5.0 ECOLOGY AND BIODIVERSITY

5.1 Introduction

This Chapter of the EIAR has been prepared by Golder Associates Ireland Ltd (Golder) for the Carmanhall Road Strategic Housing Development (the 'Proposed Development').

This assessment presents details of ecology and biodiversity features which are, or have the potential to be, constraints to the Proposed Development. This chapter evaluates the importance of the ecological resources present and defines the degree of significance of potential impacts resulting from the Proposed Development, on lands located at the former Avid Technology International site on Carmanhall Road, Sandyford Industrial Estate, Dublin 18, (the 'Site' / 'Application Site'). The report also identifies appropriate mitigation measures and defines residual impacts. The temporal scope of the assessment covers the construction and after-use project phases. A decommissioning phase for the Proposed Development has not been considered due to the 'permanent' nature of the development. When it is demolished, it is assumed that the legislation, guidance and good practice at that time would be followed and the effects are likely to be similar to the construction effects.

A stage 1 screening for Appropriate Assessment has been produced and is included in the application. This Appropriate Assessment Screening report concludes that no significant impacts would be likely to occur to Natura 2000 sites as a result of the Proposed Development.

The following ecology and biodiversity assessment was prepared by Freddy Brookes (MSc). Freddy is a Member of the Chartered Institute of Ecology and Environmental Management (MCIEEM) and has more than 13 years' experience.

5.2 Legislative and Policy Context

This section addresses the legislation and guidance that has been considered when preparing this chapter, and key policy context relevant to biodiversity. The overarching EIA legislation under which this assessment is required is addressed separately in Chapter 2 (Scope and Methodology).

Legislation

- The Planning & Development Act 2000 as amended;
- The Wildlife Act 1976 as amended by the Wildlife (Amendment) Act, 2000 (as amended) hereafter referred to as the Wildlife Acts;
- The EIA Directive (Directive 2011/92/EU as amended by Directive 2014/52/EU);
- Planning and Development Regulations, 2001-2018;
- European Communities (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018);
- European Commission (EC) Habitats Directive 92/43/EEC (as amended);
- EC Birds Directive 2009/147/EC;
- European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) hereafter referred to as the Birds and Habitats Regulations;
- Flora (Protection) Order, 2015;
- Environment (Miscellaneous Provisions) Act 2011;
- The Fisheries (Consolidation) Act 1959; and
- The Local Government (Water Pollution) Act, 1977 (as amended by Sections 3 and 24 of the 1990 Act.).

Relevant Policies and Plans

- National Biodiversity Plan, 2017-2021;
- Ireland's National Strategy for Plant Conservation; and
- All Ireland Pollinator Plan 2015 – 2020.

Natural heritage policies of the Dún Laoghaire-Rathdown County Development Plan 2016 – 2022:

- LHB19: Protection of Natural Heritage and the Environment;
- LHB20: Habitats Directive;
- LHB22: Designated Sites;
- LHB23: Non-Designated Areas of Biodiversity Importance;
- LHB26: Hedgerows; and
- LHB29: Invasive Species.

Relevant Guidance

- Invasive Species in Ireland (NPWS, 2004);
- Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland: Terrestrial, Freshwater and Coastal Environments (CIEEM, 3rd Edition 2018);
- Circular Letter PL 1/2017 - Implementation of Directive 2014/52/EU on the Effects of Certain Public and Private Projects on the Environment (EIA Directive), 15 May 2017;
- Key Issues Consultation Paper - Transposition of 2014 EIA Directive (2014/52/EU) in the Land Use Planning and EPA Licencing Systems, 2 May 2017;
- Environmental Impact Assessment of Projects - Guidance on the Preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by 2014/52/EU). European Commission of the European Union 2017;
- Guidelines on the information to be contained in Environmental Impact Statements (EPA, 2002);
- Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (Draft, Environmental Protect Agency, 2017);
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Environment, Community and Local Government, 2018);
- Environmental Impact Assessment of National Road Schemes – A Practical Guide (NRA, 2008);
- Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009a);
- NRA Environmental Assessment and Construction Series Guidelines (NRA, 2006- 2009);
- A Guide to Habitats in Ireland (Fossitt, 2000); and
- Bats & Lighting Guidance Notes for Planners, engineers, architects and developers (Bat Conservation Ireland, December 2010).

5.3 Characteristics of the Proposed Development

The Proposed Development will comprise of:

(i) construction of a Build-To-Rent residential development within a new part six, part eight, part nine, part eleven storey rising to a landmark seventeen storey over basement level apartment building (40,814sq.m) comprising 428 no. apartments (41 no. studio, 285 no. one-bedroom, 94 no. two-bedroom & 8 no. three-bedroom units) of which 413 no. apartments have access to private amenity space, in the form of a balcony or lawn/terrace, and 15 no. apartments have access to a shared private roof terrace (142sq.m) at ninth floor level;

(ii) all apartments have access to 2,600sq.m of communal amenity space, spread over a courtyard at first floor level and roof terraces at sixth, eighth and ninth floor levels, a 142sq.m resident's childcare facility at ground floor level, 392sq.m of resident's amenities, including concierge/meeting rooms, office/co-working space at ground floor level and a meeting/games room at first floor level, and 696sq.m of resident's amenities/community infrastructure inclusive of cinema, gym, yoga studio, laundry and café/lounge at ground floor level. The café/lounge will primarily serve the residents of the development and will be open for community use on a weekly/sessional basis;

(iii) provision of 145 no. vehicular parking spaces (including 8 no. mobility parking spaces, 2 no. club-car spaces and 44 no. electric charging spaces), 5 no. motorcycle parking spaces, bin stores, plant rooms, switch room and 2 no. ESB sub-stations all at ground floor level; provision of bicycle parking (752 no. spaces), plant and storage at basement level; permission is also sought for the removal of the existing vehicular entrance and construction of a replacement vehicular entrance in the north-western corner of the site off Carmanhall Road;

(iv) provision of improvements to street frontages to adjoining public realm of Carmanhall Road & Blackthorn Road comprising an upgraded pedestrian footpath, new cycling infrastructure, an increased quantum of landscaping and street-planting, new street furniture inclusive of bins, benches and cycle parking facilities and the upgrading of the existing Carmanhall Road & Blackthorn Road junction through provision of a new uncontrolled pedestrian crossing; and,

(v) All ancillary works including provision of play equipment, boundary treatments, drainage works - including SuDS drainage, landscaping, lighting, rooftop telecommunications structure and all other associated site services, site infrastructure and site development works. The former Avid Technology International buildings were demolished on foot of Reg. Ref. D16A/0158 which also permitted a part-five rising to eight storey apartment building. The development approved under Reg. Ref. D16A/0158, and a subsequent part-seven rising to nine storey student accommodation development permitted under Reg. Ref. PL06D.303467, will be superseded by the Proposed Development.

