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## 7 BIODIVERSITY

### 7.1 INTRODUCTION

Scott Cawley Ltd. was commissioned by Tom Phillips and Associates on behalf of IRES Residential Properties LTD. to undertake an Ecological Impact Assessment of the proposed development at RB Central, Rockbrook Estate, Sandyford Business District, Dublin 18 to inform the Environmental Impact Assessment Report (EIAR) which forms part of the planning application. IRES Residential Properties LTD. intend to apply for full planning permission for:

2 no. residential blocks ranging in height from 5-14 storeys comprising a total of 428 no. apartments (including all balconies, terraces and roof gardens) arranged around two courtyards; communal and public open spaces including boulevards; 4 no. ground floor retail units; resident community uses and crèche with outdoor play area. The development will also include revisions to the existing basement levels including car and bicycle parking provision with new vehicular access from Carmanhall Road; apartment storage areas; waste storage areas; ESB substations and switch room and plant/service areas. The development will also include all piped infrastructure and ducting; green roofs; changes in level; internal roads and pathways; pedestrian access points; services provision; landscaping and boundary treatments and all associated site development and excavation works above and below ground. It is estimated that the proposed development will result in an overall decrease in surface water run-off as the existing site is dominated by hardstanding with little to no vegetation present. It is proposed to intercept and treat surface water runoff through the use of green roofs across at least 60% of proposed roofs, ground floor landscaping and rainwater harvesting.

External surface water runoff from the proposed development will discharge attenuated surface water (through storage) to the existing local network on Carmanhall Road. Basement car park runoff will be treated by petrol interceptors and pumped to Blackthorn Drive utilising existing drainage.

The aims of this assessment were to:

- Establish baseline ecological data for the proposed development site and other relevant areas;
- Determine the ecological value of the identified ecological features;
- Assess the impact of the proposed development on ecological features of value;
- Recommend mitigation measures to avoid, reduce and remedy the identified impacts; and,
- Identify any residual impacts after mitigation.

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## 7.2 Planning, Policy and Legislation

The assessment of the likely impacts of the proposed development on ecological resources has considered legislation, policy documents, and guidelines outlined in the following section.

### 7.2.1 International and National Legislation

The following international legislation is relevant to the proposed development:

- Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (as amended); hereafter the ‘Habitats Directive’; and
- Directive 2009/147/EEC; hereafter the ‘Birds Directive’.

The following national legislation is relevant to the proposed development:

- *Wildlife Act, 1976* and *Wildlife (Amendment) Act (2000)* (as amended); hereafter collectively referred to as the Wildlife Acts. The Wildlife Acts are the principal pieces of legislation at national level for the protection of wildlife and for the control of activities that may harm wildlife. All bird species, 22 other animal species or groups of species and 86 species of flora are protected under these pieces of legislation;
- *Planning and Development (Amendment) Act 2010* (as amended). This piece of legislation is the basis for Irish Planning. Under the legislation, development plans (usually implemented at local authority level) must include mandatory objectives for the conservation of natural heritage and for the conservation of European sites;
- *European Communities (EC) (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011)* (as amended); hereafter the ‘Birds and Habitats Regulations’. This legislation transposes the Habitats and Birds Directives into Irish law. It also contains regulations (49 and 50) that deal with invasive species (those included within the Third Schedule); and
- *Flora (Protection) Order, 2015*. This lists species of plant protected under Section 21 of the Wildlife Act, 1976.

### 7.2.1 Local Authority Plans

The local authority for the proposed development is Dún Laoghaire-Rathdown County Council. Plans and developments within Dún Laoghaire-Rathdown County must comply with the policies and objectives of the *Dún Laoghaire-Rathdown County Development Plan 2016 – 2022* (DLRCC, 2016a), which in turn references the *National Biodiversity Action Plan 2017-2021* (DCHG, 2017), and the *Dún Laoghaire-Rathdown Biodiversity Plan 2009-2013* (DLRCC, 2009). Natural heritage policies of the *Dún Laoghaire-Rathdown County Development Plan 2016 – 2022* which are relevant to the proposed development are listed below.

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### 7.2.2 *Dún Laoghaire-Rathdown County Council Development Plan 2016-2022 Policies*

The following policies from the *Dún Laoghaire-Rathdown County Development Plan 2016-2022* (DLRCC, 2016) are relevant to the proposed development as several designated sites are within the downstream receiving environment, and due to the potential for the site to host protected species, hedgerows and/or invasive species.

**LHB19: Protection of Natural Heritage and the Environment** – It is council policy to protect and conserve the environment including, in particular, the natural heritage of the County and to conserve and manage Nationally and Internationally important and EU designated sites – such as Special Protection Areas, candidate Special Areas of Conservation, proposed Natural Heritage Areas and Ramsar sites – as well as non-designated areas of high nature conservation value which serve as ‘Stepping Stones’ for the purposes of Article 10 of the Habitats Directive.

**LHB20: Habitats Directive** – *It is council policy to ensure the protection of natural heritage and biodiversity, including European sites that form part of the Natura 2000 network, in accordance with relevant EU Environmental Directives and applicable National Legislation, Policies, Plans and Guidelines.*

**LHB22: Designated Sites** – *It is council policy to protect and preserve areas designated as proposed Natural Heritage Areas, candidate Special Areas of Conservation, and Special Protection Areas. It is Council Policy to promote the maintenance and as appropriate, delivery of ‘favourable’ conservation status of habitats and species within these areas.*

**LHB23: Non-Designated Areas of Biodiversity Importance** – *It is council policy to protect and promote the conservation of biodiversity in areas of natural heritage importance outside Designated Areas and to ensure that notable sites, habitats and features of biodiversity importance outside Designated Areas and to ensure that notable sites, habitats and features of biodiversity importance – including species protected under the Wildlife Acts 1976 and 2000, the Birds Directive 1979, the Habitats Directive 1992, and rare species – are adequately protected. Ecological assessment will be carried out for all developments in areas that support, or have potential to support, features of biodiversity importance or rare and protected species and appropriate mitigation/avoidance measures will be implemented. In implementing this policy regard shall be had to the recommendation and objectives of the Green City Guideline (2008) and ‘Ecological Guidance Notes for Local Authorities and Developers’ (Dún Laoghaire-Rathdown Version 2014).*

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**LHB26: Hedgerows** – It is council policy to protect hedgerows in the county from development, which would impact adversely upon them. It is council policy to promote the county’s hedgerows by increasing coverage, where possible, using locally native species and to develop an appropriate code of practice for road hedgerow maintenance.

**LHB29: Invasive Species** – It is council policy to support as appropriate the National Parks and Wildlife Service efforts to seek to control and manage alien / invasive species (e.g. Japanese knotweed, Giant Hogweed, Himalayan Balsam, etc.) and noxious weeds (e.g. Ragwort, Thistle, Dock, etc.) within the county.

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## 7.3 METHODOLOGY

### 7.3.1 Scope

The zone of influence<sup>1</sup> of the proposed development is a distance within which it could potentially affect key ecological receptors (KERs)<sup>2</sup>. There is no set recommended distance for the zone of influence of a project, and it is likely to vary according to the KER in question. The potential zone of influence of the proposed development is regarded to be relatively limited and less than 1km from the site perimeter in most cases (with the exception of European sites).

### 7.3.2 Desk Study

A desk study was undertaken in October 2018 to collect any available information on the local ecological environment. The following resources assisted in the production of this report, in addition to those listed in the “Reference” section of this report:

- Ordnance Survey Ireland mapping and aerial photography available from OSI online GeoHive mapping resource (Ordnance Survey Ireland, 2018);
- Data on protected species and European sites, available for download and interrogation from the National Parks and Wildlife Service maps and data page (NPWS, 2018);
- Information on the status of EU protected habitats and species in Ireland (National Parks & Wildlife Service, 2013a & 2013b);
- Information on the Conservation Status of Birds in Ireland 2014 – 2019 (Colhoun & Cummins, 2014);
- Online data available on protected species as held by the National Biodiversity Data Centre (NBDC) from [www.biodiversityireland.ie](http://www.biodiversityireland.ie);
- Data on waterbodies, available for download and interrogation from the Environmental Protection Agency web map service (Environmental Protection Agency, 2018);

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<sup>1</sup> In accordance with NRA (2009) guidelines, the Zone of Influence is an important term to define the receiving environment for the activities associated with the project and the biophysical changes that are likely to occur. The Zone of Influence is the ‘effect area’ over which change is likely to occur. This differs for different species and habitats due to varying sensitivities to potential impacts.

<sup>2</sup> KERs are defined in accordance with NRA guidelines (2009) as being ‘*both of sufficient value to be material in decision making and likely to be affected significantly*’. To qualify as KERs, features must be of local importance (higher value) or higher as per the criteria in Appendix 7 - A.

