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ECOLOGICAL IMPACT ASSESSMENT

TAYLOR'S LANE, BALLYBODEN, DUBLIN 16

2021

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1.0 INTRODUCTION

This report has been prepared by Panther Environmental Solutions Ltd. to accompany an application for planning permission to South Dublin County Council by the applicant, Luxcare Ltd for the proposed construction of a 111-bedroom nursing home over 3 floors with all associated site and landscaping works. In addition, there will be five new townhouses and Newbrook House located within the site is a Protected Structure (Ref No 300) will be incorporated into the nursing home. The proposed site is located at Taylor's Lane, Ballyboden, Dublin 16.

The scope of this study is to assess whether significant impacts on protected flora and fauna with a particular emphasises on protected species found within the proposed development and with cognizance for National Heritage Areas (NHAs) and to identify and/or mitigate any potential significant effects on protected species. This report has been prepared with regards to the European Communities (Natural Habitats) Regulations 1997 (S.I. No. 94 of 1997), and the later amendment regulations (S.I. No. 233 of 1998; S.I. No. 237 of 2005).

A study was undertaken by Dr Ross Donnelly-Swift (BSc (Hons) Biology, MSc Environmental Science, PhD Biosystems Engineering) of Panther Environmental Solutions Limited. This comprised a review of the proposed development, a site assessment on the 24th June 2021 to examine the ecological context of the proposed development, a desk study of the information on protected species, habitats and sites within the vicinity of the development for the potential impacts.

2. LEGISLATIVE CONTEXT

The following legislation is relevant to the proposed development and biodiversity:

- The Wildlife Act is the primary piece of Irish legislation providing for the protection and conservation of wildlife and provides for the control of specific activities which could adversely affect wildlife, for example the regulation of hunting and wildlife trading. Under the Wildlife Act, all bird species, 22 other fauna species and 86 flora species in Ireland are afforded protected status. The Wildlife Act, 1976 allows for the designation of specific areas of ecological value such as Statutory Nature Reserves and Refuges for Fauna. The Wildlife (Amendment) Act, 2000 provides for greater protection and conservation of wildlife and also provides for the designation and statutory protection of Natural Heritage Areas (NHA).European Communities (Birds and Natural Habitats) Regulations, 2011 (S.I. No. 477 of 2011) and (Amendment) Regulations, 2015 (S.I. No. 355 of 2015), transposing the Habitats Directive 92/43/EEC (as amended) and Birds Directive 2009/147/EC.
- The Flora (Protection) Order, 2015 (S.I. No. 356 of 2015). This order provides statutory protection to flora listed in Section 21 of the Wildlife Act, 1976 and Wildlife (Amendment) Act, 2000. Under the Order, it is illegal to wilfully cut, uproot or damage the listed species or interfere in any way with their habitats.
- National Biodiversity Plan 2017-2021. Ireland's third National Biodiversity Plan 2017–2021, identifies actions towards understanding and protecting biodiversity with a vision that, "*biodiversity and ecosystems in Ireland are conserved and restored, delivering*

benefits essential for all sectors of society and that Ireland contributes to efforts to halt the loss of biodiversity and the degradation of ecosystems in the EU and globally". A number of Local Biodiversity Action Plans have been prepared, and it is noted that the South Dublin County Development Plan (CDP) includes a policy to carry out a Biodiversity Plan during the lifetime of the CDP.

- National Biodiversity Data Centre All-Ireland Pollinator Plan 2021-2025. This plan has six objectives (i) Making farmland pollinator friendly, (ii) Making public land pollinator friendly, (iii) Making private land pollinator friendly, (iv) All-Ireland Honeybee Strategy, (v) Conserving rare pollinators (vi) Strategic coordination of the Plan.
- Water Framework Directive (2000/60/EC). The Water Framework Directive (WFD) aims to improve the water environment (including groundwater, rivers, lakes, estuaries and coastal waters) of E.U. Member States. The aim of the WFD is for Member States to achieve and maintain "good status" in all water bodies.
- South Dublin County Development Plan 2016-2022. Under these regulations, development plans must include mandatory objectives for the conservation of natural heritage and for the conservation of European sites.

3. METHODOLOGY

This EcIA has been carried with reference to the following guidelines:

- *Appropriate Assessment of Plans and Projects in Ireland. Guidelines for Planning Authorities*. DoEHLG, 2009.
- Ecological Guidance for Local Authorities and Developers (Scott Cawley, 2013)
- *Managing Natura 2000 sites – The Provisions of Article 6 of The Habitats Directive 92/43/EEC.* European Commission, 2000.
- NRA (2009) *Guidelines for Assessment of Ecological Impacts of National Road Schemes* (National Roads Authority)
- *Assessment of Plans and Projects Significantly Affecting Natura 2000 sites. Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.* European Commission, 2002.
- Commission Notice "Managing Natura 200 sites The provisions of Article 6 of the Habitats Directive 92/43/EEC. European Commission, 21.11.2018
- CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal*, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- *The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads* (National Roads Authority (NRA), 2010);
- *Guidelines for the Treatment of Badgers prior to the Construction of National Road Schemes* (NRA, 2006a);
- *Guidelines for the Treatment of Otters prior to the Construction of National Road Schemes* (NRA, 2006b);

- *Guidelines for the Treatment of Bats during the Construction of National Road Schemes* (NRA, 2006c);
- *Bat Mitigation Guidelines for Ireland* (Kelleher and Marnell, 2006);

3.1 DESKTOP RESEARCH

Every effort has been made to provide an accurate assessment of the situation pertaining to the site. However, an ecological survey can only assess a site at a particular time and is limited by various factors such as the season, timing of the survey, climatic conditions and species behaviour. Ecological surveys are therefore snapshots in time and should not be regarded as a complete study. Direct observations or evidence of protected species is not always recorded during ecological surveys. However, this does not indicate that the species is absent from the site. To ensure any limitations encountered did not significantly impact upon the findings of the ecological assessments, the ecological surveys undertaken also assessed the potential of the habitats to support protected species, and cognisance has been taken of available online baseline data (e.g. flora and fauna records from the NBDC, previous surveys undertaken by Wildlife Surveys) and a precautionary approach taken.

Desktop research was carried out to gather information on the ecology of the site and surrounding areas. The locations of the Natura 2000 sites, National Heritage Areas (NHAs), Nature Reserves, National Parks and protected flora and fauna records for the proposed development at Taylor's Lane, Ballyboden, Dublin 16.

Water quality data from the EPA was reviewed for the assessment of biological and environmental data collected on waterbodies in Ireland (Water Quality in Ireland 2013-2018 (2020)).

Biological records from the National Biodiversity Data Centre (NBDC) for the site and surrounding area (10km grid square/tetrad) were reviewed and account taken of notable species including any rare, protected, threatened and invasive species.

Information on the characteristics of the Natura 2000 sites within the potential zone of influence was reviewed from the conservation objectives documents, site synopses and Standard Natura 2000 data forms available on the NPWS website.