5.4 Assessment Methodology and Significance Criteria

5.4.1 Desktop Survey

A desktop review was conducted in January 2021 of available published and unpublished information, including a review of neighbouring planning applications, data available from the National Parks and Wildlife Services (NPWS) and National Biodiversity web-based databases in order to identify key habitats and species that may be present, in particular those protected by legislation. To assess the likely current status of species in the vicinity of the Site, the search included 1 km x 1km grid squares that included the Site.

5.4.2 Designated Nature Conservation Site Assessment

Sites of international importance, including Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are collectively known as Natura 2000 sites. These sites contain examples of some of the most

important natural and semi-natural ecosystems in Europe. Designated sites, which also include Natural Heritage Areas (NHAs) and proposed Natural Heritage Areas (pNHAs) were also searched for. The designated search area was 15 km from the Site boundary for Natura 2000 sites and 5 km for pNHA/NHA sites.

In the subsequent analysis of designated sites, particular attention was given to potential for the development to influence a designated site. In other words, potential ecological pathways were identified; these pathways can be hydrological, physically overlapping or exhibiting habitat and species synergies that could result in temporary or residual effects being afforded to a designated site.

5.4.3 Ecological Survey – Habitats

A walkover survey of the area (JNCC Phase I) was conducted by Golder on 18th February 2020 to record the habitats and flora in the area within and adjacent to the development Site, and to detect the presence or likely presence of protected species, and the presence of suitable habitat for those species. The study was also concerned with identifying the need for further, more specialist surveys as applicable.

Ecological Survey methods were in general accordance with those outlined in the following documents:

- Heritage Council (2011). Best Practice Guidance for Habitat Survey and Mapping;
- Phase 1 Habitat Survey methodology (Joint Nature Conservation Committee (JNCC), 1990, revised 2010);
- Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes (NRA, 2009); and
- Aerial photographs and site maps assisted the habitat survey. Habitats have been named and described following Fossitt (2000).

The survey also aimed to identify any invasive species which may occur on the Site. However, this type of survey is not designed to replace specialist knowledge of invasive species recognition or eradication which should be undertaken by specialist contractors.

5.4.4 Ecological Survey - Fauna

The Site footprint is urban and largely devoid of any natural or semi-natural features of ecological interest including buildings that may have supported bat roosts. Indeed, owing to the fact that the Site had evidently recently been cleared (subject of a previous planning application) there was also very little in terms of brownfield regeneration of flora or fauna. In congruence with this fact, the fauna surveys for this chapter rely on secondary (desk based) data rather than primary data gathering. As defined in the EIAR scoping document (Golder, 2020) '*the Site is apparently largely devoid of natural or semi-natural features of ecological interest. However, there is potential for offsite receptors such as aquatic resources to be affected by Site construction and residential occupation. These receptors consist of aquatic flora and fauna plus statutory protected Natura 2000 sites'.*

Figure 5.1: The Site - Expanses of hard standing, demolition waste and a silver birch trees.

5.5 Survey Constraints or Limitations

Habitats

It is acknowledged that due to the seasonality of various floral species, not all species will be apparent at any one time in the year. Whilst the habitat survey was carried out in a sub-optimal season for such work (February) the absence of any vegetation of note on Site indicates that the habitat survey should be considered valid.

Invasive Species

During the survey work the opportunity was taken to record the presence of any invasive non-native species. However, as stated above the detectability of such species can vary throughout the year, and depending on their life stage, recent management or timing of introduction during the Project life-cycle. Accordingly, the absence of an invasive non-native species should not be assumed even if it was not recorded during the survey work. Equally, where the presence of any invasive non-native species has been identified, absence in the remainder of the site should not be assumed.

5.6 Impact Assessment Method

Habitats and species were assessed in accordance with the guidance contained in the document *Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland* (CIEEM, 2018) which recommends that the value of an ecological resource be determined within a defined geographical context (Figure 5.2).

Defining Importance

The relative importance of each ecological feature has been defined on a geographical scale, from international importance, to having relevance only in the context of the site boundary. The definitions employed for the basis of the evaluation are presented in Table 5.1. It should be noted that professional judgement has been employed in the allocation of a level of importance to each feature as it occurs on the site. In other words, the value of the

feature is presented in the context of its actual status within the site. Therefore, a single individual of a species which is protected under the European Union (EU) Habitats Directive would not automatically be considered to be of European (international) Importance, but would be evaluated in the context of its relationship to the overall population and conservation status.