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- Information on soils, geology and hydrogeology in the area available for download and interrogation from the Geological Survey Ireland online Spatial Resources service (GSI, 2018); and
  - Information on the location, nature and design of the project supplied by the applicant's design team.

### 7.3.3 Field Surveys

This assessment is based on field observations from a site visits carried out on 6<sup>th</sup> September 2018 and previous surveys carried out by Scott Cawley on the site directly adjacent on 22<sup>nd</sup> August 2017 and 13<sup>th</sup> September 2017. The surveys followed best practice and relevant guidelines and involved a detailed inspection of all areas of the proposed site as well as a general examination of surrounding area.

#### Habitat and Flora

All habitat types were identified and classified using the *Guide to Habitats in Ireland* (Fossitt, 2000). Within each habitat dominant and abundant plant species, indicator species and / or species of conservation interest were recorded. Plant nomenclature follows the *Checklist of the Flora of Britain & Ireland* (BSBI, 2007)<sup>3</sup>.

#### Fauna

Fauna were surveyed direct observation where possible but as most Irish mammal species are nocturnal and/or secretive in habit, survey methods relied on finding signs such as evidence of breeding or resting places, tracks, feeding signs and droppings. The habitats on site were assessed for signs of usage by protected/red-listed fauna species, and potential to hold these species.

Bird activity on the site was noted during a multidisciplinary survey of the site on 6<sup>th</sup> September 2018. The conservation status of the bird species recorded was as per the current *Birds of Conservation Concern in Ireland* (BoCCI) list. This classifies bird species into categories; "Red List" birds of high conservation concern, "Amber List" birds of medium conservation concern and "Green List" birds, not considered threatened (Colhoun & Cummins, 2013).

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<sup>3</sup> This is the most up to date Botanical Society of Britain and Ireland Checklist that is currently available.

The trees within or adjacent to the subject lands were assessed for their suitability for roosting bats, having regard to the following guidelines:

- *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collins, 2016);
- *Bat Mitigation Guidelines for Ireland* (NPWS, 2006); and,
- *Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes* (NRA, 2006).

They were assessed based on the presence of features commonly used by bats. Examples of such features include:

- Natural holes;
- Woodpecker holes;
- Cracks/splits in major limbs;
- Loose bark; and,
- Hollows/cavities.

Trees were categorised according to the assessment criteria outlined in Table 7.1 below are derived from Collins (2016)<sup>4</sup>.

**Table 7.1. Assessment criteria for potential suitability of proposed development sites for bats, derived from similar criteria in *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collins, 2016).**

Suitability	Description of Roosting Habitat	Commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats	Negligible habitat features on site likely to be used by commuting or foraging bats
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions <sup>5</sup> and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).  A tree of sufficient size and age to	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat.  Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub

<sup>4</sup> Based on our professional experience and understanding, a category of “*moderate suitability*” is not included in the assessment criteria as it is felt that this category overlaps significantly with the categories “*low suitability*” and “*high suitability*”.

<sup>5</sup> For example in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.

	contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.	
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats in a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	<p>Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub, hedgerows. Linked back gardens, river valleys, streams and woodland edge.</p> <p>Habitat that is connected to the wider landscape that could be used by foraging bats such as trees scrub, grassland or water.</p> <p>Site is close to and connected to a known roost.</p>

There are no built structures within the subject lands, thus internal inspections were not necessary. No bat activity surveys were carried out on-site given the lack of suitable roosting features within the subject lands and the timing of the surveys (September falls outside of the optimum season for monitoring bat activity). However, two bat activity surveys were conducted directly adjacent to the subject lands on 22<sup>nd</sup> August 2017 and 13<sup>th</sup> September 2017 by Scott Cawley. As part of these earlier surveys, an automated detector (Wildlife Acoustics SMZC) was also deployed between 22<sup>nd</sup> and 29<sup>th</sup> August 2017 directly west of the site. Weather during these 2017 surveys was dry and warm and suitable for bat activity surveys.

### 7.3.3.1 Limitations of Field Surveys / Data Deficiencies

While the habitats and flora survey was undertaken outside of the optimal survey season for higher plants, this is not considered to be a significant limitation in this instance due to the overwhelmingly built nature of the subject lands.

While bird surveys were undertaken outside of the breeding season, this is not considered to impose a significant limitation on the findings of this report, as the lands are of limited value and potential for birds, being largely composed of buildings and artificial surfaces, which will be replaced by similar habitats.

With regards to large mammals such as badger and otter, surveys were conducted during the optimal season for survey based on *Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes* (NRA, undated).



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No bat surveys were undertaken of the subject lands, however as demonstrated in section 7.3.3.2 above the site is of low suitability for roosting bats given the absence of suitable roosting structures and industrial nature of the surrounding environment. Previous bat surveys completed within the adjacent site on 22<sup>nd</sup> August 2017 and 13<sup>th</sup> September 2017 by Scott Cawley concluded that that no roosting bats are present within or adjacent to the subject lands.

#### **7.3.4 Ecological Evaluation and Impact Assessment**

##### **Site Evaluation Criteria**

The criteria used to assess the ecological value and significance of habitats are provided in Appendix 7-A. These follow the *Guidelines for Assessment of Ecological Impacts of National Road Schemes* (NRA, 2009) and is consistent with *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* (CIEEM, 2018).

##### **Impact Assessment Criteria**

In accordance with *NRA guidelines* (2009), impact assessment is only undertaken of 'key ecological receptors' (KERs). KERs are within the zone of influence<sup>6</sup> of the development and are 'both of sufficient value to be material in decision making and likely to be affected significantly'. To qualify as KERs, features must be of local Importance (higher value) or higher as per the criteria in Appendix 7-A.

Impacts are described as being either significant or not significant. Broadly, significant effects encompass impacts on structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution) (CIEEM, 2018). In this instance, effects are qualified with reference to a geographic scale as outlined in Appendix 7-A of this report.

An impact is considered to be ecologically significant if it impacts the integrity or conservation status of a KER within a specified geographical area. If impacts are not found to be significant at the highest geographical level at which the KER has been valued, then the impacts may be significant at a lower level. For instance, there may be a significant impact at a local level on a species which is valued at an international level. The highest levels of impact significance for each KER 'value' rating are shown in Table 7.2.

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<sup>6</sup> In accordance with NRA (2009) guidelines, the Zone of Influence is an important term to define the receiving environment for the activities associated with the project and the biophysical changes that are likely to occur. The Zone of Influence is the 'effect area' over which change is likely to occur. This differs for different species and habitats due to varying sensitivities to potential impacts.

**Table 7.2. Maximum level of impact significance for Key Ecological Receptors**

<b>Key Ecological Receptor 'value' rating</b>	<b>Highest possible significance level</b>
International Importance	Significant Positive/ Negative impact at International level
National Importance	Significant Positive/ Negative impact at National level
County Importance	Significant Positive/ Negative impact at County level
Local Importance (higher value)	Significant Positive/ Negative impact at Local level

## **7.4 Description of Existing Environment**

### **7.4.1 General Site Overview and Surroundings**

The immediate surrounding areas fall within the Sandyford Business District, and are mostly man-made in nature, with little or no vegetation (e.g. grass, shrubs or trees). Some areas of amenity grassland and tree planting can be found within the immediate environment with the closest area of planting along the Carmanhall Road to the south of the subject lands.

### **7.4.2 Summary of Key Ecological Features**

Table 7.3 below, summarises all ecological features identified as Key Ecological Receptors (KERs) based on the completion of the desk study and field survey of the subject lands. Key Ecological Receptors have been identified as at risk of potentially significant impacts via a source-pathway-receptor link. KER's are valued as Local Importance (Lower Value) or above as per the criteria set out in Appendix 7-A.

Designated Sites have not been assessed as being KERs. Whilst there is a potential source-receptor pathway between the proposed works and a number of European and Nationally designated sites within Dublin Bay, no significant effects are predicted either alone or in-combination with other plans or projects due to the following:

#### Surface waters:

- The temporary nature of any discharges related to construction of the site;
- The downstream distance between the subject lands and the European Site;
- In the unlikely event of a pollution event during construction, this would not be of such a magnitude that it would have a significant adverse effect on water quality in Dublin Bay;
- The existing nature of the subject lands, i.e. they are currently composed of existing hard standing and artificial surfaces and thus will not give rise to an increase in the surface water run-off; and,
- Recent water quality assessment of Dublin Bay also shows that Dublin Bay on the whole, currently has an '*Unpolluted*' water quality status (EPA, 2018).