In addition, a stage 1 appropriate assessment screening has been undertaken for the proposed development (Document Ref: PES_ AA_21174). This AA Screening took into consideration the locations of the Natura 2000 sites within 15km of the proposed development. An assessment of the potential impacts on the habitats and species of the South Dublin Bay SAC (Site Code 000210) and South Dublin Bay and River Tolka Estuary SPA (Site Code 004024).

3.2 SITE SURVEY

A site characterisation assessment was undertaken on the 24th June 2021 to examine the ecological context of the development site, by systematically walking the site, adjacent land and boundaries and determining the habitats present. The habitat survey was undertaken in accordance with the standard methodology outlined in Fossitt's "*A Guide to Habitats in Ireland*", a hierarchical classification scheme based upon the characteristics of vegetation

present. The Fossitt system also indicates when there are potential links with Annex I habitats of the E.U. Habitats Directive (92/43/EEC). Cognisance was also taken of the Heritage Council guidelines, "*Best Practice Guidance for Habitat Survey and Mapping*". (Smith *et al.,* 2011). Bird species and signs of fauna activity and dwellings were also noted. Particular attention was given to the possible presence of habitats and/or species, which are legally protected under Irish and European legislation and to assessing any potential ecological connectivity with Natura 2000 sites or supplementary or steppingstone habitats of relevance to Natura 200 sites. General bird usage of the development site was assessed on the 24th June 2021. While walking the development site, stops were undertaken on a regular basis during which time the area was scanned as far as the terrain or weather conditions allowed. Birds were identified by visual sightings and auditory identification of songs and calls. Birds flying overhead were also included as part of the survey.

3.3 BAT SURVEY

Bat Survey

Areas within the proposed development site at the Taylor's Lane with the potential to support bat roosts and / or foraging / commuting routes, and which have the potential to be impacted upon by the proposed development were the main focus of this survey.

A daytime assessment of individual trees, treelines and hedgerows within the proposed development site potentially affected by the proposed development was undertaken on the 24th June 2021.

The assessment comprised of an external inspection of trees to identify potential roost features (PRFs) and evidence of bat activity. The criteria used to categorise the PRFs or suitability of trees as a potential roost are summarised in the table below, based upon the guidelines by Collins (2016) and Hundt (2012).

See additional bat surveys in the accompanying report by Meehan Ecology (Bat survey of Newbrook House and grounds, Ballyboden, Co. Dublin, July 2021)

Table 3.1: Bat Roost Potential Categories

CATEGORY	DESCRIPTION
High Trees that are suitable for use by large numbers of bats on a regular basis	Features include holes, cracks or crevices that extend or appear to extend back to cavities suitable for bats. In trees, examples include hollows and cavities, rot holes, cracks/splits and flaking or raised bark which could provide roosting opportunities. Any ivy cover is sufficiently well-established and matted so as to create potential crevices beneath. **Further survey work would be required to determine whether or not bats are present, and if so, the species present. Appropriate mitigation and potential licensing requirements may then be determined.**
Moderate	From the ground, tree appears to have features (e.g. holes, cavities, cracks or dense ivy cover) that may extend back into a

CATEGORY	DESCRIPTION
Moderate potential is assigned to trees with potential to support bat roosts but supports fewer features than a high potential tree and is unlikely to support a roost of high conservation value.	cavity. However, owing to the characteristics of the feature, they are deemed to be sub-optimal for roosting bats. **Further survey work would be required to determine whether or not bats are present, and if so, the species present. Appropriate mitigation and potential licensing requirements may then be determined.**
Low Low potential is assigned to trees with features that could support individual bats opportunistically.	If no features are visible, but owing to the size, age and/or structure, hidden features, sub-optimal for roosting bats, may occur that only an elevated inspection may reveal. In respect of ivy cover, this is not dense (i.e. providing PRF in itself) but may mask presence of PRF features. **Works may proceed using reasonable precautions (e.g. controlled working methods, under license or supervision of a bat worker).**

4.0 DESCRIPTION OF PROPOSED DEVELOPMENT AND EXISTING SITE

4.1 PROPOSED DEVELOPMENT

The proposed development of the site will be the construction of 111-bedroom nursing home over 3 floors. This will include dayrooms, offices, reception, meeting rooms, cinema, laundry, kitchen, dining rooms, staff rooms, various bathrooms, hair salon, and ancillary accommodation. All floors will contain bedrooms, staff facilities, service rooms and recreational rooms measuring a total of 5133m^2. In addition, Newbrook House will be refurbished and there will be 5 separate townhouses located in the south east corner of the site. There will be 18 car parking spaces and a landscaped garden along the south boundary with boardwalks and outdoor seating. The heating system of the residential development will be natural gas. Vehicular access will be from the Taylor's Lane (R113). The site was previously in use as residential (Newbrook House) with the majority of the site previously in use as a builders merchants. Vegetation cover of the overall site is shown in imagery captured in 2009 and 2020, see Figure 4.2 below.

Waste water from the proposed site will connect with the municipal sewer line along Taylor's Lane. Storm water, comprised of rainwater run-off from roofs and paved areas, will be collected onsite and will pass through a controlled outflow designed in compliance with requirements and regulations. Prior to leaving the proposed site, storm water will be attenuated in a suitably designed storm attenuation system that will incorporate rain gardens with 30-year overflow. The car parking area will have a tree pit bio retention area. The existing watercourse within the site will be moved into a new 1x1m open channel prior to being culverted. This section of the site will be landscaped as an amenity area for residents.

Figure 4.1: Location of Proposed Development at Taylor's Lane, Ballyboden, Dublin 16

Figure 4.2: Vegetation at the proposed site (i) 2009 (ii) 2020 (Source Google Imagery) within the boundary of the proposed development.

4.2 EXISTING ENVIRONMENT

During the site survey seven habitats were identified;

Recolonising Bare Ground (ED3)
Within the site is recolonising bare ground (ED3) habitat. The dominant species found here are Buttercup (*Ranunculus* spp.), Clover (*Trifolium* spp.), Sow-thistle (*Sonchus* spp.), Dock (*Rumex* spp.), Creeping Thistle *(Cirsium arvense*), Ribwort Plantain (*Plantago lanceolata*), Colt's Foot (*Tussilago farfara*), Nettle (*Urtica dioica*), Lesser Hawkbit (*Leontodon taraxacoides*), Rape (*Brassica napus*), Purple-loosestrife (*Lythrum salicaria*), Greater Plantain (*Plantago major*), Melilot (*Melilotus* spp.), Ragwort (*Senecio jacobaea*), Rosebay Willowherb (*Chamerion angustifolium*), Nipplewort (*Lapsana communis*), Dandelion (*Taraxacum* spp.), Annual Meadow-grass (*Poa annua*), Couch-grass (*Elytrigia repens*), Creeping Bent (*Agrostis stolonifera*) and Fescue (*Festuca* spp.)