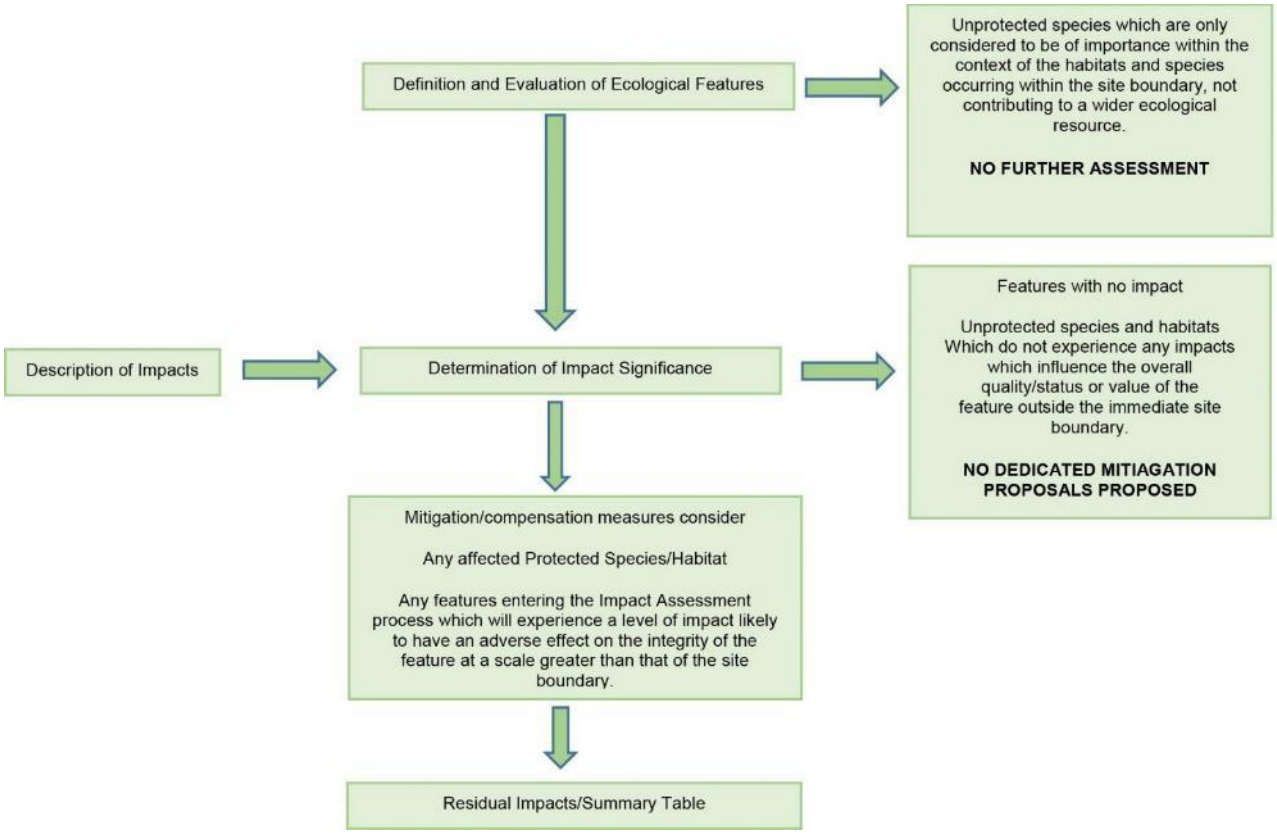

Figure 5.2: Impact Assessment Method

Defining Impact

The impacts to ecological features are defined by their geographical significance in terms of the likely effect and the defined importance of the feature being affected. It is not possible in this system to have an impact greater than the overall geographical importance of the feature (e.g. the maximum possible impact to a feature of a regional importance would be one which is of regional significance). Impacts which do not have significance beyond the immediate area (the Site) will be managed through the implementation of construction and habitat management plans. One exception to this is the case of impacts on Protected Species, where any impact would result in the implementation of mitigation measures.

Defining Magnitude of Change

Considering the potential for impacts as defined above, an assessment of the magnitude of change is arrived at. This is based on Table 5.1 below, and relies on professional subjective judgement in deciding the level of magnitude of change.

Table 5.1: Criteria for Assessing Magnitude of Change

Impact Level	Description
Severe Impact	Ecological effects of a scale or magnitude which would result in permanent, total loss of an irreplaceable species or habitat of international or national importance (occasionally of local importance), or which would result in the

Impact Level	Description
	substantial loss of a protected/rare habitat or a population of a protected/rare species. They represent key factors in the decision-making process. Typically, mitigation measures would be unlikely to remove such effects.
Major Impact	These effects are likely to relate to permanent impacts at a regional or local level, or temporary impacts at an international or national level, and could be potential concerns to the project depending upon the relative importance attached to the issue during the decision making process. The effects are likely to be large in scale or magnitude, and result in substantial medium term loss of protected/rare species or habitats. Mitigation and detailed design work are unlikely to entirely eliminate all ecological effects.
Moderate Impact	These effects are usually only at local or regional level, and may be short or medium term only, or temporary impacts on a small part of an international site. However, the cumulative effects of such issues may lead to an increase in the overall effect on ecological features. They represent issues where effects will be experienced, but mitigation measures and detailed design work may ameliorate/enhance some of the consequences upon affected interests, but some residual effects will still arise.
Minor Impact	These effects are likely to be local issues only; or small magnitude impacts at the regional and national level, they are usually temporary, and are unlikely to be of importance in the decision making process. However, they are of relevance in enhancing the subsequent design of the development and consideration of mitigation measures.
Not Significant / No Impact	No perceivable impacts on ecological features (habitat or species). Impacts may be beneath levels of perception, within normal bounds of variation, within the margin of forecasting error, or impacting on exceptionally poor baseline conditions.
Beneficial / Positive Impact	These effects are those, which through implementation, would be anticipated to benefit the ecology and biodiversity of the site. They may advance the conservation objectives of local, national or international species or habitats.

Outlining mitigation, compensation, and enhancement measures

Receptors subject to significant impacts (those which have the potential to affect the ecological resource outside of the immediate site boundary) are the focus of provision of mitigation measures which have been formulated according to the mitigation hierarchy (avoid, reduce / minimise, compensate). All proposed mitigation measures follow industry best practice. Those for protected species follow the prescribed regulatory protocols.

Defining residual impact

Following the application of mitigation measures, impacts to each ecological feature are reassessed, and any residual impacts are reported.

As stated by the Chartered Institute of Ecology and Environmental Management (CIEEM) guidance (2018), '*The importance of an ecological feature should be considered within a defined geographical context*'. Accordingly, each feature has been assessed based on the scale described in Table 5.2.

Table 5.2: Criteria for Establishing Receptor Sensitivity/Importance

Importance	Ecological Valuation
International	Sites, habitats or species protected under international legislation e.g. Habitats and Species Directive. These include, amongst others: SACs, SPAs, Ramsar sites, Biosphere Reserves, including sites proposed for designation, plus undesignated sites that support populations of internationally important species.
National	Sites, habitats or species protected under national legislation e.g. Wildlife Act 1976 and amendments. Sites include designated and proposed NHAs, Statutory Nature Reserves, National Parks, plus areas supporting resident or regularly occurring populations of species of national importance (e.g. 1% national population) protected under the Wildlife Acts, and rare (Red Data List) species.
Regional	Sites, habitats or species which may have regional importance, but which are not protected under legislation (although Local Plans may specifically identify them) e.g. viable areas or populations of Regional Biodiversity Action Plan habitats or species.
Local/County	Areas supporting resident or regularly occurring populations of protected and red data listed-species of county importance (e.g. 1% of county population), Areas containing Annex I habitats not of international/national importance, County important populations of species or habitats identified in county plans, Areas of special amenity or subject to tree protection constraints.
Local	Areas supporting resident or regularly occurring populations of protected and red data listed-species of local importance (e.g. 1% of local population), Undesignated sites or features which enhance or enrich the local area, sites containing viable area or populations of local Biodiversity Plan habitats or species, local Red Data List species etc.
Site	Very low importance and rarity. Ecological feature of no significant value beyond the site boundary.

