAC

Site Code: 000204

Lambay Island is a large (250 ha) inhabited island lying 4 km off Portrane on the north Co. Dublin coast. It is privately owned and is accessible by boat from Rogerstown Quay. The island rises to 127 m and is surrounded by steep cliffs on the north, east and south slopes. These cliffs contain good diversity in height, slope and aspect. The west shore is low-lying and the land slopes gently eastwards to the summit in the centre of the island. The underlying geology is varied, but is dominated by igneous rocks (of andesitic type) and ash. Also present are shales and limestones of Silurian origin, limestone conglomerates, and shales from the Old Red Sandstone era. The bedrock is exposed on the fringing cliffs and in rocky outcrops; elsewhere it is overlain by varying depths of glacial drift.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

- | |
|--|
| [1170] Reefs |
| [1230] Vegetated Sea Cliffs |
| [1364] Grey Seal (<i>Halichoerus grypus</i>) |
| [1365] Common (Harbour) Seal (<i>Phoca vitulina</i>) |

Much of the western third of the island is intensively farmed (mostly pasture), and there are small areas of parkland, deciduous and coniferous woodland, buildings, walled gardens and the harbour. The rest of the island is a mixture of less intensively grazed land, rocky outcrops, patches of Bracken (*Pteridium aquilinum*) and Bramble (*Rubus fruticosus* agg.), and cliff slopes with typical maritime vegetation e.g. Thrift (*Armeria maritima*), Sea Campion (*Silene vulgaris* subsp. *maritima*), Rock Sea-spurrey (*Spergularia rupicola*) and Spring Squill (*Scilla verna*). Some sheltered gullies have small areas of scrub woodland dominated by Elder (*Sambucus nigra*).

Lambay Island is flanked by extensive areas of reef habitat. Typical species in the intertidal include *Ascophyllum nodosum*, *Fucus* spp., *Laminaria* spp., *Dynamena pumila*, *Actinia equina*, *Littorina littorea*, *L. saxatilis*, *Patella vulgata* and *Semibalanus balanoides*. In the subtidal reef the following algal species are frequently encountered - *Palmaria palmata*, *Cystoclonium purpureum*, *Delesseria sanguinea*, *Membranoptera alata*, *Hypoglossum hypoglossoides*, *Chorda filum*, *Laminaria saccharina* and *Halidrys siliquosa*. Invertebrate species commonly recorded include the typical shallow reef species *Obelia geniculata*, *Alcyonium digitatum*, *Caryophyllia smithii*, *Pomatoceros triqueter*, *Helcion pellucidum*, *Balanus crenatus*, *Echinus esculentus* and *Asterias rubens*.

Lambay supports the principal breeding colony of Grey Seal on the east coast of Ireland, numbering 196-252 seals, across all ages. It also contains regionally significant numbers of Common Seal, of which up to 47 individuals have been counted at the site. Grey Seals and Common Seals occur year-round and the island's intertidal shorelines, coves and caves are used by resting and moulting seals.

A herd of Fallow Deer (approx. 80) roams the higher parts of the island, and a small number of wallabies (approx. 10) survive in a feral state. This island may also hold the last Irish population of the Ship Rat, a species listed in the vertebrate Red Data Book.

Lambay Island is internationally important for its breeding seabirds. The most numerous species is the Guillemot, with almost 52,000 individuals on the cliffs. Razorbills (3,646 individuals), Kittiwakes (5,102 individuals), Herring Gulls (2,500 pairs), Cormorants (605 pairs), Shags (1,164 pairs), Puffins (235 pairs), and small numbers of Great and Lesser Black-backed Gulls also breed (all figures from 1995). Between 1991 and 1995 Fulmar numbers varied between 573-737 pairs. There is a small colony (<100 pairs) of the nocturnal Manx Shearwater on the island and up to 20 pairs of Common Terns have bred in recent years. A few Black Guillemots have been recorded on Lambay, but it is not clear if they breed. A pair of Peregrines are known to breed on the island.

In winter the most notable bird species on Lambay Island is the Greylag Goose with numbers peaking at 1,000, though in recent winters there has been a decline to 400-700 individuals. There is also a small wintering flock of Barnacle Goose (up to 50), and recently Brent Goose (up to 100) have started to occur regularly. Small numbers of Great Northern Diver and Red-throated Diver are also present in winter.

An intensive survey of the natural history of Lambay Island was carried out in 1906 and published in the Irish Naturalist. A similar, comparative survey has been carried out in the early 1990s. With this background, Lambay Island is an excellent site for studies of marine biology, terrestrial fauna and flora, geology, geomorphology and ecology.