Figure 4.2.1 Recolonising Bare Ground (ED3)

Hedgerows (WL1) and Treelines (WL2)

Along the south boundary and side of Newbrook House is hedgerows (WL1) and treelines (WL2) habitats with tree species Ash (*Fraxinus excelsior*), Sycamore (*Acer pseudoplatanus*), Blackthorn (*Prunus spinosa*), Hawthorn (*Crataegus monogyna*), Elder (*Sambucus nigra*), Horse-chestnut (*Aesculus hippocastanum*) and Willow (*Salix* spp.). Other species commonly found in this habitat are Holly (*Ilex aquifolium*), Buckler-fern (*Dryopteris* spp.), Bramble (*Rubus fruticosus*), Ivy (*Hedera helix*), Cleavers (*Galium aparine*), and Nettle (*Urtica dioica*).

Figure 4.2.2 Hedgerows (WL1) and Treeline (WL2) habitats

Buildings and Artificial Surfaces (BL3)

Large areas of concrete and the outbuildings/sheds site are classified as buildings and artificial surfaces (BL3) habitat with few flora species present such as Moss (*Bryophyta*), Valerian (*Centranthus ruber*), Groundsel (*Senecio vulgaris*), Ivy (*Hedera helix*) and Dandelion (*Taraxacum* spp.).

Figure 4.2.3 Buildings and Artificial Surfaces (BL3)

Scrub (WS1)

This habitat is found throughout the site. Tree species include Willow (*Salix* spp.) and Sycamore (*Acer pseudoplatanus*). Other flora species include are Grass spp., Bramble (*Rubus fruticosus*), Dock (*Rumex spp.*), Bindweed (*Calystegia* spp.), Cleavers (*Galium aparine*), Butterfly-bush (*Buddleja davidii*), Cabbage Palm (*Cordyline australis*), Alexanders (*Smyrnium olusatrum*), Vetch (*Vicia* spp.), Willowherb (*Epilobium* spp.), Himalayan Honeysuckle (*Leycesteria formosa*), Hogweed (*Heracleum sphondylium*) and Tutsan (*Hypericum androsaemum*).

Figure 4.2.4 Scrub (WS1)

Drainage Ditches (FW4)

Within the site boundary is drainage ditch (FW4) habitat. The flora found here include Water-cress (*Rorippa nasturtium-aquaticum*), Lesser Water-parsnip (*Berula erecta*), Butterbur (*Petasites hybridus*), Willowherb (*Epilobium* spp.), Water Horsetail (*Equisetium fluviatile*) and Water Figwort (*Scrophularia auriculata*).

Figure 4.2.5 Drainage Ditches (FW4)

Table 4.1 Habitats found in and along boundary of the development site

HABITAT CLASSIFICATION HIERARCHY		
LEVEL 1	**LEVEL 2**	**LEVEL 3**
B – Cultivated and built land	**BL** – Built Land	**BL3** – Buildings and artificial surfaces
E – Exposed rock and disturbed ground	**ED** – Disturbed ground	**ED2** – Spoil and bare ground
		ED3 – Recolonising bare ground
F – Freshwater	**FW** – Watercourses	**FW4** – Drainage ditches
W – Woodland and scrub	**WS** – Scrub/ transitional woodland	**WS1** – Scrub
	WL – Linear woodland / scrub	**WL1** – Hedgerows
		WL2 – Treelines

Table 4.2 Ecological Value of Identified Habitats at the Proposed Development

HABITAT TYPE	HABITAT RATING	KEY ECOLOGICAL RECEPTOR?
Drainage ditch	Local importance, lower value	Yes. Modified habitat, lower ecological value but would provide habitat for invertebrates.
Scrub (WS1)	Local importance, higher value	No. The majority of this habitat is made up of Bramble and Medium Impact Invasive species.
Hedgerows (WL1)	Local importance, higher value	Yes. May provide opportunities for bird nesting and foraging for bats.
Treelines (WL2)	Local importance, higher value	Yes. May provide opportunities for bird nesting and foraging for bats.
Spoil and bare ground (ED2)	Local importance, lower value	No. Modified habitat, low ecological value.
Recolonising bare ground (ED3)	Local importance, lower value	No. Modified habitat, low ecological value.
Buildings and artificial surfaces (BL3)	Local importance, lower value	No. Comprised of artificial surfaces, low ecological value.

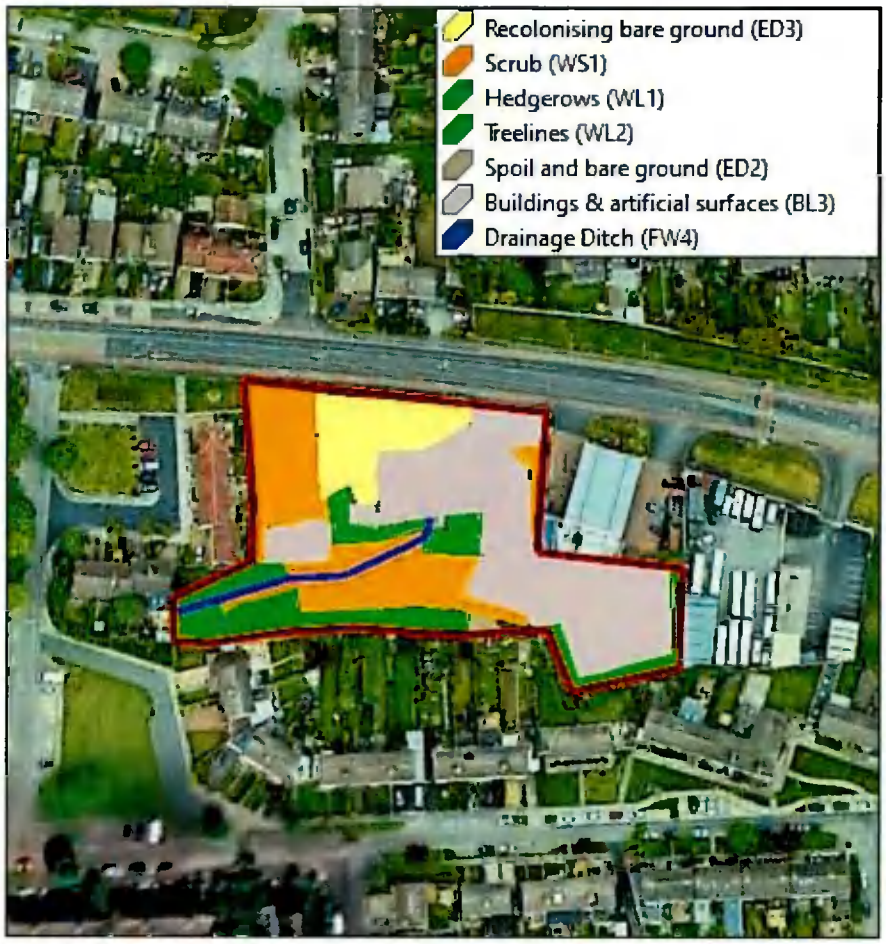

Figure 4.3 Habitat Map

4.4 HYDROLOGIC CONNECTIVITY

The proposed development is located within the Liffey and Dublin Bay Catchment (ID 09) and the Sub Catchment Dodder_SC_010 (ID: 09_16). The nearest watercourse is an unnamed watercourse (millrace) located behind Newbrook House within the proposed development site. This watercourse connects with either the Kilmashogue Stream (EPA Code: 09K06, Order 2) approximately 360m east of the site boundary or the River Owenadoher (EPA Code: 09O01, Order 4) which is the source of water for the millrace and is approximately 418m north west of the site boundary. The River Owenadoher flows for approximately 2.16km before joining the River Dodder (EPA Code: 09D01, Order 4). The Kilmashogue Stream flows into the River Owenadoher approximately 1.27km from the site boundary. The River Dodder flows into the River Liffey (EPA Code: 09L01, Order 6) after approximately 8.77km. The River Liffey flows into Dublin Bay approximately 5.28km. At the end of the Great South Wall/North Bull Wall the waters mix with the Natura 2000 sites on either side. See Figure 4.3 for watercourses within the vicinity of the site. See Figure 4.4 for watercourses relative to the propose development. Protected aquatic habitats and species are summarised in section 6 below.