5.7 Baseline Conditions

The Site is situated in an urban setting dominated by office buildings, light industrial premises and occasional residential property. Though access was partially restricted due to the presence of barrier hoardings a visual appraisal of the Site was undertaken. The Site appeared to have been cleared of buildings and other than hard standing very few other features of the built or natural form were noted, with the exception of two single silver birch *Betula pendula* tree.

There are no watercourses present on the Site. Desk based assessment reveals that the Carrickmines Stream is located approximately 600 m to the south. This feature flows towards the south-east to become the Carrickmines River; eventually converging with the Loughlinstown River (North) to the east of the Site (near the N11 road and Loughlinstown) and discharging, as the Shanganah River, into the Irish Sea between Loughlinstown and Shankhill.

There are four proposed national designated National Heritage Areas (pNHA) within 5 km of the Site (Figure 5.3). Fitzsimon's Wood pNHA is located approximately 1.6 km to the south west. Fitzsimons Wood pNHA (site code: 1753) is *'an example of a naturalised woodland along a river valley with a range of native species'*[1]. Dingle Glen pNHA is situated approximately 4.5 km from the Site. Dingle Glen (site code 001207): '*This is a dry valley formed as a glacial lake overflow channel'. 'While this Glen was formerly cleared of vegetation, a*

[1] https://www.npws.ie/sites/default/files/publications/pdf/Perrin_et_al_2008_NSNW_V1.pdf

woodland cover is now regenerating[2]. And South Dublin Bay pNHA (site code: 000210[3]) is situated approximately 4 km from the Site. Booterstown Marsh pNHA (001205) is also located approximately 4 km from the Site. It is designated as a pNHA because it is the only saltmarsh in south Dublin and is recognised as a valuable habitat for many birds. It also contains a diverse flora including the protected plant Borrer's Saltmarsh-grass (*Puccinellia fasciculata*).

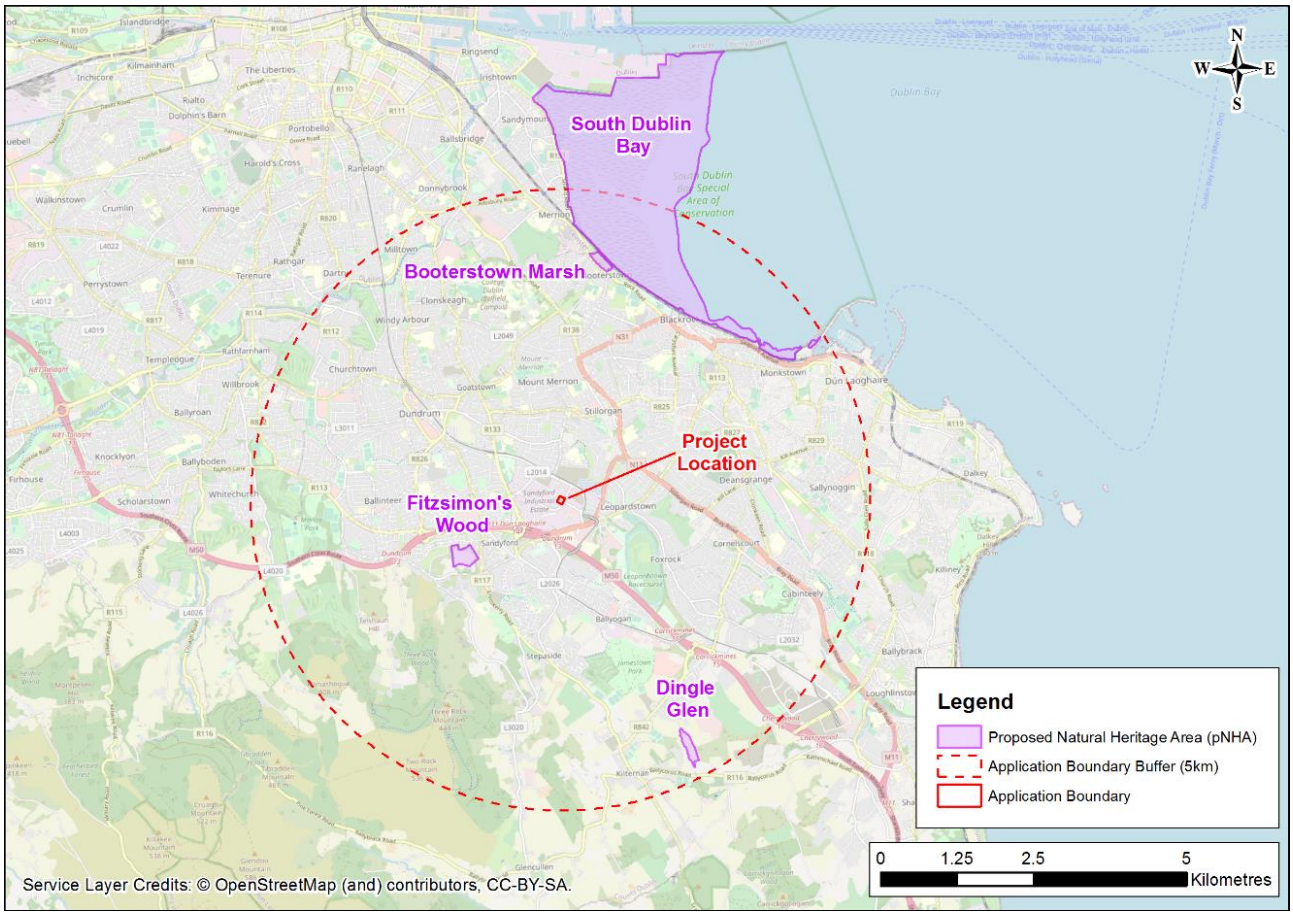

Figure 5.3: PNHA's within 5 km of the Site application boundary

The nearest Natura 2000 receptors are approximately 3.6 km from the Site within Dublin Bay (Figure 5.4). These include the North Dublin Bay SAC and South Dublin Bay SAC, SPAs for various bird species (South Dublin Bay and River Tolka Estuary SPA, and North Bull Island SPA), and a Nature Reserve (North Bull Island Nature Reserve). Part of the near-shore water (about 1.5 km off the coast of where the Shanganah River discharges into the sea, and 8 km east of the Site) is designated as the Rockabill to Dalkey Island SAC. The Wicklow Mountains SAC and SPA are located approximately 6.5 km to the south west. This application is accompanied by a stage 1 Appropriate Assessment screening report and this provides an evaluation of likely significant effects that may, or may not be, afforded to Natura 2000 sites as a consequence of the Project.