#### Foul waters:

- Ringsend WWTP is required to operate under an EPA licence (D0034-01) and to meet environmental legislative requirements;
- Further upgrade of the WWTP is currently in planning; and,
- The foul discharge from the proposed development would equate to a small percentage of the overall licensed discharge at Ringsend WWTP and thus, would not impact on the overall water quality within Dublin Bay.

Birds have been included as KERs on a precautionary basis as all birds, their nests and their eggs are protected under the Wildlife Acts, and it is possible that they could breed within the site.

Although bats and their roosts are protected under the Wildlife Acts, given the industrial nature of the surrounding environment, the lack of suitable roosting features within the subject lands and the lack of substantial linear vegetation features for commuting/foraging species, bats have been assessed as not being KERs.

Table 7.3 - Ecological Evaluation of Key Ecological Receptors (Highlighted in blue)

Habitat / Species	Highest Ecological Valuation Level	Sensitive Ecological Receptor?
<b>Designated Sites</b>		
Designated Sites	National-International	No
<b>Protected Species</b>		
Nesting / Breeding Birds	Local importance (lower value)	Yes – For reasons outlined in Section 7.4.2
Potential Roosting/Foraging/ Commuting Bats	Local importance (lower value)	No – For reasons outlined in Section 7.4.2
Other Terrestrial Mammals	Local importance (lower value)	No
<b>Habitats &amp; Flora</b>		
Buildings and Artificial Surfaces (BL3)	Local importance (lower value)	No
Treelines (WL2)	Local importance (lower value)	No
Recolonising Bare Ground (ED3)	Local importance (lower value)	No
Amenity Grassland (GA2)	Local importance (lower value)	No
Flowerbeds and Borders (BC4)	Local importance (lower value)	No

#### 7.4.3 Designated Sites

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### Protected Areas

Special Areas of Conservation (SAC) are designated under the EC Habitats Directive (92/43/EEC) (as amended). The legislation provides for the protection of certain habitats (listed on Annex I of the Directive) and/ or species (listed on Annex II) within SACs. Special Protection Areas (SPAs) are designated under the Birds Directive (2009/147/EC). This allows for the protection of bird species on Annex I of the Directive, regularly occurring populations of migratory species (such as ducks, geese or waders), and important wetland habitats for birds, including within SPAs.

There are a range of European Sites (i.e. SACs and SPAs) within the vicinity of the proposed development site (see Figure 7.2 for the location of European Sites relative to the proposed development and Table 7.4 for the reasons for designation). The proposed development does not overlap with or pass through any European Sites. The nearest European Sites are South Dublin Bay SAC (000210) and South Dublin Bay and River Tolka Estuary SPA (004024), both of which lie 3.4km north of proposed development site.

National Heritage Areas (NHAs) are designated under the Wildlife Acts to protect habitats, species or geology of national importance. Many of the NHAs in Ireland overlap with European sites. Although many NHA designations are not yet fully in force under this legislation (referred to in the meantime as 'proposed NHAs' or pNHAs), they are currently offered some level of protection by planning authorities who have regard for them in planning policies and decisions<sup>7</sup>.

There are a range of pNHAs within the vicinity of the proposed development (see Figure 7.3 for locations relative to the proposed development site). There are no NHAs within the surrounding areas. The nearest pNHA is the Fitzsimon's Wood pNHA, which lies just approximately 1.5km south west of proposed development site.

For reasons indicated within section 7.4.2 of this report, designated sites have not been considered as a KER.

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<sup>7</sup> Source: NPWS Website. Available online at [www.npws.ie/protected-site/nha](http://www.npws.ie/protected-site/nha)

Figure 7.1: European sites in the vicinity of the proposed development

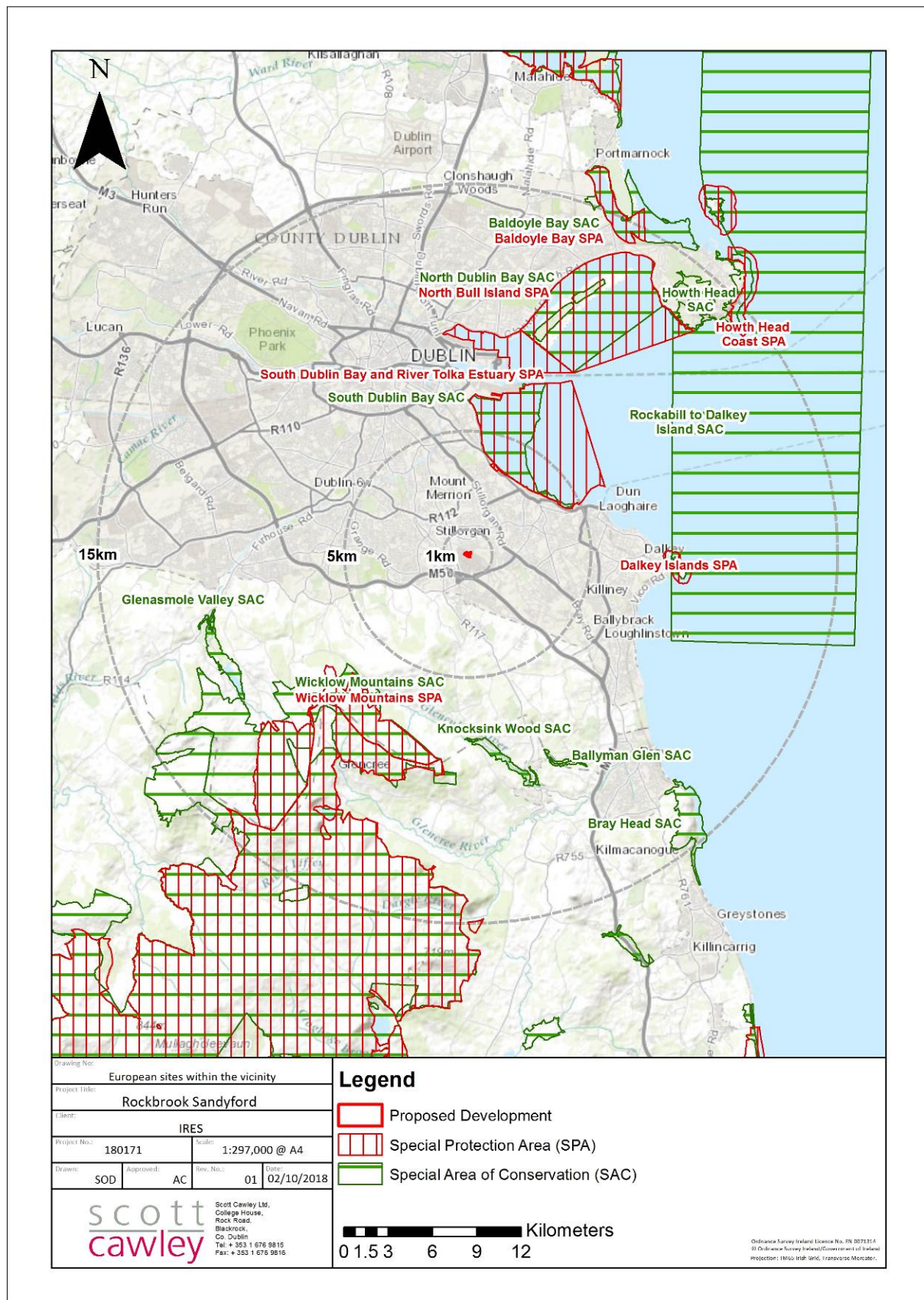
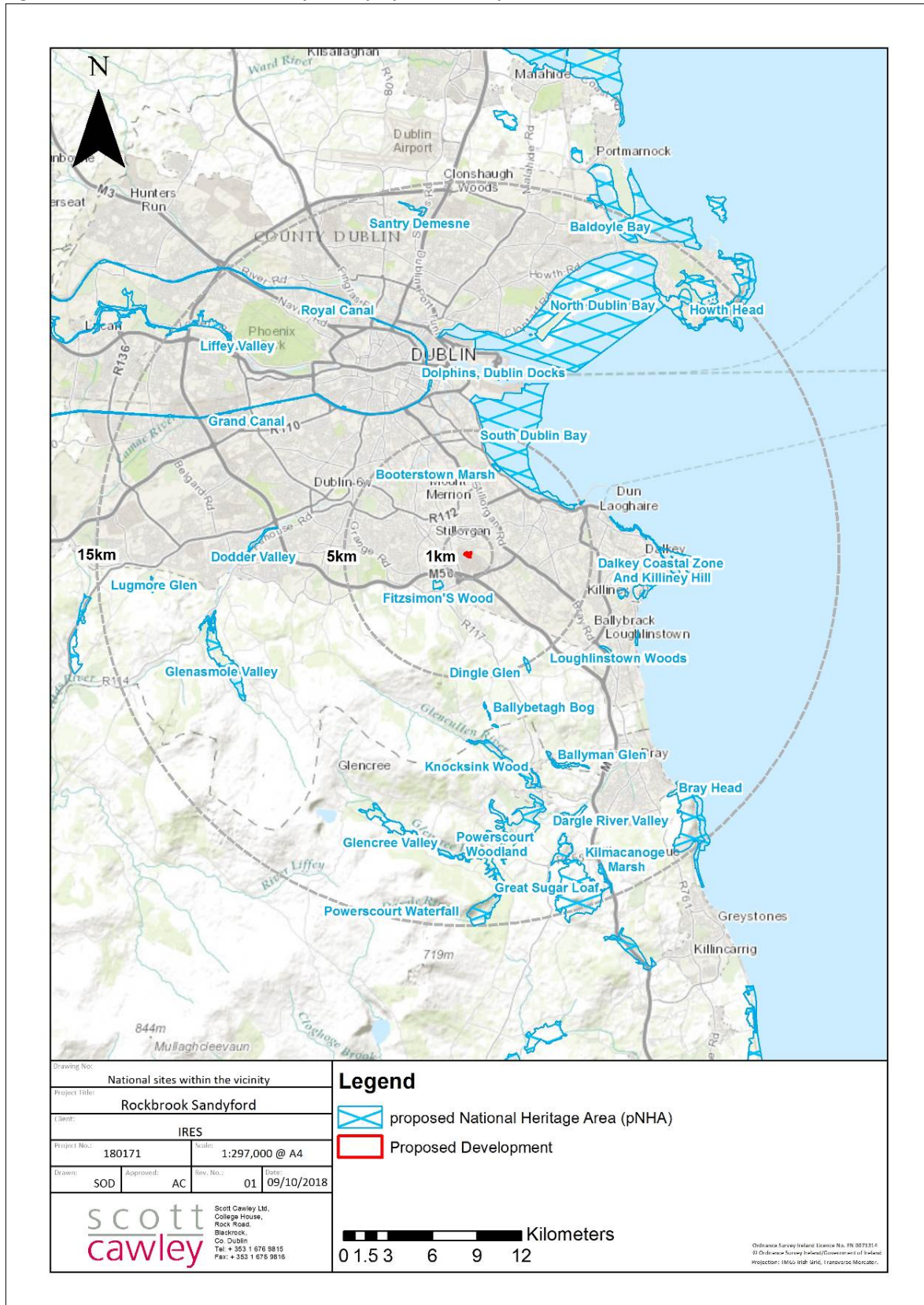