Figure 4.4: Watercourses within vicinity of the proposed development

The Environmental Protection Agency (EPA) undertake surface water monitoring along the River Owenadoher. The results for the nearest monitoring stations with available information (as per Table 4.2) for the period 2005 – 2020 are summarised in Figure 4.4 below for indicative purposes. As can be seen in Figure 4.4 below, the River Owenadoher is mainly achieving a water quality status of between Q3 (poor) to Q3-4 (moderate) in recent years. EPA comments on the most recent monitoring results for the River Owenadoher are as follows "*Satisfactory ecological conditions continue at the upper station (1100) while a return to unsatisfactory Moderate ecological conditions were noted in the lowermo streaches (1700) in July 2019. A revisit to Station 1700 in July 2020 found continuing Moderate conditions.*"

Table 4.2: Monitoring Stations on the River Owenadoher within the vicinity of the development

STATION NO.	STATION LOCATION	EASTING	NORTHING	APPROX. LOCATION RELATIVE TO SITE
RS09O011100	Br SW of Delamaine Cottage	313411	224053	2.33km (Upstream)
RS09O011300	Scholarstown Road Br	313591	226942	392m West of boundary
RS09O011700	Br u/s Dodder R confl	314144	314144	1.95km (Downstream)

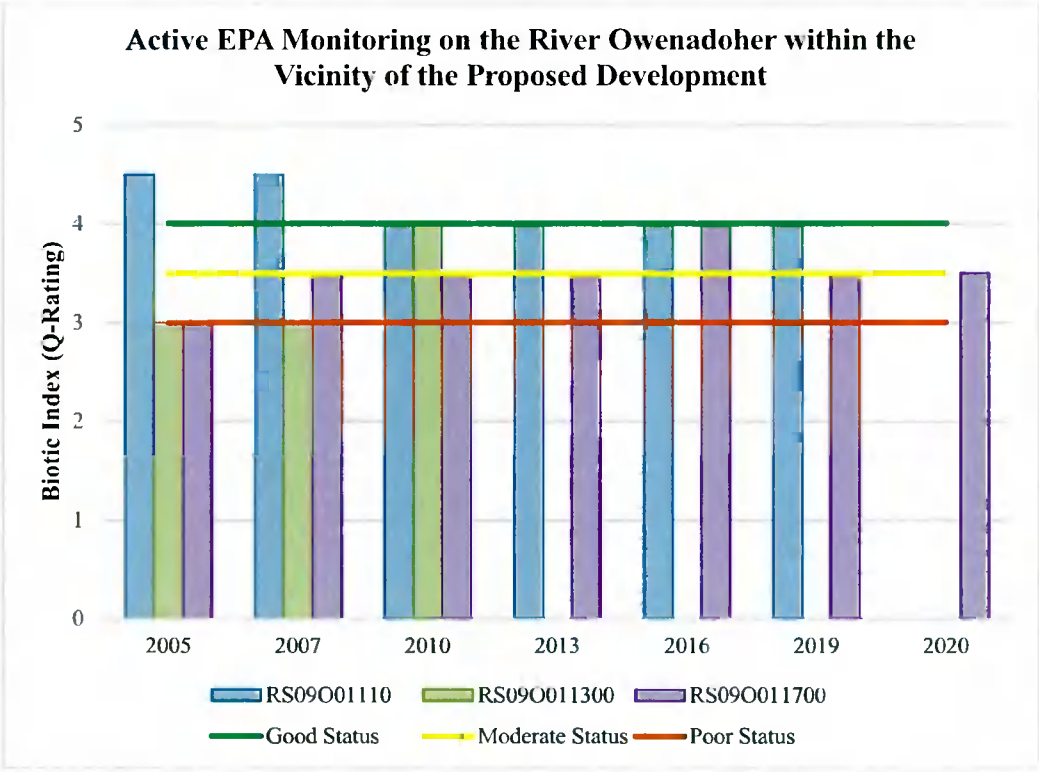

Figure 4.4: EPA Ecological Monitoring of the River Owenadoher from 2005 – 2020

Table 4.3: Status of Transitional and Coastal Waterbodies

TRANSITIONAL AND COASTAL WATERBODIES				
NAME	ID	TYPE	STATUS	DISTANCE
Dublin Bay	IE_EA_090_0000	Coastal	Not at risk - Good	7.2km NE
Liffey Estuary Lower	IE_EA_090_0300	Transitional	Review - Good	8km NE
Tolka Estuary	IE_EA_090_0200	Transitional	At risk - Moderate	9.9km NE
North Bull Island	IE_EA_090_0100	Transitional	Review - Unassigned	13.7km NE
Irish Sea Dublin (HA 09)	IE_EA_070_0000	Coastal	Not at risk - Good	12.8km E
Southwestern Irish Sea - Killiney Bay (HA10)	IE_EA_100_0000	Coastal	Not at risk - Good	12.4km E