The Project is in the Liffey and Dublin Bay Water Framework Directive (WFD) catchment, the Dodder WFD sub-catchment and the Brewery Stream River sub-basin. Carrickmines Stream (ca. 600 m from the Site) is defined as an 'at risk waterbody' under the WFD classification system as applied by the EPA (Environmental Protection Agency).

[2] IBID

[3] IBID (citation not available).

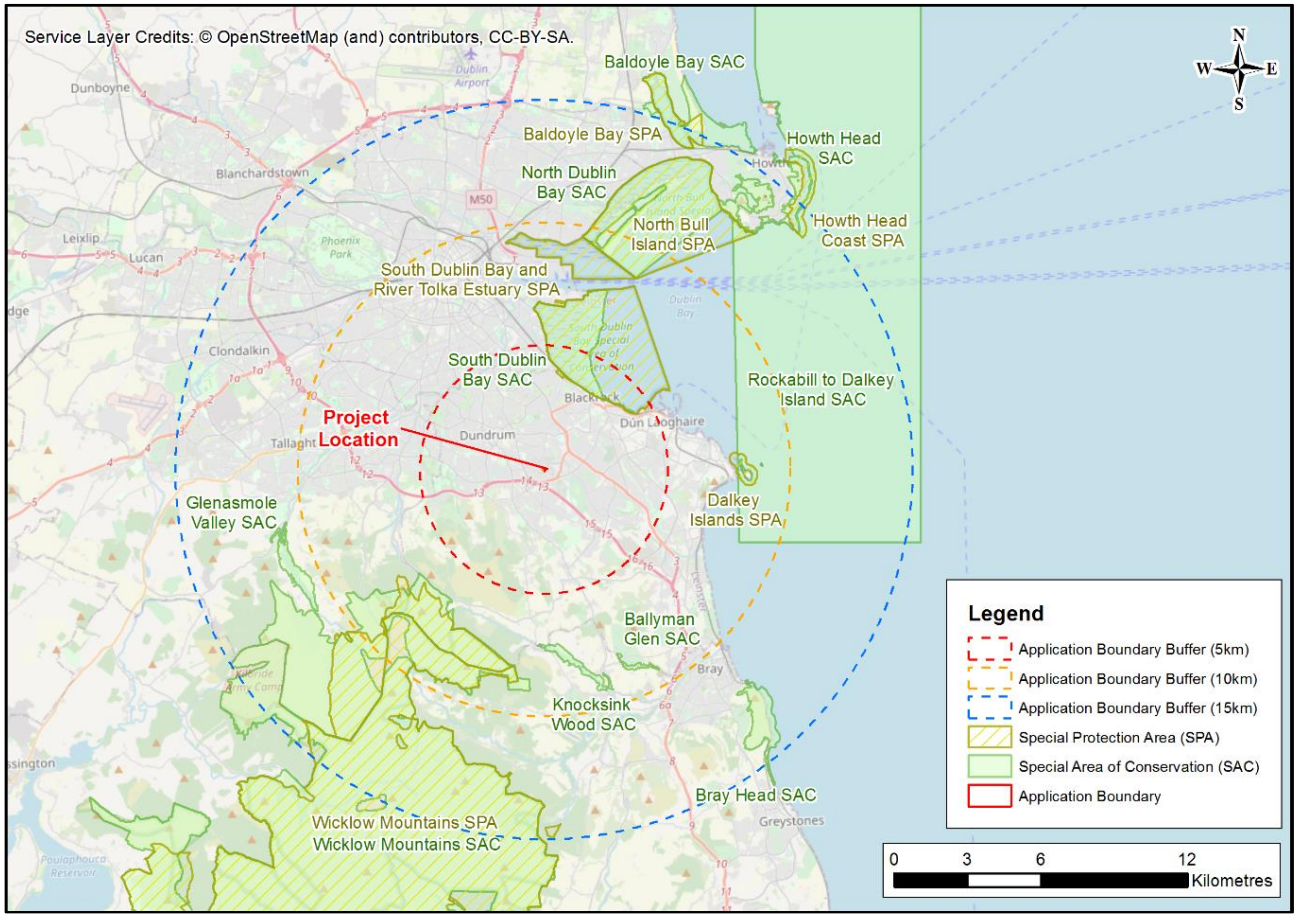

Figure 5.4: Natura 2000 sites within 15 km of the Site Application Boundary

5.8 Baseline Results: Desk Study

Desk study assessment was based upon searches of relevant web-based resources such as the National Biodiversity Data Centre (NBDC) and also a review of other ecological assessments undertaken within close proximity of the Site, namely Openfield (2019) and Scott Cawley (2019). No species protected by Section 21 of the Wildlife Act, 1976 as set out in the Flora (Protection) Order, 2015 were noted. However, records of the following nine invasive species were noted within the O12Y 1km grid square[4]:

- Sycamore *Acer psuedoplatanus*: The NBDC lists this species as a medium impact invasive species;
- 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;
- 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;
- 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;

[4] https://maps.biodiversityireland.ie/Map accessed 11th January 2021.

- 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;
- 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;
- 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;
- 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 dispersal, and the dealing and keeping of listed species; and
- 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.

Other species relevant to the Site revealed in the desk study included 26 species of bird including common and widespread species and more notable records such as Common Snipe *Gallinago gallinago* and Common gull *Larus canus* which are both amber listed Irish Birds of Conservation Concern (BoCC). Invertebrate records were also well represented with 69 species noted, including the endangered Gooden's Nomad Bee *Nomada goodeniana*.

Mammals were represented by five species including the notable Red Squirrel *Sciurus vulgaris* which is protected under the Wildlife Act. The freely available desk study results should not be considered definitive data sets for the desk study area. An absence of desk study data does not necessarily correspond that a site is absent of notable flora or fauna.

5.9 Baseline Results: Habitat Assessment

The Site footprint is almost entirely comprised of hardstanding. The habitats recorded are listed in Table 5.3 and the habitat map of the Site is presented as Figure 5.5 below.

Table 5.3: Habitats Recorded On Site (Fossitt, 2000)

Habitat	Habitat code
Hardstanding	BL3
Scattered trees	WD5

Figure 5.5: Fossitt Habitat Map of the Site Application Boundary

Figure 5.6: The Site which is dominated by hard standing (asphalt) with no vegetative establishment

Hardstanding

The Site footprint consists of hardstanding with just two relatively young silver birch (*Betula pendula*) trees remaining that are possibly testament to the previous Site use landscaping scheme. The Site footprint clearly hosted buildings that have been demolished in the recent past as no brownfield vegetative succession had occurred in the intervening time.