Figure 7.2: National sites in the vicinity of the proposed development



**Table 7.4: European Designated Sites and Nationally Designated Sites within the vicinity of the Proposed Development**

Site name and code	Distance from Proposed Development (approximate)	Reasons for designation <sup>8</sup> (*= Priority Habitat) (Sourced from NPWS online Conservation Objectives)
<b>Special Area of Conservation (SAC)</b>		
South Dublin Bay SAC [000210]	Located c. 3.4km north of the subject lands	<b>Conservation Objectives Version 1.0 (22/08/13)</b> <b>Annex I Habitats:</b> [1140] Mudflats and sandflats not covered by seawater at low tide [1210] Annual vegetation of drift lines [1310] <i>Salicornia</i> and other annuals colonizing mud and sand [2110] Embryonic shifting dunes
Wicklow Mountains SAC [002122]	Located c. 6.5km south of the subject lands	<b>Conservation Objectives Version 1.0 (31/07/17)</b> <b>Annex I Habitats:</b> [3110] Oligotrophic waters containing very few minerals of sandy plains ( <i>Littorelletalia uniflorae</i> ) [3160] Natural dystrophic lakes and ponds [4010] Northern Atlantic wet heaths with <i>Erica tetralix</i> [4030] European dry heaths [4060] Alpine and Boreal heaths [6130] Calaminarian grasslands of the <i>Violetalia calaminariae</i>

<sup>8</sup> "Qualifying Interests" for SACs and "Special Conservation Interests" for SPAs based on relevant Statutory Instruments for each SPA, and NPWS Conservation Objectives for SACs downloaded from www.npws.ie in September 2018.

Site name and code	Distance from Proposed Development (approximate)	Reasons for designation <sup>8</sup> (*= Priority Habitat) (Sourced from NPWS online Conservation Objectives)
		<p>[6230] Species-rich <i>Nardus</i> grasslands, on siliceous substrates in mountain areas (and sub-mountain areas, in Continental Europe)</p> <p>[7130] Blanket bogs (* if active only)</p> <p>[8110] Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i>)</p> <p>[8210] Calcareous rocky slopes with chasmophytic vegetation</p> <p>[8220] Siliceous rocky slopes with chasmophytic vegetation</p> <p>[91A0] Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles</p> <p><b>Annex II Species:</b></p> <p>[1355] Otter – <i>Lutra lutra</i></p>
Knocksink Wood SAC [000725]	Located c. 7.3km south of the subject lands	<p><b>Conservation Objectives Generic Version 5.0 (15/08/16)</b></p> <p><b>Annex I Habitats:</b></p> <p>[7220] Petrifying springs with tufa formation (<i>Cratoneurion</i>)</p> <p>[91E0] Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>)</p>
Rockabill to Dalkey Island SAC [003000]	Located c. 8.1km east of the subject lands	<p><b>Conservation Objectives Version 1.0 (07/05/13)</b></p> <p><b>Annex I Habitats:</b></p> <p>[1170] Reefs</p> <p><b>Annex II Species:</b></p>



Site name and code	Distance from Proposed Development (approximate)	Reasons for designation <sup>8</sup> (*= Priority Habitat) (Sourced from NPWS online Conservation Objectives)
		[1351] <i>Phocoena phocoena</i> (Harbour Porpoise)
Ballyman Glen SAC [000713]	Located c. 8.4km south of the subject lands	<b>Conservation Objectives Generic Version 5.0 (15/08/16)</b> <b>Annex I Habitats:</b> [7220] Petrifying springs with tufa formation ( <i>Cratoneurion</i> ) [7230] Alkaline fens
North Dublin Bay SAC [000206]	Located c. 8.4km north of the subject lands	<b>Conservation Objectives Version 1.0 (06/11/13)</b> <b>Annex I Habitats:</b> [1140] Mudflats and sandflats not covered by seawater at low tide [1210] Annual vegetation of drift lines [1310] <i>Salicornia</i> and other annuals colonizing mud and sand [1330] Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritima</i> ) [1410] Mediterranean salt meadows ( <i>Juncetalia maritimi</i> ) [2110] Embryonic shifting dunes [2120] Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes") [2130] * Fixed coastal dunes with herbaceous vegetation ("grey dunes")

Site name and code	Distance from Proposed Development (approximate)	Reasons for designation <sup>8</sup> (*= Priority Habitat) (Sourced from NPWS online Conservation Objectives)
		[2190] Humid dune slacks <b>Annex II Species:</b> [1395] Petalwort <i>Petalophyllum ralfsii</i>
Glenasmole Valley SAC [001209]	Located c. 10.2km west of the subject lands	<b>Annex I Habitats:</b> [6210] Semi-natural dry grasslands and scrubland facies on calcareous substrates ( <i>Festuco Brometalia</i> )(* important orchid sites) [6410] Molinia meadows on calcareous, peaty or clayey-silt-laden soils ( <i>Molinion caeruleae</i> ) [7220] * Petrifying springs with tufa formation ( <i>Cratoneurion</i> )
Bray Head SAC [000714]	Located c. 12.3km southeast of the subject lands	<b>Conservation Objectives Version 1.0 (11/04/17)</b> <b>Annex I Habitats:</b> [1230] Vegetated sea cliffs of the Atlantic and Baltic coasts [4030] European dry heaths

Site name and code	Distance from Proposed Development (approximate)	Reasons for designation <sup>8</sup> (*= Priority Habitat) (Sourced from NPWS online Conservation Objectives)
Howth Head SAC [000202]	Located c. 12.5km northeast of the subject lands	<b>Conservation Objectives Version 1.0 (06/12/16)</b>  <b>Annex I Habitats:</b> [1230] Vegetated sea cliffs of the Atlantic and Baltic coasts  [4030] European dry heaths
Baldoyle Bay SAC [000199]	Located c. 14.1km north of the subject lands	<b>Conservation Objectives Version 1.0 (19/11/12)</b>  <b>Annex I Habitats:</b> [1140] Mudflats and sandflats not covered by seawater at low tide [1310] <i>Salicornia</i> and other annuals colonizing mud and sand [1330] Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritima</i> ) [1410] Mediterranean salt meadows ( <i>Juncetalia maritimi</i> )
<b>Special Protection Area (SPA)</b>		
South Dublin Bay and River Tolka Estuary SPA [004024]	Located c. 3.4km north of the proposed development	<b>Conservation Objectives Version 1.0 (09/03/15)</b>  <b>Special Conservation Interest Species:</b> [A046] Light-bellied Brent Goose <i>Branta bernicla hrota</i> [A130] Oystercatcher <i>Haematopus ostralegus</i> [A137] Ringed Plover <i>Charadrius hiaticula</i> [A140] Grey Plover <i>Pluvialis squatarola</i>