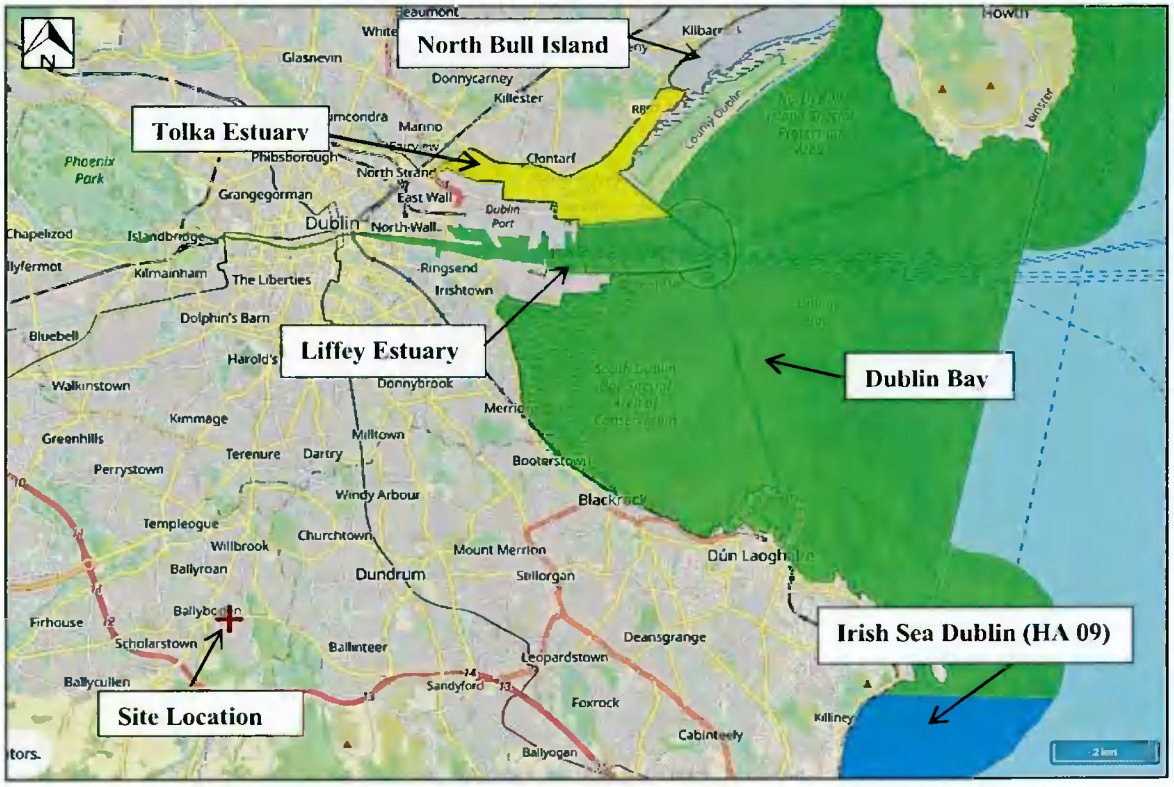

Figure 4.6: Transnational and coastal waters

4.5 INVASIVE SPECIES

Under Regulation 49(2) of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), save in accordance with a licence granted under paragraph (7), any person who plants, disperses, allows or causes to disperse, spreads or otherwise causes to grow in any place specified in relation to any plant which is included in Part 1 of the Third Schedule shall be guilty of an offence.

Materials containing invasive species such as Japanese Knotweed are considered "controlled waste", and, as such, there are legal restrictions on their handling and disposal. Under Regulation 49(7) of the European Communities (Birds and Natural Habitats) Regulations 2011, it is a legal requirement to obtain a license to move "vector materials" listed in the Third Schedule, Part 3.

During the site assessment no invasive plant species listed in the Third Schedule of the European Communities Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011) were recorded. Other invasive species recorded within the site;

Other Invasive Species	Habitat
Sycamore (*Acer pseudoplatanus*)	WS1/ WL1
Butterfly-bush (*Buddleja davidii*)	WS1/ED3
Himalayan Honeysuckle (*Leycesteria formosa*)	WS1/ED3
Wall Cotoneaster (*Cotoneaster horizontalis*)	BL3

Twelve invasive plant species listed in the Third Schedule of the European Communities Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011) were recorded within the 10km square;

Third Schedule Invasive Species	Tetrad
Three-cornered Garlic (*Allium triquetrum*)	O12
Indian Balsam (*Impatiens glandulifera*)	O12
Nuttall's Waterweed (*Elodea nuttallii*)	O12
Parrot's-feather (*Myriophyllum aquaticum*)	O12
Rhododendron ponticum	O12
Water Fern (*Azolla filiculoides*)	O12
American Skunk-cabbage (*Lysichiton americanus*)	O12
Fallopia japonica x sachalinensis = F. x bohemica	O12
Giant-rhubarb (*Gunnera tinctoria*)	O12
Himalayan Knotweed (*Persicaria wallichii*)	O12
Japanese Knotweed (*Fallopia japonica*)	O12

5. PROTECTED SPECIES

Developments have the potential to impact upon terrestrial and aquatic biodiversity through destruction and loss of habitat, disturbance due to noise and dust, the potential introduction of invasive species and light pollution.

5.1 BIRDS

Given the urban land use of the surrounding area it would be expected that common garden bird species would be present in the area. Bird species noted during the site assessment are included in the table below;

COMMON NAME	SCIENTIFIC NAME	E.U. BIRDS DIRECTIVE	BoCCI* RED LIST	BoCCI* AMBER LIST
Blackbird	*Turdus merula*	-	-	-
Blue Tit	*Parus caeruleus*	-	-	-
Great Tit	*Parus major*	-	-	-
House Sparrow	*Passer domesticus*	-	-	✓
Jackdaw	*Corvus monedula*	-	-	-
Magpie	*Pica pica*	-	-	-
Robin	*Erithacus rubecula*	-	-	-
Rook	*Corvus frugilegus*	-	-	-
Lesser Black-backed Gull	*Larus fuscus*	-	-	✓
Woodpigeon	*Columba palumbus*	-	-	-

COMMON NAME	SCIENTIFIC NAME	E.U. BIRDS DIRECTIVE	BOCCI* RED LIST	BOCCI* AMBER LIST
Wren	*Troglodytes troglodytes*	-	-	-

**The BoCCI (Birds of Conservation Concern in Ireland) List classifies bird species into one of three lists (Red, Amber or Green) based on their conservation status and conservation priority.*

All of the birds were observed within the scrub and trees of the site. With Lesser Black-backed Gull observed flying over the site.

No species are red listed under the BoCCI classification and three species House Sparrow and Lesser Black-backed Gull are amber listed. None of the bird species recorded are listed under Annex I of the E.U. Birds Directive.

Bird records for the previous thirty years were reviewed on the NBDC website for the 10km square in which the proposed development is located. Bird species of note recorded within the O12 tetrad include;

NBDC Records for tetrad O12		
Species	**Dataset**	**Designation**
Barn Owl (*Tyto alba*)	Birds of Ireland	Red List
Barn Swallow (*Hirundo rustica*)	Birds of Ireland	Amber List
Black-headed Gull (*Larus ridibundus*)	Birds of Ireland	Red List
Brent Goose (*Branta bernicla*)	Bird Atlas 2007 - 2011	Amber List
Common Coot (*Fulica atra*)	Birds of Ireland	Amber List
Common Eider (*Somateria mollissima*)	Birds of Ireland	Amber List
Common Goldeneye (*Bucephala clangula*)	Birds of Ireland	Amber List
Common Greenshank (*Tringa nebularia*)	Bird Atlas 2007 - 2011	Amber List
Common Grasshopper Warbler (*Locustella naevia*)	Birds of Ireland	Amber List
Common Kestrel (*Falco tinnunculus*)	Birds of Ireland	Amber List
Common Linnet (*Carduelis cannabina*)	Birds of Ireland	Amber List
Pochard (*Aythya ferina*)	Irish Wetland Birds Survey (I-WeBS) 1994-2001.	Amber List
Common Redshank (*Tringa totanus*)	Irish Wetland Birds Survey (I-WeBS) 1994-2001.	Red List
Common Sandpiper (Actitis hypoleucos)	Bird Atlas 2007 - 2011	Amber List
Common Snipe (*Gallinago gallinago*)	Birds of Ireland	Amber List
Common Starling (*Sturnus vulgaris*)	Birds of Ireland	Amber List
Common Swift (*Apus apus*)	Birds of Ireland	Amber List
Eurasian Curlew (*Numenius arquata*)	Birds of Ireland	Red List