Scattered trees

The presence of two immature silver birch trees within the Site footprint can most closely be classified as scattered trees in accordance with Fossitt nomenclature. These trees are relatively young and lack any significant structure such that may offer roosting or nesting potential to bats or birds respectively. Outside of the Site footprint a number of scattered trees were noted that were likely planted as part of streetscene landscaping plans.

Aquatic Habitat – Offsite Receptors

As previously described, there are no watercourses present on the Site. Desk based assessment reveals that the Carrickmines Stream is located approximately 600 m to the south. This feature flows towards the south-east to become the Carrickmines River; eventually converging with the Loughlinstown River (North) to the east of the Site (near the N11 road and Loughlinstown) and discharging, as the Shanganah River, into the Irish Sea between Loughlinstown and Shankhill. The stage 1 appropriate assessment for the Site includes an assessment of the Site's hydrological setting and connectivity to potential offsite receptors.

5.10 Baseline Results: Fauna Assessment

The presence, or potential presence, of species on the Site was identified from the desk study and Phase 1 Habitat survey. The following list provides a rationale for the likely presence or indeed absence of fauna associated with the Site or its immediate surrounds.

Bats

There are no buildings or trees within the Site that could afford bat roosting potential as defined by Collins (2016). Furthermore, the Site does not provide optimal or even sub-optimal bat foraging habitat.

Small and medium Mammals such as Pygmy Shrew, Hedgehog, Badger and Pine Marten

There is a distinct lack of available resource for the small and medium mammal group. These species require mosaic habitats of woodland, scrub and connecting linear features such as hedgerows to fulfil their ecological life cycles. The urban setting, high density of people and traffic plus lack of ecological connectivity with natural or semi-natural features all detract from the suitability of the Site for these species.

Birds

The Site does not support suitable nesting, foraging and shelter habitat for birds. An absence of woodland, hedgerows, trees or even unmanaged grasslands dictates that the Site is relatively sterile for bird species. It is possible that some common and widespread species such as blackbird (*Turdus merula*), blue tit (*Cyanistes caeruleus*) and woodpigeon (*Columba palumbus*) could move through the Site sporadically but in general the Site could not support even common and widespread species for more than infrequent limited occupation.

Summary

Summary Table 5.4 lists the species which were considered within the impact assessment process then scoped out as a lack of available habitat for these species was realised.

Table 5.4: Assessment of the potential for faunal species to occur within the Site.

Species/Group	Status	Summary of status on site
Bats	Wildlife Acts (1976 – 2010) – EU Habitat Directive.	No available resource, no potential[5] roosting habitat available from mature trees or buildings. Not considered further in this assessment with the exception of general biodiversity safeguards (lighting mitigation) in Section 5.15.
Small and medium Mammals such as Pygmy Shrew, Hedgehog, Badger and Pine Marten	Wildlife Acts (1976 – 2010) EU Habitat Directive (Pine Marten)	No available resource, no habitat available for commuting, foraging or breeding. Not considered further in this assessment
Birds	Wildlife Acts (1976 – 2010), EU Birds Directive, Birds of Conservation Concern (BoCC[6], Ireland).	Common and widespread species may infrequently pass through the Site. Not considered further in this assessment with the exception of general biodiversity safeguards in section 5.15.
Aquatic Fauna	Salmonids, Wildlife Acts (1976 – 2010) – EU Habitat Directive.	No available resource on Site. Considered further within this assessment owing to potential for aquatic ecological connectivity.

5.11 Baseline Results: Invasive Species

No non-native or invasive species were recorded during the Site survey noting seasonal limitations. Considering the plethora of invasive species records revealed in the desk study, the presence, including the potential introduction of non-native or invasive species, is discussed further in the mitigation section (Section 5.15) below.

5.12 Evaluation

The evaluation of ecological features (sites, habitats and species) which could be affected by the project proposals is presented in Table 5.5. The table includes:

- Any statutory designated areas, with the exception of Natura 2000 sites (dealt with in accompanying Stage 1screening report), which are situated within 5 km of the project site that have potential ecological connection(s) with the site;
- Any surface or groundwater bodies that have hydrological connectivity with the site;
- Any habitat type recorded within the site; and
- Any species of conservation importance which has been confirmed as occurring within the site.

The value of the feature is based upon how important the feature is in relation to its geographical context. In other words, at what level of geographical resolution would the feature contained within the site (habitat or species) be recognised as contributing to biodiversity to a significant degree. The evaluation takes into account extent (or population size) within the site compared to the resource elsewhere and whether it has characteristics which either elevate or depress its importance in comparison with a 'typical' example (for example, whether a habitat is particularly species rich, or depleted in species).

[5] A tree or trees of sufficient size to exhibit potential roosting features but none seen from the ground or with limited roosting potential, Collins 2016.
[6] Colhoun, K. & Cummins, S. (2013) Birds of Conservation Concern in Ireland 2014–2019. Irish Birds 9: 523–544.

Common and widespread species or habitat, therefore, only have a level of importance in respect of the biodiversity of their immediate area (taken in this case to be represented by the boundary of the site). Such features are not considered further within the Impact Assessment. Some protected species may, under certain circumstances (such as a single example occurring within the site, as part of a much larger local population) be considered to only be of importance within the site itself. Such species, on the basis of legal and planning regulation compliance, are included within the Impact Assessment and, (if necessary) dedicated impact mitigation measures are provided. Table 5.5 presents each feature occurring, together with the rationale for its evaluation.

Table 5.5: Classifying the Geographical Importance of Key Ecological Features

Key Ecological Features	Importance	Rationale
Designated Sites		
Fitzsimon's Wood pNHA	Regional	This feature is situated approximately 1.6 km from the Site. There are no ecological pathways, habitat or species synergies between this pNHA and the Site. As such, this pNHA is scoped out of the ecological impact assessment.
Dingle Glen pNHA	Regional	This feature is situated approximately 4 km from the Site. There are no ecological pathways, habitat or species synergies between this pNHA and the Site. As such, this pNHA is scoped out of the ecological impact assessment.
South Dublin Bay pNHA	Regional	This feature is situated approximately 4 km from the Site. There are no ecological pathways, habitat or species synergies between this pNHA and the Site. As such, this pNHA is scoped out of the ecological impact assessment.
Booterstown Marsh pNHA	Regional	This feature is situated approximately 4 km from the Site. There are no ecological pathways, habitat or species synergies between this pNHA and the Site. As such, this pNHA is scoped out of the ecological impact assessment.
Habitats		
Trees	Site	The trees on Site do not represent a valuable resource for fauna such as roosting and nesting bats and birds. However, this feature is included within the general biodiversity safeguard mitigations and ecological impact assessment on a precautionary basis.
Aquatic receptors (off Site)	Regional (potential international important receptors are dealt with in the stage 1 appropriate assessment).	There is potential for a measurable increase in nutrient loading (aquatic eutrophication) during construction and residential occupation as a consequence of the Project.