Site name and code	Distance from Proposed Development (approximate)	Reasons for designation <sup>8</sup> (*= Priority Habitat) (Sourced from NPWS online Conservation Objectives)
		[A143] Knot <i>Calidris canutus</i> [A144] Sanderling <i>Calidris alba</i> [A149] Dunlin <i>Calidris alpina</i> [A157] Bar-tailed Godwit <i>Limosa lapponica</i> [A162] Redshank <i>Tringa totanus</i> [A179] Black-headed Gull <i>Croicocephalus ridibundus</i> [A192] Roseate Tern <i>Sterna dougallii</i> [A193] Common Tern <i>Sterna hirundo</i> [A194] Arctic Tern <i>Sterna paradisaea</i> [A999] Wetlands & Waterbirds
Wicklow Mountains SPA [004040]	Located c. 6.6km south west of the proposed development	<b>Conservation Objectives Generic Version 5.0 (15/08/16)</b>  <b>Special Conservation Interest Species:</b> [A098] Merlin <i>Falco columbarius</i>  [A103] Peregrine falcon <i>Falco peregrinus</i>
Dalkey Islands SPA [004172]	Located c. 7.8km south east of the proposed development	<b>Conservation Objectives Generic Version 5.0 (15/08/16)</b>  <b>Special Conservation Interest Species:</b> [A192] Roseate tern <i>Sterna dougallii</i> [A193] Common Tern <i>Sterna hirundo</i>  [A194] Arctic tern <i>Sterna paradisaea</i>

Site name and code	Distance from Proposed Development (approximate)	Reasons for designation <sup>8</sup> (*= Priority Habitat) (Sourced from NPWS online Conservation Objectives)
North Bull Island SPA [004006]	Located c. 8.4km north east of the proposed development	<p><b>Conservation Objectives Version 1.0 (09/03/15)</b></p> <p><b>Special Conservation Interest Species:</b></p> <p>[A046] Light-bellied Brent Goose <i>Branta bernicla hrota</i></p> <p>[A048] Shelduck <i>Tadorna tadorna</i></p> <p>[A052] Teal <i>Anas crecca</i></p> <p>[A054] Pintail <i>Anas acuta</i></p> <p>[A056] Shoveler <i>Anas clypeata</i></p> <p>[A130] Oystercatcher <i>Haematopus ostralegus</i></p> <p>[A140] Golden Plover <i>Pluvialis apricaria</i></p> <p>[A141] Grey Plover <i>Pluvialis squatarola</i></p> <p>[A143] Knot <i>Calidris canutus</i></p> <p>[A144] Sanderling <i>Calidris alba</i></p> <p>[A149] Dunlin <i>Calidris alpina</i></p> <p>[A156] Black-tailed Godwit <i>Limosa limosa</i></p> <p>[A157] Bar-tailed Godwit <i>Limosa lapponica</i></p> <p>[A160] Curlew <i>Numenius arquata</i></p> <p>[A162] Redshank <i>Tringa totanus</i></p> <p>[A169] Turnstone <i>Arenaria interpres</i></p> <p>[A179] Black-headed Gull <i>Croicocephalus ridibundus</i></p> <p>[A999] Wetlands &amp; Waterbirds</p>

Site name and code	Distance from Proposed Development (approximate)	Reasons for designation <sup>8</sup> (*= Priority Habitat) (Sourced from NPWS online Conservation Objectives)
Howth Head Coast SPA [004113]	Located c. 14km north east of the proposed development	<b>Conservation Objectives Generic Version 5.0 (15/08/16)</b>  <b>Special Conservation Interest Species:</b>  [A188] Kittiwake <i>Rissa tridactyla</i>
Baldoyle Bay SPA [004024]	Located c. 14.1km north east of the proposed development	<b>Conservation Objectives Version 1.0 (27/02/13)</b>  <b>Special Conservation Interest Species:</b>  [A046] Light-bellied Brent Goose <i>Branta bernicla hrota</i> [A048] Shelduck <i>Tadorna tadorna</i> [A137] Ringed Plover <i>Charadrius hiaticula</i> [A140] Golden Plover <i>Pluvialis apricaria</i> [A141] Grey Plover <i>Pluvialis squatarola</i> [A157] Bar-tailed Godwit <i>Limosa lapponica</i>  [A999] Wetlands & Waterbirds
<b>Proposed National Heritage Areas (pNHAs)</b>		
Fitzsimon's Wood pNHA [001753]	Located c. 1.5km from the proposed development	The site is designated for the presence of a woodland consisting of mature birch and oak.
South Dublin Bay pNHA [000210]	Located c. 3.6km from the proposed development	There is no site synopsis available for this site, however it is likely that it is designated for the same reasons as the European site with which it shares a name.

Site name and code	Distance from Proposed Development (approximate)	Reasons for designation <sup>8</sup> (*= Priority Habitat) (Sourced from NPWS online Conservation Objectives)
Boosterstown Marsh pNHA [001205]	Located c. 3.6km from the proposed development	The site is designated for a variety of plant species including the protected species Borrer's Saltmarshgrass ( <i>Puccinellia fasciculata</i> ).  The site is important for various ornithological species including – Snipe, Kingfisher, Oystercatcher, Redshank, Black-headed gull and a variety of other waders and gulls.
Dingle Glen pNHA [001207]	Located c. 4.7km from the proposed development	The importance of the site lies in the variety of habitats within a small area, including woodland of willows <i>Salix sp.</i> , Ash <i>Fraxinus excelsior</i> , Sessile oak <i>Quercus petraea</i> and Spindle <i>Euonymus europaeus</i> .
Dalkey Coastal Zone and Killiney Hill pNHA [001206]	Located c. 5.9km from the proposed development	This site represents a fine example of a coastal system with habitats ranging from the sub-littoral to coastal heath. The flora is well developed and includes interesting species. The islands are important bird sites and are known nesting and roosting areas for many species including Herring Gulls, Great Black-backed Gull, Lesser Black-backed Gull, Shelduck, Fulmar, Mallard, Oystercatcher, Cormorants, Shag, Curlew and various Tern species (Common, Arctic and Roseate). Dalkey Sound is noteworthy for the occurrence of many coastal invertebrate species including squat lobsters ( <i>Galathea spp.</i> ), swimming crabs ( <i>Portunus spp.</i> ) and the crawfish <i>Palinurus vulgaris</i> as well as rare European species of the Order Nudibranchia and the Spiny Starfish ( <i>Marthasterias glacialis</i> ). The site is also classified for its geological importance.
Ballybetagh Bog pNHA [001202]	Located c. 6km from the proposed development	Ballybetagh bog includes three areas of marshland with fen species recorded including Bottle sedge <i>Carex rostrate</i> , Early marsh-orchid <i>Dactylorhiza incarnata</i> and Marsh lousewort <i>Pedicularis palustris</i> .  The site is renowned for the number of skeletons of extinct Giant Irish Deer

Site name and code	Distance from Proposed Development (approximate)	Reasons for designation <sup>8</sup> (*= Priority Habitat) (Sourced from NPWS online Conservation Objectives)
		<i>Megaloceros giganteus</i> that have been found within it.
Loughlinstown Woods pNHA [001211]	Located c. 6.4km from the proposed development	This site is a good example of demesne-type mixed woodland. It is now used chiefly for amenity purposes. Species typically include Beech ( <i>Fagus sylvatica</i> ), Sycamore ( <i>Acer pseudoplatanus</i> ), elm ( <i>Ulmus spp.</i> ), Holly ( <i>Ilex aquifolium</i> ) and Cherry Laurel ( <i>Prunus laurocerasus</i> ). Giant Hogweed ( <i>Heracleum mantegazzianum</i> ) has spread along the banks of the river.
Grand Canal pNHA [002104]	Located c. 6.4km from the proposed development	The ecological value of the canal lies in the diversity of species it supports as well as the presence of some rare species.  Otters are known to use the canal as well as Smooth newt <i>Lissotriton vulgaris</i> .  The rare and legally protected plant species Opposite-leaved pondweed <i>Groenlandia densa</i> is also present within the canal.
Dolphins, Dublin Docks pNHA [000201]	Located c. 7.1km from the proposed development	There is no site synopsis available for this site, however it is likely that it is designated for the same reasons as the European site with which it shares a border.
Knocksink Wood pNHA [000725]	Located c. 7.4km from the proposed development	There is no site synopsis available for this site, however it is likely that it is designated for the same reasons as the European site with which it shares a name.
Dodder Valley pNHA [000991]	Located c. 7.8km from the proposed development	The site represents the last remaining stretch of natural river vegetation on the river dodder in the built-up Greater Dublin Area.  48 bird species have been recorded in the area including kingfisher, Grebe and