Eurasian Oystercatcher (*Haematopus ostralegus*)	Birds of Ireland	Amber List
Eurasian Teal (*Anas crecca*)	Bird Atlas 2007 - 2011	Amber List
Eurasian Tree Sparrow (*Passer montanus*)	Birds of Ireland	Amber List
Eurasian Woodcock (*Scolopax rusticola*)	Birds of Ireland	Amber List
European Golden Plover (*Pluvialis apricaria*)	Birds of Ireland	Red List
Great Black-backed Gull (*Larus marinus*)	Birds of Ireland	Amber List
Great Cormorant (*Phalacrocorax carbo*)	Irish Wetland Birds Survey (I-WeBS) 1994-2001.	Amber List
Herring Gull (*Larus argentatus*)	Irish Wetland Birds Survey (I-WeBS) 1994-2001.	Amber List
House Martin (*Delichon urbicum*)	Birds of Ireland	Amber List
House Sparrow (*Passer domesticus*)	Birds of Ireland	Amber List
Lesser Black-backed Gull (*Larus fuscus*)	Irish Wetland Birds Survey (I-WeBS) 1994-2001.	Amber List
Little Egret (*Egretta garzetta*)	Bird Atlas 2007 - 2011	Annex I Bird Species
Little Grebe (*Tachybaptus ruficollis*)	Bird Atlas 2007 - 2011	Amber List
Merlin (*Falco columbarius*)	Birds of Ireland	Amber List
Mediterranean Gull (*Larus melanocephalus*)	Birds of Ireland	Amber List
Mew Gull (*Larus canus*)	Bird Atlas 2007 - 2011	Amber List
Mute Swan (*Cygnus olor*)	Birds of Ireland	Amber List
Northern Goshawk (*Accipiter gentilis*)	Rare birds of Ireland	Amber List
Northern Lapwing (*Vanellus vanellus*)	Birds of Ireland	Red List
Northern Wheatear (*Oenanthe oenanthe*)	Birds of Ireland	Amber List
Northern Shoveler (*Anas clypeata*)	Bird Atlas 2007 - 2011	Red List
Peregrine Falcon (*Falco peregrinus*)	Bird Atlas 2007 - 2011	Annex I Bird Species
Red Grouse (*Lagopus lagopus*)	Birds of Ireland	Red List
Red Kite (*Milvus milvus*)	Birds of Ireland	Amber List
Red-footed Falcon (*Falco vespertinus*)	Rare birds of Ireland	Annex I Bird Species
Rock Pigeon (*Columba livia*)	Ireland's BioBlitz	Annex II Bird Species
Sand Martin (*Riparia riparia*)	Bird Atlas 2007 - 2011	Amber List
Sky Lark (*Alauda arvensis*)	Birds of Ireland	Amber List
Snowy Owl (*Bubo scandiaca*)	Birds of Ireland	Amber List
Spotted Flycatcher (*Muscicapa striata*)	Birds of Ireland	Amber List
Stock Pigeon (*Columba oenas*)	Bird Atlas 2007 - 2011	Amber List
Tufted Duck (*Aythya fuligula*)	Irish Wetland Birds Survey (I-WeBS) 1994-2001.	Amber List

Whinchat (*Saxicola rubetra*)	Birds of Ireland	Amber List
Wood Warbler (*Phylloscopus sibilatrix)*	The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991	Amber List
Yellowhammer (*Emberiza citrinella*)	Birds of Ireland	Red List

5.2 BADGER

There are numerous NBDC records for Badger within the Tetrad O12 and within the vicinity of the proposed development. Animals paths were not observed within the development site. There was no evidence of animals moving from the hedgerow with no observed openings in the scrub/grass that was of suitable size for badgers. There was no evidence of a badger sett at the site. The scrub and hedgerow habitats would offer suitable foraging habitat for badgers however the site is surrounded by urban development and a busy roadway that would be of considerable disturbance to badgers.

5.3 BATS

See accompanying Bat Survey Report by Meehan Ecology for a full assessment of the species found and methodology. Bat activity on the site was low despite the surveys being carried out within the optimum period in the season and during suitable weather conditions. Only two bats were detected on the site during the three surveys; a soprano pipistrelle was detected flying along the front of the derelict sheds during the 30th June 2021 dusk survey and a single Leisler's bat was observed flying over the site in a westward direction during the 13th July 2021 dusk survey. No bat activity was detected during the dawn survey on the 14th July 2021. No bats were observed emerging from Newbrook House. The building is considered as having a low potential for bat roosts however the solid masonry structure may provide suitable winter hibernation roost conditions. No bats were observed emerging or re-entering the derelict sheds and they are all considered to have negligible potential for bat roosts.

The only mature trees within the site away from the boundary are Willow (*Salix* spp.) and are upon visual inspection considered to be negligible for potential bat roosting. The mature hedgerow and treeline along the boundary along the south boundary would have low bat roosting potential. Some trees are mature such as Cypress (*Cupressus* spp.) and Ash (*Fraxinus excelsior*) have some ivy growth.

The scrub habitat and immature trees predominately of Willow (*Salix* spp.) with Ash (*Fraxinus excelsior*), Hawthorn (*Crataegus monogyna*), Horse-chestnut (*Aesculus hippocastanum*) and Sycamore (*Acer pseudoplatanus*) would be negligible for potential bat roosting. This habitat would be suitable foraging habitat for bats.

Figure 5.3.1 Examples of mature Treeline and Hedgerow with a potential for bat foraging corridors

Figure 5.3.2 Disused Outbuildings and Immature trees with low to negligible potential for bat roosting

5.4 OTTER

While no sightings of otter, or evidence of otter (including holts, slides, spraints and tracks) were recorded during the site walkover, given that the proposed development site is located approximately 1.87km from the River Dodder it is probable otter is in the wider surrounding area of the proposed site. NBDC has records of otter within the vicinity of the proposed development along the River Dodder and Little Dargle but no records within the Owenadoher or Kilmashogue. The proposed development site is mainly comprised of artificial surfaces and scrub which can be considered as modified and of lower value to foraging otters.

5.5 INVERTEBRATES

The site contained an abundance of Bramble (*Rubus fruticosus*) in flower that was attracting Bumblebees (*Bombus*). Other insects noted during the site assessment were Honeybees (*Apis*) and Hover-flies (*Syrphidae* spp.). With butterfly species found mainly in ED3 habitat of the site such as Peacock (*Inachis io*), Small Tortoiseshell (*Aglais urticae*) and Cabbage White (*Pieris rapae*). The Footman moth (*Eilema* spp.) was observed when disturbed in scrub habitat. The hedgerows, treelines, scrub and grasslands would provide suitable habitat for invertebrates. The watercourse/ditch would offer suitable habitat for invertebrates but not for any protected invertebrates such as Desmoulin's Whorl Snail (*Vertigo (Vertigo) moulinsiana*).