5.13 Embedded Design Mitigation

Surface and Wastewater

This section describes the mitigation measures that are incorporated at the design stage. Additional mitigation measures not incorporated at the design stage are considered at Section 5.15. Design mitigation that is especially pertinent to ecology and biodiversity is focussed on surface and wastewater management as any impact pathway in a terrestrial context is negligible. According to AECOM (2021) within their infrastructure design report the Project will address surface water management by *'discharging surface water from the development to the existing 450mm diameter concrete surface water sewer in Carmanhall Road, via a new connection. It is proposed to decommission the existing connection. The proposed storage network to serve the proposed development has been designed and modelled, using Innovyze Microdrainage, for the 1 in 100-year storm event, with an allowance of 10% for climate change'.* Furthermore, '*the implementation of the proposed Green Roof system provides additional storage volume throughout the Site'.*

Further review of the AECOM (2021) report indicates that *'in accordance with DLRCC* (Dún Laoghaire Rathdown County Council)*, runoff from the Site will be restricted to 2 l/s. This is approximately equal to the Site's greenfield Qbar rate, which is calculated as 1.98 l/s, for a Site area of 0.73 ha and an assumed soil class of 2 (which corresponds to a soil index of 0.3). The proposed maximum discharge rate is 2 l/s, which is significantly lower than the current maximum discharge rate of runoff leaving the Site'.* Embedded design parameters include the design brief being undertaken in accordance with Irish Water's Code of Practice for Wastewater Infrastructure. In accordance with the Greater Dublin Strategic Drainage Study the Project will incorporate sustainable drainage systems (SUDS) that will reduce the current run-off rate. This will ensure that the flow leaving the Site will be reduced to a 'greenfield rate'. The drainage system for this Project will contain a range of SUDs treatment methods for surface water including green roofs, permeable paving, bioretention, swales, filter drains and treatment via open graded crush rock below all SUDs measures preventing materials and contaminants discharging from the Site. Discharge to the public surface water sewer will be via an oil and grit interceptor.

Again, according to AECOM (2021) wastewater from the Site will connect to the existing 225 mm diameter clay wastewater sewer in Carmanhall Road. A connection from the Site to this sewer exists but it is proposed to connect to the sewer further upstream of this connection. It is understood that foul wastewater will be processed at the wastewater treatment plant at Ringsend in Dublin. In April 2019 Irish Water was granted planning permission for an upgrade to the Ringsend facility[7]. This will see improved treatment standards and will increase network capacity by 50%, with a target completion date of 2023, which will be in time to address additional loading from new residential units as consented by this Project.

Embedded General Design Mitigation

A number of measures which follow generic best practice are proposed to mitigate the impacts of the Project on the ecological environment at the Site and beyond which will include:

- All Site construction will be undertaken in accordance with the Construction Industry Research and Information Association's (CIRIA) (2015) C741 Environmental Good Practice on Site Guide (fourth edition);
- The proposed site lighting scheme described by IN2 (2021) in the Lighting report is described as '*maintaining safe levels of illumination to circulation areas while minimising light overspill on the neighbouring properties and mitigating the residual impacts that the proposed lighting scheme may have on existing habitats within the Site*; and
- New landscape planting will be provided as described in the accompanying Landscape Design Statement (NLP, 2020). This will promote net gain for biodiversity by undertaking additional tree planting to promote

[7] https://www.water-technology.net/projects/ringsend-wastewater-treatment-plant-upgrade-project/

Carbon Sequestration, use of native tree and shrub planting and wildflower meadow grass areas to promote the pollination plan in addition to the provision of SUDs systems such as green roofs and rain gardens.

5.14 Potential Effects

The following potential effects may be associated with the Project:

- Permanent loss or damage to on Site trees; and
- Measurable increase in nutrient loading to offsite aquatic habitat during construction and residential occupation in perpetuity.

5.15 Impact Assessment

Impacts associated with the proposed Project have been defined and their significance assessed in relation to their implications on ecological features, defined in terms of their geographical extent (Table 5.5). Impacts are described during the construction and residential occupation phases. Assessments are made in accordance with the guidance contained in the document *Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland* (CIEEM, 2018).

The key construction and residential impacts assessed are:

- Loss or damage to on Site trees; and
- Aquatic eutrophication as a consequence of increased nutrient loading due to increases in population density and pressure on existing foul drainage processing.

Site Trees – Construction Impacts

The Project will cause the permanent loss of two Site trees.

Characterisation of Unmitigated Impact on the Feature

In the absence of mitigation, trees on the Site periphery due to be retained could be damaged. Trees that are due to be felled and removed (likely two No. immature silver birch) will be permanently lost, though it is worth reiterating that these trees do not represent a valuable biodiversity resource.

Rationale for Prediction of Effect

Tree habitat is relatively scarce in the wider context of the Project location. The removal or damage of trees is more likely to have an aesthetic impact in contrast to a measurable impact on biodiversity e.g. nesting birds or the tree itself. Nonetheless, it is considered that the loss or damage of these trees would negatively impact the Site landscape.

Effect without Mitigation

The unmitigated effect of this habitat loss would result in a **minor** permanent impact to habitat of **Site** sensitivity and importance.

Aquatic Receptors – Construction and Operation Impacts

The Project will lead to an increase in nutrient loading due to be managed by the Ringsend facility. In addition, sediment loading from Site run off during construction may occur though there are no surface water receptors that would receive turbid water containing elevated suspended sediments. As a consequence of the increase in trophic status in the absence of mitigation, aquatic receptors such as fish and also habitats could be adversely impacted by eutrophication.

Characterisation of Unmitigated Impact on the Feature

The Project has potential to cause measurable increases in nutrient loading which could degrade the quality of aquatic habitats in the absence of mitigation.

Rationale for Prediction of Effect

Alterations to water quality have potential to adversely affect aquatic downstream receptors, impacting on the balance of the current aquatic ecosystem, potentially leading to a loss in biodiversity. Increases in total suspended sediments (TSS) may also factor in the absence of mitigation.