Site name and code	Distance from Proposed Development (approximate)	Reasons for designation <sup>8</sup> (*= Priority Habitat) (Sourced from NPWS online Conservation Objectives)
		Dipper. The vegetation consists of woodland and along the banks there are wildflower meadows with a good diversity of plant species.
Royal Canal pNHA [002103]	Located c. 7.8km from the proposed development	The ecological value of the canal lies in the diversity of species it supports as well as the presence of some rare species.  Otters are known to use the canal as well as Smooth newt <i>Lissotriton vulgaris</i> .  The rare and legally protected plant species Opposite-leaved pondweed <i>Groenlandia densa</i> is also present within the canal.
North Dublin Bay pNHA [000206]	Located c. 8.3km from the proposed development	There is no site synopsis available for this site, however it is likely that it is designated for the same reasons as the European site with which it shares a name.
Ballyman Glen pNHA [00713]	Located c. 8.5km from the proposed development	There is no site synopsis available for this site, however it is likely that it is designated for the same reasons as the European site with which it shares a name.
Powerscourt Woodland pNHA [001768]	Located c. 9.9km from the proposed development	The site contains mixed woodland habitat with a variety of native and introduced species. The rare Myxomycete fungus species <i>Didymium clavus</i> can be found at the site.  The site is of great educational value.
Glenasmole Valley pNHA [001209]	Located c. 10.3km from the proposed development	There is no site synopsis available for this site, however it is likely that it is designated for the same reasons as the European site with which it shares a name.

Site name and code	Distance from Proposed Development (approximate)	Reasons for designation <sup>8</sup> (*= Priority Habitat) (Sourced from NPWS online Conservation Objectives)
Glencree Valley pNHA [001755]	Located c. 10.7km from the proposed development	The importance of the site is that it is a good example of deciduous woodland as well as the presence of upland river and boggy flushes which add to the diversity of the site.  Bird life observed within the valley include Long-eared owl <i>Asio otus</i> , Dipper <i>Cinclus cinclus</i> and Blackcap <i>Sylvia atricapilla</i> .
Dargle River Valley pNHA [001754]	Located c. 11.1km from the proposed development	The importance of the site is that it is a fine example of a woodland valley.  The Red Data Book species Yellow archangel <i>Lamiastrum galeobdolon</i> occurs along the river.  The site is also of geological importance.
Great Sugar Loaf pNHA [001769]	Located c. 11.9km from the proposed development	The site is of both ecological and geological interest and also acts as a prominent feature in the landscape of north County Wicklow. The main habitats on the site are dry mountain heath and upland grassland.  The site is also a valuable educational and recreational asset.
Liffey Valley pNHA [000128]	Located c. 12.3km from the proposed development	The site is important due to the diversity of habitats ranging from aquatic to terrestrial. A number of rare and threatened plant species have been recorded from the site including the threatened Green figwort <i>Scrophularia umbrosa</i> , the rare and legally protected Hairy St. John's-wort <i>Hypericum hirsutum</i> , the threatened species Yellow archangel <i>Lamiastrum galeobdolon</i> .
Bray Head pNHA [000714]	Located c. 12.4km from the proposed development	There is no site synopsis available for this site, however it is likely that it is designated for the same reasons as the European site with which it shares a name.

Site name and code	Distance from Proposed Development (approximate)	Reasons for designation <sup>8</sup> (*= Priority Habitat) (Sourced from NPWS online Conservation Objectives)
Howth Head pNHA [000202]	Located c. 12.7km from the proposed development	There is no site synopsis available for this site, however it is likely that it is designated for the same reasons as the European site with which it shares a name.
Lugmore Glen pNHA [001212]	Located c. 12.8km from the proposed development	The site is important as it is a good example of a wooded glen with a good example of woodland plants. The Red Data Book species Yellow archangel <i>Lamiastrum galeobdolon</i> occurs within the site.
Santry Demesne pNHA [000178]	Located c. 13.4km from the proposed development	The site comprises the remnants of a former demesne woodland which is of general ecological interest. The rare and legally protected plant species Hairy St. John's-wort <i>Hypericum hirsutum</i> was recorded at the site.
Kilmacanoge Marsh pNHA [000724]	Located c. 13.5km from the proposed development	The importance of the site comes from the diversity of species-rich wetland habitats within a relatively small area and for the presence of some rare invertebrate species including <i>Oxycera falleni</i> , <i>Oxycera morrisii</i> and <i>Parhelophilus consimilis</i> .
Powerscourt Waterfall pNHA [001767]	Located c. 13.6km from the proposed development	The site is important due to the presence of the waterfall and it shows good exposures of schist and granite. The area contains rare plant species including Killarney fern <i>Trichomanes speciosum</i> and a rare species of Myxomycete fungus <i>Diderma lucidum</i> .  A good variety of bird species breed within the site.
Baldoyle Bay pNHA	Located c. 14.2km from the proposed development	There is no site synopsis available for this site, however it is likely that it is

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Site name and code	Distance from Proposed Development (approximate)	Reasons for designation <sup>8</sup> (*= Priority Habitat) (Sourced from NPWS online Conservation Objectives)
[000199]	development	designated for the same reasons as the European site with which it shares a name.

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#### 7.4.4 Habitats and Flora

The National Biodiversity Data Centre (NBDC) database search returned zero records of protected flora species under the Flora (Protection) Order 2015 within 2km of the subject lands and no protected or rare flora species were specifically recorded within the boundary of the subject lands.

The NBDC database search returned records of the following nine invasive species within 2km of the subject lands (only records at a resolution of <1km were considered):

- Sycamore *Acer psuedoplatanus*: The NBDC lists this species as a medium impact invasive species. The site survey confirmed that this plant does occur within the proposed development site.
- Three-cornered garlic/leek *Allium triquetrum*: The NBDC lists this species as a medium impact invasive species. It is listed within the Third Schedule of the Birds and Habitats Regulations and is therefore subject to restrictions under Regulations 49 and 50 of the same legislation, which prohibits the introduction and dispersal, and the dealing and keeping of listed species. This plant does not occur within the proposed development site.
- Butterfly-bush *Buddleja davidii*: The NBDC lists this species as a medium impact invasive species. It is not listed within the Third Schedule of the Birds and Habitats Regulations. The site survey confirmed that this plant does occur within the proposed development site.
- Traveller's-joy *Clematis vitalba*: The NBDC lists this species as a medium impact invasive species. It is not listed within the Third Schedule of the Birds and Habitats Regulations. This plant does not occur within the proposed development site.
- Japanese Knotweed Hybrid *Fallopia japonica x sachalinensis = F. x bohemica*: The NBDC lists this species as a high impact invasive species. It is not listed within the Third Schedule of the Birds and Habitats Regulations. This plant does not occur within the proposed development site.
- Himalayan Honeysuckle *Leycesteria Formosa*: The NBDC lists this species as a medium impact invasive species. It is not listed within the Third Schedule of the Birds and Habitats Regulations. This plant does not occur within the proposed development site.
- Cherry Laurel *Prunus laurocerasus*: The NBDC lists this species as a high impact invasive species. It is not listed within the Third Schedule of the Birds and Habitats Regulations. This plant does not occur within the proposed development site.
- Rhododendron *Rhododendron ponticum*: The NBDC lists this species as a high impact invasive species. It is listed within the Third Schedule of the Birds and Habitats Regulations and is therefore subject to restrictions under Regulations 49 and 50 of the same legislation, which prohibits the introduction and

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dispersal, and the dealing and keeping of listed species. This plant does not occur within the proposed development site.

- *Blackcurrant Ribes nigrum*: The NBDC lists this species as a medium impact invasive species. It is not listed within the Third Schedule of the Birds and Habitats Regulations. This plant does not occur within the proposed development site.

The following habitat types of the Heritage Council classification system (Fossitt, 2000) were identified within the Study Area and subject lands as mapped in Figure 7.4. The habitats recorded within the subject lands were:

- BL3 – Buildings and Artificial Surfaces
- WL2 Treelines
- ED3 - Recolonising Bare Ground
- BC4 – Flowerbeds and Borders
- GA2 – Amenity Grassland

No species protected under the Flora (Protection) Order 2015 were recorded on the site.