The island has been maintained as a wildlife sanctuary by its owners and no threats are envisaged should the present land use continue. Rodents may be causing some damage to the populations of burrow-nesting seabirds.

Lambay Island has good examples of vegetated sea cliffs, a habitat listed on Annex I of the E.U. Habitats Directive, and these cliffs hold internationally important populations of seabirds. The site is also of conservation importance for the populations of Grey Seal and Common Seal, species listed on Annex II of this Directive, that it supports.

SITE SYNOPSIS

SITE NAME: LAMBAY ISLAND SPA

SITE CODE: 004069

Lambay Island lies approximately 4 km off the north Co. Dublin coastline and is separated from it by a channel of 10-13 m in depth. East of Lambay Island the water deepens rapidly into the Irish Sea basin. The island, which rises to 127 m, has an area of 250 ha above high tide mark. The underlying geology is very varied, but is dominated by volcanic igneous rocks (of andesitic type) and ash; also present are shales, limestones and limestone conglomerates. The soils are generally shallow and are derived from glacial tills of Irish Sea origin. The shallow soils are peaty on high exposed ground and above the cliffs. On the western side of the island the land rises gently from a bedrock shoreline. Cobble storm beaches are associated with this shore and at low tide sandflats are exposed within the harbour and below a section of the rocky shore. The northern, eastern and most of the southern shorelines consist of steep cliffs varying from about 15 m to 50 m high. These are backed by vegetated slopes along most of their length. The cliff slopes have a typical maritime vegetation, including such species as Thrift (*Armeria maritima*), Sea Campion (*Silene maritima*), Rock Sea-spurrey (*Spergularia rupicola*) and Spring Squill (*Scilla verna*). Some sheltered gullies have small areas of scrub woodland dominated by Elder (*Sambucus nigra*).

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Fulmar, Cormorant, Shag, Greylag Goose, Lesser Black-backed Gull, Herring Gull, Kittiwake, Guillemot, Razorbill and Puffin. The site is also of special conservation interest for holding and assemblage of over 20,000 breeding seabirds.

Lambay Island is internationally important for its breeding seabirds and is of particular note for the diversity of these, with 12 species breeding regularly. A survey in 1999 recorded internationally important populations of Cormorant (675 pairs), Shag (1,122 pairs) and Guillemot (40,705 pairs). A further six species have breeding populations of national importance, i.e. Fulmar (585 pairs), Lesser Black-backed Gull (309 pairs), Herring Gull (1,806 pairs), Kittiwake (4,091 pairs), Razorbill (2,906 pairs) and Puffin (265 pairs). The island's populations of Cormorant, Shag, Herring Gull and Guillemot are the largest in Ireland. Lambay Island holds the only known colony of Manx Shearwater (25 pairs in 2002) on the east coast of Ireland; in addition, Black Guillemot also breeds here (4 pairs in 1999). In 2007 two new species were added to the island's list of breeding seabirds: Gannet (68 pairs) and Common Gull (1 pair). A survey in 2004 recorded breeding Cormorant (352 pairs), Shag (1,734 pairs), Guillemot (38,999 pairs), Fulmar (727 pairs), Lesser Black-backed Gull (133 pairs), Herring Gull (311 pairs), Great Black-backed Gull (145 pairs), Kittiwake (3,947 pairs), Razorbill (3,805 pairs) and Puffin (209 pairs).

In winter, Lambay Island supports nationally important populations of Greylag Goose (311) and Herring Gull (2,400) – figures are the five year mean peak for the winters 1995/96-1999/2000. Up to the mid 1990s, a Barnacle Goose flock wintered on the island (the only such flock in eastern Ireland) but these have since abandoned the site. Other species which utilise the site during the winter include Light-bellied Brent Goose (55), Oystercatcher (155), Purple Sandpiper (9), Curlew (211) and Turnstone (32). Lambay Island is also the only regular wintering site in Ireland for Whimbrel (5 in 2006).

Lambay Island is a traditional nesting site for Peregrine and also supports the largest colony of breeding Oystercatcher (20-25 pairs) on the east coast. Ringed Plover, Shelduck, Buzzard, Long-eared Owl, Raven and a variety of passerines such as Stonechat, Whitethroat and Reed Bunting also breed.

Lambay Island supports a long-established breeding colony of Grey Seal, a species that is listed on Annex II of the E.U. Habitats Directive. A number of non-native mammals, including Fallow Deer and Red-necked Wallaby, have been introduced onto Lambay Island during the last century. Brown Rat is also present and, notably, the last authenticated record of Black Rat living wild in Ireland was from Lambay Island in 1988. The rat population on the island is believed to be negatively impacting on the burrow nesting species, i.e. Manx Shearwater and Puffin.