Effect without Mitigation

The unmitigated effect of this Project could result in a **minor** impact to habitat of **regional** sensitivity and importance.

5.15.1 'Do-Nothing' Scenario

The Site is currently dominated by hardstanding. In the absence of the proposed Project, it is assumed that the current management regime within the Site would be continued. In essence, the Site would remain undeveloped and areas of hardstand may degrade over the long term with potential for some vegetative colonisation, potentially invasive in nature. Therefore, there may be potential for a limited increase in biodiversity value of the Site in the absence of the Project, assuming that ongoing management activity removes any invasive species that may colonise it.

5.16 Mitigation and Management

Detailed landscape enhancement proposals have been prepared for the Site and are included within the Landscape Design Statement (LMP, 2020). These proposals include the provision of native shrubs, hedges, grassland and trees to provide biodiversity net gain in benefitting pollinating insects and bird species.

Aquatic Receptors

To prevent any pollution incidents that might potentially cause deterioration of the aquatic environment it is proposed that a series of best practice measures are introduced throughout works, in accordance with CIRIA's guideline documents C532 (CIRIA, 2001) and C741 (CIRIA, 2015), and Enterprise Ireland's best practice guidance for oil and hydrocarbon storage (BPGCS005). Dangerous substances such as oils and fuels will be stored at all times in a bunded area. Only clean water would be allowed to enter public surface water sewers. Where necessary, silt traps will be used to remove sediment and solid matter prior to discharge to surface water sewers. The Site manager will be responsible for ensuring that pollution does not occur and Site personnel will be trained in the importance of pollution prevention.

The increase in nutrient contribution from increases in Site residential usage will effectively be addressed by upgrades at the Ringsend wastewater treatment plant (WTP). The Ringsend WTP discharges into Dublin Bay which is currently classified as being unpolluted by the EPA and attaining 'good' ecological status as defined by the WFD.

Retention or removal of on-Site habitats (individual trees)

Trees on the Site periphery that are to be retained will be protected in accordance with best practice guidance (BS5837, trees in relation to construction) as detailed in the accompanying arboriculture report. Any trees to be removed (likely two immature silver birch) will be done so outside of the bird nesting season on a precautionary basis. The nesting season is considered to be between March and August inclusive. If trees are required to be felled within the nesting season a suitably qualified ecologist will first check to ensure that the trees do not support nests. In the unlikely event that nests are discovered and in use the trees will not be able to be felled until the young have fledged.

Sensitive Lighting

The lighting strategy will aim to maintain any opportunities within the Site for nocturnal and crepuscular species by using timers, cowls and hoods to maintain dark skies and avoid illuminating landscaping features such as new native planting. The proposed Site lighting scheme described by IN2 (2021) will '*maintain safe levels of illumination to circulation areas while minimising light overspill on the neighbouring properties and mitigating the residual impacts that the proposed lighting scheme may have on existing habitats within the Site.*

Landscaping

Full landscaping proposals are presented within the accompanying Landscaping Design specification. The landscaping plans describe the creation and management of on-Site habitats which includes the planting of replacement native trees of local provenance, provision of green roofs, native hedge and grassland planting. All plants have been selected for their fruit, berry, or nectar bearing qualities. Where possible, all landscape planting within the Site will be managed for the benefit of wildlife.

Invasive Species

Given the extent of invasive species records present within the desk study area, in advance of Site works invasive plant species surveys will be undertaken at the Site to adopt a precautionary approach. Measures will be implemented throughout Site works to safeguard against the spread of any invasive non-native species (such as Japanese knotweed or cotoneaster). The Principal contractor for the construction of the Project will ensure that all materials imported or exported from the Site are not contaminated and monitoring (refer section below) will take place post-construction to ensure that invasive species do not colonise the Site.

5.16.1 Monitoring

Monitoring pertaining to the ecology and biodiversity chapter focuses on the landscaping proposals for the Site. The proposals include management tasks that will be monitored to ensure successful establishment. In addition, the requirement to monitor for the potential introduction of invasive species will also be a requirement of this process.

5.17 Cumulative Effects

Cumulative impacts focus on the likely expansion of residential development as defined by 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, South Dublin County Development Plan 2016-2022, and other planning applications. Cumulative impact assessment is based upon a realisation of additional nutrient loading and pressure on the Ringsend WTP. However, cumulative impacts regarding nutrient loading and potential for eutrophication of freshwater and marine habitat are considered to be not-significant. That is due to the commitment by Irish Water to upgrade the Ringsend WTP which will occur in advance of the operational phase of the Development.

Cumulative impacts concerning other local committed developments in the vicinity of the Site are assessed in Chapter 15 (Interactions, Cumulative and Combined Effects) of the EIAR which accompanies this SHD Application. This includes two developments ca. 300 m to the north-west, (by Sandyford GP Ltd, ABP 305940-19; and by IRES Residential Properties Ltd, ABP 304405-19); and also two developments ca. 750 m to the south-east, (by Castdale Ltd, ABP 302580-18; and by Murphystown Land Developments DAC, ABP 308227-20).

5.18 Residual Effects

In the absence of mitigation, it is considered that the Project would result in minor effects to features of Site and Regional value. However, with the implementation of appropriate mitigation it is considered any residual effects

on the Site will be Not Significant i.e. no perceivable impacts on ecological features (habitat or species). Impacts may be beneath levels of perception, within normal bounds of variation, within the margin of forecasting error, or impacting on exceptionally poor baseline conditions.

5.19 Summary and Conclusions

This chapter has evaluated the importance of the ecological resources present and defined the degree of significance of potential impacts resulting from the proposed Project. The assessment approach has followed CIEEM (2018) and taken account of national planning policy, Structure and Local Plan policies in respect of nature conservation and protected species legislation in identifying appropriate avoidance, mitigation (including design mitigation) and compensation measures to take.

The assessment has concluded that no nature conservation sites will be directly affected by the proposed Project. The Site is essentially impoverished when considering habitats or species per se regardless of conservation status. Risks to off-Site aquatic receptors are minimised through the adherence to construction best practice policy and also the adoption of the upgraded Ringsend wastewater treatment plant.

The opportunity has been taken to incorporate a number of enhancement measures within the proposed Project, to improve habitat quality over and above the current situation, together with creating new opportunities for fauna within the Site. When cumulatively considering the mitigation and enhancement measures outlined within this chapter, it is considered that a net gain for biodiversity will be afforded over the medium to long term.

5.20 References

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