#### 7.4.4.1 BL3 Buildings and Artificial Surfaces

The vast majority of the site is comprised of Buildings and Artificial Surfaces, consisting of tarmac hardstanding areas and areas of poured concrete foundations (see Plate 7.2). Beneath this area of hard standing is a basement carpark (Plate 7.1) which also consists entirely of artificial surfaces. This basement carpark contains no features (e.g. crevices) suitable for roosting bats. Pathways and pedestrian walks exist around the entire boundary of the site. Vegetation is scant or completely absent in these areas. This habitat was assessed as being of local importance (lower value).



Plate 7.1. Basement car park area consisting of hard standing



Plate 7.2. Majority of the subject lands dominated by artificial surfaces

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#### 7.4.4.2 WL2 Treelines

Only one linear vegetation feature exists onsite. A planted mature treeline of Leyland cypress *X Cuprocypris leylandii*, Italian alder *Alnus cordata* and sycamore *Acer pseudoplatanus* runs along the southern boundary of the site adjacent to the Carmanhall Road (see plate 3). This treeline was approximately 100m in length and varies in height between 5m and 20m. None of the trees were deemed suitable to host a population of roosting bats. The treelines within the subject lands were assessed as being of local importance (lower value) as they contain few or no native species, are species-poor and provide no connectivity to the wider landscape for commuting or foraging species.



Plate 7.3. Treeline along the southern boundary, adjacent to Carmanhall Road

#### 7.4.4.1 ED3 Recolonising Bare Ground

Towards the southern and western boundaries of the site the areas of hard standing and artificial surfaces transition into Recolonising Bare Ground (ED3) (plate 7.4).

Dense stands of Butterfly Bush (see plate 7.5) and Broad-leaved dock *Rumex obtusifolius* exist with occasional goat willow *Salix caprea* and an understorey of common couch, red fescue *Festuca rubra*, yarrow *Achillea millefolium* and dandelion *Taraxacum officinale* agg. Overall, this habitat was assessed as being of local importance (lower value).



Plate 7.4. Areas of recolonising bare ground within the eastern sections of the subject lands



Plate 7.5. Areas of recolonising bare ground with stands of Butterfly bush

#### 7.4.4.1 BC4 Flowerbeds and Borders and GA2 Amenity Grassland

The western (plate 7.6 below) and northern (plate 7.7) boundaries of the subject lands consist of small strips of Amenity Grassland bordered by ornamental flowerbeds. Species recorded within this habitat include Yorkshire fog *Holcus lanatus*, daisy *Bellis perennis*, ribwort plantain *Plantago lanceolata* and dandelion. This habitat is assessed as being of local ecological importance (lower value).



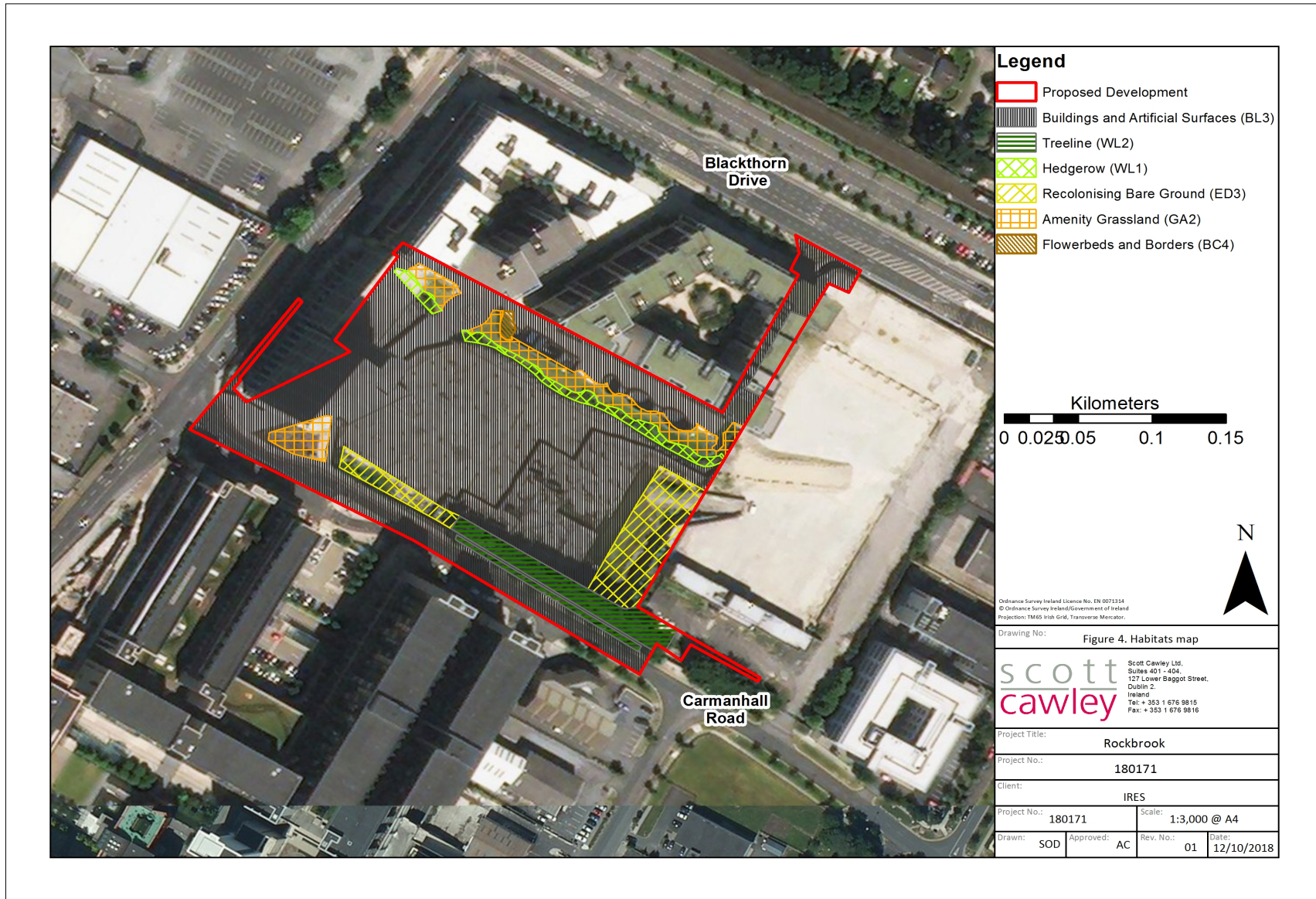
Plate 6. Area of amenity grassland and birch plantings along the western site boundary



Plate 7. Area of amenity grassland and ornamental flowerbeds along the northern boundary of the subject lands.



Figure 7.4. Habitat Map



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## 7.4.5 Fauna

### 7.4.5.1 Terrestrial mammals

Several records of protected mammal species were retrieved during the desk study.

European hedgehog *Erinaceus europaeus* is listed as 'least concern' in Ireland (Marnell *et al.*, 2009) and is protected under the *Wildlife Acts (As Amended)*. There is one record of the species within 2km of the subject lands, recorded in 2011. No signs of it were recorded during field surveys in September 2018.

Eurasian Pygmy Shrew *Sorex minutus* is listed as 'least concern' in Ireland (Marnell *et al.*, 2009), and there is one record of the species from a 2016 survey within 2km of the proposed development. No signs of Pygmy shrew were noted within the subject lands.

Eurasian Red Squirrel *Sciurus vulgaris* is listed as 'near threatened' in Ireland (Marnell *et al.*, 2009) and is protected under the *Wildlife Acts (As Amended)*. There is one record of the species from within 2km of the proposed development, with this recorded in 2016.

There is one record of Otter *Lutra lutra*, which is listed as 'near threatened' within the vicinity of the proposed development. This recording was made in 2016. No signs of otter (*i.e.* spraint or tracks) were found within the subject lands. The proposed development area and the immediate surroundings do not contain any suitable habitat for Otter.

Badger *Meles meles* is also listed as 'least concern' in Ireland (Marnell *et al.*, 2009). There is one record of this species within the vicinity of the proposed development, recorded in 2013. No evidence of badge was recorded during the site visit.

The subject lands and its surroundings comprise entirely of built structures and hardstanding, and therefore present no opportunity for burrowing species such as badger or rabbits. Some species may pass through the site or feed in the area, however it is highly unlikely that the proposed development site would be of importance for any species of conservation concern. Small mammals such as the Brown Rat *Rattus norvegicus* are likely to be present.

No evidence of any the aforementioned species was specifically recorded within the boundary of the subject lands.

### 7.4.5.2 Bats

The review of records held by Bat Conservation Ireland returned 45 records of bat roosts from within 10km of the subject lands. The closest roost record is approximately 2km south of the subject lands and is a common pipistrelle *Pipistrellus pipistrellus* roost.