Lambay Island SPA holds an internationally important seabird colony and is one of the top seabird sites in Ireland. Three seabird species have breeding populations of international importance and a further six have populations of national importance. In addition to the seabirds, the island also supports nationally important wintering populations of Greylag Goose and Herring Gull. The presence of Peregrine, a species that is listed on Annex I of the E.U. Birds Directive, is also of note.

SITE SYNOPSIS

SITE NAME: ROGERSTOWN ESTUARY SPA

SITE CODE: 004015

Rogerstown Estuary is situated about 2 km north of Donabate in north County Dublin. It is a relatively small, funnel shaped estuary separated from the sea by a sand and shingle peninsula; the site extends eastwards to include an area of shallow marine water. The estuary receives the waters of the Ballyboghil and Ballough rivers and has a wide salinity range, from near full seawater to near full freshwater. The estuary is divided by a causeway and narrow bridge, built in the 1840s to carry the Dublin-Belfast railway line. At low tide extensive intertidal sand and mud flats are exposed and these provide the main food resource for the wintering waterfowl that use the site. The intertidal flats of the estuary are mainly of sands, with soft muds in the north-west sector and along the southern shore. Associated with these muds are stands of Common Cord-grass (*Spartina anglica*). Green algae (mainly *Ulva* spp.) are widespread and form dense mats in the more sheltered areas. The intertidal vascular plant Beaked Tasselweed (*Ruppia maritima*) grows profusely in places beneath the algal mats and is grazed by herbivorous waterfowl (notably Light-bellied Brent Goose and Wigeon). Salt marsh fringes parts of the estuary, especially its southern shores. Common plant species of the saltmarsh include Sea Rush (*Juncus maritimus*), Sea Purslane (*Halimione portulacoides*) and Common Saltmarsh-grass (*Puccinellia maritima*).

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Greylag Goose, Light-bellied Brent Goose, Shelduck, Shoveler, Oystercatcher, Ringed Plover, Grey Plover, Knot, Dunlin, Black-tailed Godwit and Redshank. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

Rogerstown Estuary is an important winter waterfowl site and supports a population of Light-bellied Brent Goose of international importance (1,069) - all counts are mean peaks over the five winters 1995/96 – 1999/2000. A further 10 species have populations of national importance as follows: Greylag Goose (160), Shelduck (773), Shoveler (59), Oystercatcher (1,345), Ringed Plover (188), Grey Plover (229), Knot (2,454), Dunlin (2,745), Black-tailed Godwit (195) and Redshank (490). The Greylag Geese are part of a larger population which spends most of the winter on Lambay Island. Other species which occur regularly include Wigeon (358), Teal (346), Mallard (214), Red-breasted Merganser (30), Golden Plover (1,059) Lapwing (2,129), Sanderling (50), Curlew (505) and Turnstone (77). Large numbers of gulls including Herring Gull, Great Black-backed Gull and Black-headed Gull are attracted to the area, partly due to the presence of an adjacent local authority landfill site. Little Egret, a species which has recently colonised Ireland, also occurs at this site.

Some of the wader species also occur on passage, notably Black-tailed Godwit with numbers often exceeding 300 in April. The estuary is a regular staging post for scarce migrants, especially in autumn when Green Sandpiper, Ruff, Little Stint, Curlew Sandpiper and Spotted Redshank may be seen. Shelduck breed within the site.

Rogerstown Estuary SPA is an important link in the chain of estuaries on the east coast. It supports an internationally important population of Light-bellied Brent Goose and nationally important populations of a further 10 species. The presence of Little Egret and Golden Plover is of note as these species are listed on Annex I of the E.U. Birds Directive. Rogerstown Estuary is also a Ramsar Convention site, and part of Rogerstown Estuary SPA is designated as a Statutory Nature Reserve and a Wildfowl Sanctuary.

SITE SYNOPSIS

SITE NAME: IRELAND'S EYE SPA

SITE CODE: 004117

Ireland's Eye is an uninhabited island located about 1.5 km north of Howth in Co. Dublin. The site encompasses Ireland's Eye, Rowan Rocks, Thulla, Thulla Rocks, Carrageen Bay and a seaward extension of 200m in the west and 500m to the north and east. The island has an area of *c.* 24 ha above the high tide mark. The underlying geology is Cambrian greywackes and quartzites. These rocks form impressive near-vertical cliffs, reaching 69 m, along the northern and eastern sides of the island, with scattered exposures elsewhere on the island and especially in the high northern half. A tall stack, which is completely cut off from the main island at mid to high tide, occurs at the eastern side of the cliffs. A sandy beach, backed by low sand hills, occurs at Carrageen Bay on the western shore, while a shingle beach extends from Carrageen to Thulla Rocks. Elsewhere the island is covered by glacial drift. A low-lying, sparsely vegetated islet, known as Thulla, occurs a little to the south of the island, and an extensive area of bedrock shore (heavily covered by brown seaweeds) is exposed at low tide between Thulla and the main island. There are no watercourses or springs on the island, though two small rainwater ponds form during winter in the north-west and north-east sectors.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Cormorant, Herring Gull, Kittiwake, Guillemot and Razorbill.