Invertebrates records for the previous thirty years were reviewed on the NBDC website for the 10km square in which the proposed development is located. Invertebrates species of note recorded within the O12 tetrad include;

Species	Species name	Dataset	Designation
Butterfly	Dark Green Fritillary (*Argynnis aglaja*)	Butterflies of Ireland	Vulnerable
Butterfly	Grayling (*Hipparchia semele*)	Irish Butterfly Monitoring Scheme	Near threatened
Butterfly	Marsh Fritillary (*Euphydryas aurinia*)	Butterflies of Ireland	Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex II || Threatened Species: Vulnerable
Butterfly	Small Heath (*Coenonympha pamphilus*)	Irish Butterfly Monitoring Scheme	Near threatened
Bee	Andrena (*Melandrena*) *nigroaenea*	Bees of Ireland	Vulnerable
Bee	Bombus (Bombus) magnus	Bees of Ireland	Data deficient
Bee	Gipsy Cuckoo Bee (*Bombus (Psithyrus) bohemicus*)	Bees of Ireland	Near threatened
Bee	Large Red-Tailed Bumble Bee (*Bombus (Melanobombus) lapidarius*)	Bees of Ireland	Near threatened
Bee	Megachile (Delomegachile) willughbiella	Bees of Ireland	Near threatened
Bee	Megachile (Megachile) centuncularis	Bees of Ireland	Near threatened
Bee	Moss Carder-bee (*Bombus (Thoracombus) muscorum*)	Bees of Ireland	Near threatened
Bee	Nomada striata	Bees of Ireland	Endangered

Bee	Tawny Mining Bee (Andrena (Andrena) fulva)	Bees of Ireland	Regionally Extinct
Mollusc	Lesser Bulin (*Merdigera obscura*)	All Ireland Non-Marine Molluscan Database	Endangered
Mollusc	Silky Snail (*Ashfordia granulata*)	All Ireland Non-Marine Molluscan Database	Near threatened

5.6 AMPHIBIANS AND REPTILES

The watercourse within site located within the development site would be considered suitable habitat for amphibians such as the Common Frog (*Rana temporaria*). No Lizards were noted during the site assessment however the areas of exposed concrete could offer suitable sunbathing areas. The mature hedgerows could act as suitable terrestrial habitat and migration corridors for both amphibians and reptiles. NBDC website for the tetrad O12 include the protected species Common Frog (*Rana temporaria*), Smooth Newt (*Lissotriton vulgaris*) and Common Lizard (*Zootoca vivipara*) in addition to the invasive Red-eared Terrapin (*Trachemys scripta*).

5.7 OTHER SPECIES

The overall site consists of mainly of scrub (WS1), recolonising bare ground (ED3) and buildings and artificial surfaces (BL3) which are considered modified and of limited value to most large mammals. Given the urban setting and busy roadway (R113) it is very unlikely that large mammals such as Deer, Rabbit (*Oryctalagus cuniculus*) or Irish hare (*Lepus timidus hibernicus*) would be found within the site. Therefore, the proposed development would not have a significant impact upon terrestrial mammals in the general area due to habitat loss or fragmentation. Evidence of previous Fox (*Vulpes vulpes*) activity was noted at the proposed site. Other fauna not observed but would be typically found throughout the rest of Ireland would be present in the area of the proposed development. These include Hedgehog (*Erinus europaeus*), Stoat (*Mustela erminea hibernica*) and Wood Mouse (*Apodemus sylvaticus*).

Fauna records for the previous thirty years were reviewed on the NBDC website for the tetrad O12 include the following; Brown Long-eared Bat (*Plecotus auritus*), Daubenton's Bat (*Myotis daubentonii*), Badger (*Meles meles*), Pygmy Shrew (*Sorex minutus*), Red Squirrel (*Sciurus vulgaris*), Otter (*Lutra lutra*), Lesser Noctule (*Nyctalus leisleri*), Nathusius's Pipistrelle (*Pipistrellus nathusii*), Natterer's Bat (*Myotis nattereri*), Pine Marten (*Martes martes*), Red Deer (*Cervus elaphus*), Pipistrelle (*Pipistrellus pipistrellus sensu lato*), Soprano Pipistrelle (*Pipistrellus pygmaeus*), Hedgehog (*Erinaceus europaeus*) and Whiskered Bat (*Myotis mystacinus*).

Invasive Fauna of note include; Harlequin Ladybird (*Harmonia axyridis*), American Mink (*Mustela vison*), Brown Rat (*Rattus norvegicus*), Eastern Grey Squirrel (*Sciurus carolinensis*), Rabbit (*Oryctolagus cuniculus*), Sika Deer (*Cervus nippon*), Fallow Deer (*Dama dama*) and House Mouse (*Mus musculus*).

Table 5.6: Ecological Value of Species of the Proposed Development

SPECIES	SPECIES RATING	RATIONALE
Badger	Local importance, low to high value	No. The development site itself is located with an urban area with lower potential for foraging badgers. The treeline and hedgerow would provide both shelter and foraging resource for badgers however given the housing development the other side this hedgerow would have significant disturbance as a factor.
Bats (foraging and commuting habitat only – no bat roosts identified)	Local importance, higher value	Yes. The hedgerows / treelines within and adjacent to the proposed development are likely to be utilised by bats for both foraging and commuting.
Other	Local importance, low to high value	No. Limited Fauna sightings / evidence of other mammals. Site has limited potential to support other mammal species. Site was noted for previous Fox activity.
Breeding Birds	Local importance, higher value	Yes. All birds, their nests, eggs and young are protected under the Wildlife Act.
Aquatic Fauna	Local importance, lower value	Yes. The site contains a watercourse however the channel is artificial and only suitable for aquatic invertebrates.

6. PROTECTED SITES

6.1 NATURA 2000 SITES WITHIN ZONE OF INFLUENCE

In assessing the zone of influence of this project upon European sites, the following factors must be considered:

- Potential impacts arising from the project;
- The location and nature of European sites;
- Pathways between the development and European sites.

There is no standard radius that can be used to select which European sites are to be analysed. This can only be determined by looking at the zone of influence of the project at hand. A rule of thumb often used is to include all European sites within a distance of 15km.

Four Special Protection Area (SPA) sites occur within 15km of the proposed development and six Special Area of Conservation (SAC) sites occur within 15km of the proposed development and are shown in the following table:

SITE NAME	DESIGNATION	SITE CODE	DISTANCE
Wicklow Mountains	SAC	002122	4.91km S
Wicklow Mountains	SPA	004040	4.77km S
Glenasmole Valley	SAC	001209	6.46km SW
South Dublin Bay	SAC	000210	7.18km NE
South Dublin Bay and River Tolka Estuary	SPA	004024	7.02km NE
Knocksink Wood	SAC	000725	9.29km SE
North Dublin Bay	SAC	000206	11.48km NE
North Bull Island	SPA	004006	11.48km NE
Dalkey Islands	SPA	004172	13.33km E
Rockabill to Dalkey Island	SAC	003000	13.42km E

See accompanying Appropriate Assessment Screening Report (Document Ref: PES_AA_21174) for a complete assessment of the SACs and their qualifying interests.