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Suitably mature trees within or surrounding the site were checked for evidence of bats and features that could be used as potential bat roosts, such features include flaking bark, knot holes, cavities, broken limb and dense ivy cover. Only one treeline existed on site, located along Carmanhall Road to the southern boundary of the study area. None of these trees contained suitable bat roosting features.

Previous bat surveys carried out by Scott Cawley directly adjacent to the subject lands in 2017 found that low numbers of Soprano pipistrelle, Common pipistrelle and Leisler's bats use the area for commuting and foraging purposes. No bats roosts were identified on-site during this survey.

The lands are deemed low suitability for roosting, commuting and foraging bats. This is in light of the built nature of the lands and surrounding environment and lack of suitable roosting sites as well as the low levels of bat activity recorded during previous surveys. Taking this into account, there will be no significant effects on bats as a result of the proposed development.

#### **7.4.5.3 Birds**

89 species of birds were returned from the search of the NBDC database. These records include several bird species commonly associated with urban and suburban environments such as common starling *Sturnus vulgaris* common swift *Apus apus*, rock pigeon *Columba livia*, common wood pigeon *C. palumbus* house martin *Delichon urbicum*, gull species *Larus sp.* house sparrow *Passer domesticus*, and barn swallow *Hirundo rustica*, amongst others.

A variety of wetland and waterbirds that are likely to be more closely associated with estuarine and marine habitats within the River Liffey Estuary and Dublin Bay were returned from the database search. The latter species include common snipe *Gallinago gallinago*, brent geese *Branta bernicla hrota* and common guillemot *Uria aalge* amongst others. They are considered highly unlikely to use the habitats within the subject lands for foraging or nesting, based on their ecology and association with wetland habitats, which do not occur within the site.

Eight bird species were recorded within the boundaries of the proposed development site during the site visit on 6<sup>th</sup> September 2018, five of which are Green-listed birds (i.e. Feral pigeon *Columba livia f. domestica*, Robin *Erithacus rubecula*, Jackdaw *Corvus monedula*, Wren *Troglodytes troglodytes* and Blackbird *Turdus merula*), one of which is Amber-listed (i.e. Starling *Sturnus vulgaris*) and one of which is Red-listed (i.e. Black-headed gull *Larus ridibundus*)

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## **7.5 Characteristics of the Proposed Development**

Full details of the proposed development are provided in the applicant's planning documentation. In brief, the proposed development will involve:

The development will consist of 2 no. residential blocks ranging in height from 5-14 storeys comprising a total of 428 no. apartments (including all balconies, terraces and roof gardens) arranged around two courtyards; communal and public open spaces including boulevards; 4 no. ground floor retail units; resident community uses and crèche with outdoor play area. The development will also include revisions to the existing basement levels including car and bicycle parking provision with new vehicular access from Carmanhall Road; apartment storage areas; waste storage areas; ESB substations and switch room and plant/service areas. The development will also include all piped infrastructure and ducting; green roofs; changes in level; internal roads and pathways; pedestrian access points; services provision; landscaping and boundary treatments and all associated site development and excavation works above and below ground.

### **7.5.1 Surface Water**

It is estimated that the proposed development will result in an overall decrease in surface water run-off as the existing site is dominated by hard standing with little to no vegetation present. It is estimated that the proposed development will result in an overall decrease in surface water run-off as the existing site is dominated by hardstanding with little to no vegetation present. It is proposed to intercept and treat surface water runoff through the use of green roofs across at least 60% of proposed roofs, ground floor landscaping and rainwater harvesting.

External surface water runoff from the proposed development will discharge attenuated surface water (through storage) to the existing local network on Carmanhall Road. Basement car park runoff will be treated by petrol interceptors and pumped to Blackthorn Drive utilising existing drainage.

### **7.5.2 Foul Water**

The proposed development will result in an overall increase of 3.05l/s foul effluent generated from the site, which will discharge to the existing foul drainage network, located along Blackthorn Drive to the west of the proposed development site. From there, the foul effluent from the proposed development site will be transferred via the existing sewer networks to Ringsend WWTP for treatment and disposal. This WWTP is required to operate under an EPA Licence and meet environmental legislative requirements.

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## **7.6 Potential Impacts of the Proposed Development**

As per the relevant guidelines, likely significant effects have only been assessed for Key Ecological Receptors, as listed in Table 7.3. An impact is considered to be ecologically significant if it is predicted to affect the integrity or conservation status of a Key Ecological Receptor at a specified geographical scale. All impacts are described in the absence of mitigation.

### **7.6.1 Breeding Birds**

In the absence of adoption of protocols for the protection of birds and their nests, there is potential for direct impacts on nesting birds and/or mortality of birds arising from the clearance of vegetation or removal of structures within the subject lands. This scenario would be most likely if works were to occur during the time of year when birds are likely to be nesting (1<sup>st</sup> March to 31<sup>st</sup> August, inclusive).

The subject lands were noted to contain a small number of common bird species which are found in a range of habitats in Ireland, including in urban and suburban areas. Although no breeding birds were noted to be using the subject lands and no nesting birds were observed within the proposed development site it is considered likely that birds could utilise vegetation or structures within or adjacent to the subject lands for nesting as surveys took place outside of the breeding bird season. For the purpose of this report a cautionary approach has been taken, assuming birds could nest within the site. No significant operational phase impacts are predicted on breeding birds as a result of the proposed development.

Despite the finding that the proposed development would not have a significant effect on breeding bird populations, measures have been proposed for the protection of all birds and their nests, as it is an offence under the Wildlife Acts to injure or kill a wild bird or to disturb a wild bird on or near a nest containing eggs or unflown young.

## **7.7 Mitigation Measures**

Upon establishing the impact that the proposed development may have upon the conservation objectives of downstream European Sites, bats, breeding birds and habitats wherever a potential impact is identified, mitigation measures need to be proposed to counteract this impact. Detailed mitigation measures have been proposed in relation to the proposed development and are summarised below.

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### 7.7.1 Birds

The following mitigation measures are proposed to comply with legislation protecting birds and their nests:

**BBM1:** In order to avoid disturbance of breeding birds, their nests, eggs and/or their unflown young, all works involving the demolition of buildings and/or the removal of trees or hedgerows will be undertaken outside of the nesting season (1<sup>st</sup> March to 31<sup>st</sup> August inclusive).

**Or where this seasonal restriction cannot be observed then:**

**BBM2:** A breeding bird survey will be undertaken during the appropriate survey season (between early March and late June) by an ecologist with experience undertaking breeding bird surveys in order to assess whether birds are nesting within the subject lands. Should nesting birds be encountered during surveys, demolition of buildings and/or removal of trees or hedgerows will be delayed until after the nesting season (1<sup>st</sup> March to 31<sup>st</sup> August inclusive).

### 7.8 Residual Impacts of the Proposed Scheme

The proposed development site is predominantly composed of hard standing and artificial surfaces and contains very little vegetation. Based on desktop data and an appraisal of the site, it was considered that the site does not support populations of any species of conservation concern.

Additional indirect impacts on downstream European sites, as a result of surface water run-off during construction as well as surface and foul water run-off during operation have been considered within this report and the separate AA Screening (Scott Cawley, 2018) accompanying this submission. For the reasons set out in these reports, significant effects on European sites arising from the proposed development, whether considered alone or in combination with other plans and projects, can be excluded.

Despite the finding that the proposed development would not have a significant effect on breeding bird populations, Mitigation measures outlined in Section 7.7.1 above will ensure that there is no significant impact on breeding birds that may utilize the site as a result of the proposed development.

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## 7.9 Cumulative Effects

According to the *Dún Laoghaire-Rathdown County Development Plan 2016 – 2022*, the subject lands and surrounding environs are currently zoned as *M2 – City/Town/Village Centre, central area*, with the objective *MIC – to consolidate and complete the development of the mixed use inner core to enhance and reinforce sustainable development*. Given the zoning objective and the location of the proposed development within the greater Dublin area it is considered likely that there will be continued development both locally and within the region in the short to medium term. There is potential for cumulative effects of proposed plans and projects within the *Dún Laoghaire-Rathdown County Development Plan 2016-2022*, *Dublin City Development Plan 2016-2022*, *Fingal Development Plan 2017-2023*, and other county level land use plans which can influence conditions in Dublin Bay via rivers and other surface water features. However, for reasons outlined within this report and the AA Screening report prepared by Scott Cawley, accompanying this application, it has been concluded that that significant effects on European sites arising from the proposed development, whether considered alone or in combination with other plans and projects, can be excluded. Additionally, this development will not result in the loss of semi-natural habitats rather will occur on current hard standing or built areas which have limited suitability to supported protected species. Therefore, cumulative impacts to lower value habitats and protected species are unlikely.

## 7.10 References

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