Ireland's Eye has important populations of breeding seabirds. In 1999 the following species were recorded: Fulmar (70 pairs), Gannet (147 pairs), Cormorant (306 pairs), Shag (32 pairs), Lesser Black-backed Gull (1 pair), Great Black-backed Gull (90 pairs), Herring Gull (246 pairs), Kittiwake (941 pairs), Guillemot (1,468 pairs) and Razorbill (350 pairs) and Puffin (4 pairs). In 2001 an incomplete census recorded Gannet (202 pairs), Cormorant (438 pairs), Kittiwake (1,024 pairs), Guillemot (1,975 pairs) and Razorbill (460 pairs). A Gannet survey by the National Parks and Wildlife Service in 2004 recorded 285 pairs. Black Guillemot may also breed, with 15 individuals recorded in 1998. The Cormorant, Herring Gull, Kittiwake, Guillemot and Razorbill populations are of national importance. The majority of the Cormorant population nest on Thulla and when considered as part of a larger grouping with the colonies on nearby Lambay and St. Patrick's Island, this population is of international importance. The Gannet colony is of particular note as it is one of six in the country and one of only two sites on the east coast. The colony has only been established as recently as the late 1980s and as all breeding ledges became fully occupied in 2006 a satellite colony was then established on the nearby island of Lambay.

Several pairs each of Shelduck, Oystercatcher and Ringed Plover breed. The island is also a traditional site for Peregrine, a species that is listed on Annex I of the E.U.

Birds Directive. In winter small numbers of Greylag Goose and Pale-bellied Brent Goose graze on the island and it is used as a roost site by gulls and some waders.

Ireland's Eye SPA, though a relatively small island, is of high ornithological importance, with five seabird species having populations of national importance. The regular presence of a breeding pair of Peregrine, an Annex I species, is also of note.



Site Name: Ireland's Eye SAC

Site Code: 002193

Ireland's Eye is located about 1.5 km north of Howth in Co. Dublin. It is a Cambrian island with quartzite which forms spectacular cliffs on the north-east side. Elsewhere much of the area is covered by drift. There is a Martello tower at the west end of the island and an ancient ruined church in the middle.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[1220] Perennial Vegetation of Stony Banks

[1230] Vegetated Sea Cliffs

On Ireland's Eye the drift soils support a plant community of Bracken (*Pteridium aquilinum*) and various grasses, especially Red Fescue (*Festuca rubra*), along with Bluebells (*Hyacinthoides non-scripta*), Common Dog-violet (*Viola riviniana*) and Navelwort (*Umbilicus rupestris*). The thinner soils have some interesting species, including Spring Squill (*Scilla verna*), Knotted Clover (*Trifolium striatum*) and Field Mouse-ear (*Cerastium arvense*). Bloody Cranesbill (*Geranium sanguineum*) has also been recorded from here.

The cliff maritime flora includes Rock Sea-spurrey (*Spergularia rupicola*), Sea Stork's-bill (*Erodium maritimum*), Rock Samphire (*Crithmum maritimum*), Golden Samphire (*Inula crithmoides*), Rock Sea-lavender (*Limonium binervosum*), Meadow Rue (*Thalictrum minor*), Portland Spurge (*Euphorbia portlandica*) and Tree-mallow (*Lavatera arborea*).

A small area of shingle vegetation occurs above the sandy beach at Carrigeen Bay on the western side of the island. Species such as Curled Dock (*Rumex crispus*), Silverweed (*Potentilla anserina*) and Spear-leaved Orache (*Atriplex prostrata*) occur, while the rare Sea-kale (*Crambe maritima*), a characteristic species of this habitat, has been known from this site since 1894 and was recorded as recently as 1981. Sea-kale is listed as threatened in the Irish Red Data Book. Also occurring on the sandy/shingle beach is the Red Data Book species Henbane (*Hyoscyamus niger*).

Ireland's Eye is of national importance for breeding seabirds. In 1999 the following were counted: Fulmar - 70 pairs; Cormorant - 306 pairs; Shag - 32 pairs; Lesser Black-backed Gull - 1 pair; Herring Gull – approx. 250 pairs; Great Black-backed Gull – approx. 100 pairs; Kittiwake - 941 pairs; Guillemot – 2,191 individuals; Razorbill - 522 individuals. A Gannet colony was established on the stack at the east end of the

island in the late 1980s, and in 1999 142 pairs bred. Puffin was formerly common, but nowadays not more than 20 individuals occur. Black Guillemot also breeds, with 15 individuals recorded in 1998. Several pairs each of Oystercatcher and Ringed Plover breed, while the island is a traditional site for Peregrine Falcon.

In winter small numbers of Greylag and Pale-bellied Brent Goose graze on the island.

This uninhabited marine island has a well developed maritime flora, with two habitats (sea cliffs and shingle) listed on Annex II of the E.U. Habitats Directive, and nationally important seabird colonies. Owing to its easy access and proximity to Dublin it has great educational and amenity value.



Site Name: Howth Head SAC

Site Code: 000202

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

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[1230] Vegetated Sea Cliffs

[4030] Dry Heath

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

The heath merges into dry grassland in places, with bent grasses (*Agrostis* spp.), Red Fescue (*Festuca rubra*), Cock's-foot (*Dactylis glomerata*), Yorkshire-fog (*Holcus lanatus*), Sweet Vernal-grass (*Anthoxanthum odoratum*), Lady's Bedstraw (*Galium verum*), Ribwort Plantain (*Plantago lanceolata*) and Yellow-wort (*Blackstonia perfoliata*). In the summit area there are a few wet flushes and small bogs, with typical bog species such as Bog Asphodel (*Narthecium ossifragum*) and sundews (*Drosera* spp.). Patches of scrub, mostly Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*), Willow (*Salix* spp.) and Downy Birch (*Betula pubescens*), occur in places.

The maritime flora is of particular interest as a number of scarce and local plants have been recorded, including Golden-samphire (*Inula crithmoides*), Sea Wormwood (*Artemisia maritima*), Grass-leaved Orache (*Atriplex littoralis*), Frosted Orache (*Atriplex laciniata*), Sea Spleenwort (*Asplenium marinum*), Bloody Crane's-bill (*Geranium sanguineum*), Spring Squill (*Scilla verna*), Sea Stork's-bill (*Erodium maritimum*) and three uncommon clover species: Knotted Clover (*Trifolium striatum*), Bird's-foot Clover (*T. ornithopodioides*) and Western Clover (*T. occidentalis*).

Rock outcrops which are important for lichens are distributed widely around Howth Head. The richest area for lichens appears to be around Balscadden quarries. In

addition, the Earlscliffe area is of national importance for lichens and is the type locality for the black, yellow and grey lichen zonation.

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

Curved Hard-grass (*Parapholis incurva*), a species which had not previously been recognized as occurring in Ireland, was found at Red Rock in 1979.

The site is of national importance for breeding seabirds. A census in 1985-87 recorded the following numbers: Fulmar (105 pairs), Shags (25 pairs), Herring Gulls (70 pairs), Kittiwake (c. 1,700 pairs), Guillemot (585 birds), Razorbill (280 birds). In 1990, 21 pairs of Black Guillemot were counted.

A number of rare invertebrates have been recorded from the site: the fly *Phaonia exoleta* (Order Diptera) occurs in the woods at the back of Deerpark and has not been seen anywhere else in Ireland, while the ground beetle *Trechus rubens* (Order Coleoptera) is found on storm beaches on the eastern cliffs. A hoverfly, known from only a few Irish locations, *Sphaerophoria batava* (Order Diptera), is present in the heathland habitat within the site.

The main land use within the area is recreation, mostly walking and horse-riding, and this has led to some erosion within the site. Fires also pose a danger to the site. There may also be a threat in some areas from further housing development.

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

SITE SYNOPSIS

SITE NAME: HOWTH HEAD COAST SPA

SITE CODE: 004113

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

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

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for Kittiwake.

A range of seabird species breed within the Howth Head SPA, including a nationally important population of Kittiwake. A census in 1999 recorded the following species: Fulmar (33 pairs), Shag (12 pairs), Herring Gull (17 pairs), Great Black-backed Gull (5 pairs), Kittiwake (2,269 pairs), Guillemot (663 pairs) and Razorbill (279 pairs). In addition, 39 individual Black Guillemot were counted within the site in May 1998.

The cliffs also support a breeding pair of Peregrine Falcon. The seabird colony at Howth Head has been monitored at intervals since the Operation Seafarer project in 1969/70.

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



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