6.2 OTHER PROTECTED SITES WITHIN ZONE OF INFLUENCE

No National Heritage Area occurs within 15km of the proposed development. Eighteen proposed National Heritage Areas (pNHA) occur within 15km of the proposed development. One National Park and two Nature Reserves (NR) are also with 15km of the proposed site.

SITE NAME	DESIGNATION	SITE CODE	APPROX. DISTANCE
Dodder Valley	pNHA	000991	2.9km NW
Fitzsimon's Wood	pNHA	001753	3.8km SE
Wicklow	National Park	4	5.4km S

Glenasmole Valley	pNHA	001209	5.8km SW
Grand Canal	pNHA	002104	5.4km NE
South Dublin Bay	pNHA	000210	7.18km NE
Lugmore Glen	pNHA	001212	7.8km W
Royal Canal	pNHA	002103	8.1km NE
Ballybetagh Bog	pNHA	001202	8.5km SE
Dingle Glen	pNHA	001207	8.5km SE
Liffey Valley	pNHA	000128	9.2km NW
Dolphins, Dublin Docks	pNHA	000201	9.2km NW
Knocksink Wood	pNHA / NR	000725 / 98	9.5km SE
Dalkey Coastal Zone And Killiney Hill	pNHA	001206	10.99km E
Glencree Valley	pNHA	001755	10.4km S
Slade Of Saggart And Crooksling Glen	pNHA	000211	10.6km W
Loughlinstown Woods	pNHA	001211	11.2km SE
Ballyman Glen	pNHA	000713	11.7km SE
North Dublin Bay	pNHA	000206	11.48km NE
North Bull Island	NR	000206	11.48km NE
Santry Demesne	pNHA	000178	13.3km N

See Appendix A for maps of the pNHAs, National Parks and Nature Reserves within 2km and 15km of the proposed development site.

The main source-pathway this site has with any of the sites listed above is hydrological due to the millrace going through the proposed site. The only protected sites hydrologically connected to the proposed site are South Dublin Bay pNHA (Site code: 000210) and Dolphins, Dublin Docks pNHA (Site code: 000201) which are connected via the Rivers Liffey, Dodder and Owenadoher. Water quality could have an impact on these sites however the proposed surface drainage system and waste water system connection to be installed at the site will prevent a significant impact on the water quality of the these sites.

The proposed site would not have any significant impact on the other sites listed about as the site does not contain any protected species or habitat of conservation value.

7.0 ECOLOGICAL IMPACT ASSESSMENT

The construction phase of the development would result in a direct and permanent loss of the existing habitats scrub (WS1), recolonising bare ground (ED3), some treelines (WL2) and hedgerows (WL1). The majority of the flora found here are recolonising species, as such the area would be considered as having been modified and of low ecological value. Therefore, the loss of this habitat would not be considered significant.

Some sections of hedgerow/treeline would require removal. When required where possible, hedgerow / tree removal would not be undertaken during the 1st March to the 31st August, so as not to disturb nesting bird species. This habitat would offer suitable breeding areas for birds and its removal should be undertaken outside the bird nesting season.

Dust emissions may arise during construction activities, in particular during earth-moving works, which may have the potential to impact upon photosynthesis, respiration and transpiration processes of flora due to the blocking of leaf stomata and have the potential to cause nuisance to fauna. Given the transient nature of construction works the potential impact to flora and fauna would not be considered significant when appropriate measures are taken to protect the environment during the construction phase.

7.1 TERRESTRIAL BIODIVERSITY PROTECTION PROTOCOL

As a matter of standard construction practice, the development would be constructed in accordance with the following methods and guidelines:

- All construction works would be confined as far as possible to the development footprint;
- Where possible, no construction works would be conducted outside of normal working hours, to reduce potential noise disturbance to nocturnal species;
- Should a protected fauna species such as Bat species or Badger be found during the construction phase of the project, an officer of the NPWS would be notified prior to the resumption of construction works;
- Where possible, vegetation removal works would be scheduled outside of the 1st of March to the 31st of August period, so as not to disturb nesting bird species;
- If works should take place beside any trees that will remain as part of the landscape plan, then a root protection would be maintained throughout the construction phase;
- The construction works contractor would take cognisance of the NRA's document "*Guidelines for the Protection and Preservation of Trees, Hedgerows and Scrub Prior to, During and Post Construction of National Road Schemes*", 2006. In particular, the construction works contractor would take cognisance of the guidelines with regards soakaway, sewage system and percolation area and the determination of the root protection area of the existing trees to be retained along the boundary of the proposed dwelling;
- A Landscape Plan will be prepared as part of the development and will take into consideration the urban setting and the use of native species where possible;

- All planting of trees and hedges to be undertaken during bare root season November to April. The balance of tree planting and lawn seeding to be completed within 12 months of the completion of construction work of the development.

7.2 DISTURBANCE TO PROTECTED HABITATS AND SPECIES

The proposed development does not directly impinge on any part of a protected site, and as such would not be expected to have any in-situ effects upon a protected site through loss or destruction of habitat, fragmentation of habitat, disturbance of habitat or direct reduction in species density.

7.2.1 Badger

No badger setts were recorded during the ecological survey or within the zone of influence of significant disturbance of the proposed development.

If a badger sett is discovered during site clearance works then this would have a negative impact on badger therefore mitigation measures should be put in place under licence having regard for Guidelines for the Treatment of Badgers Prior to the Construction of National Road Schemes (NRA 2006). The building site should be made safe for mammals with hazards such as open holes/excavations covered over or fitted with ramps to allow for escape. Guidelines on both active and inactive sets must be followed:
"The destruction of a successfully evacuated badger sett may only be conducted under the supervision of qualified and experienced personnel under licence from the NPWS. The possibility of badgers remaining within a sett must always be considered; suitable equipment should be available on hand to deal with badgers within the sett or any badgers injured during sett destruction"

7.2.2 Bats

It is an offence under Section 23 of the Wildlife Act and under Section 51 of Habitat Regulations, 2011 to kill a bat or to damage or destroy the breeding or resting place of any bat species. Under the Habitat Regulations, 2011 actions that intentionally or unintentionally harm, damage or destroy a bat or its roosting site are considered to be an offence. According to Section 54(2) of the Habitats Regulations 2011, a derogation licence to disturb bats or the breeding or resting places may be granted 'where there is no satisfactory alternative and the derogation is not detrimental to the maintenance of the populations of the species to which the Habitats Directive relates at a favourable conservation status in their natural range'.
Furthermore, as a signatory to the EUROBATS Agreement (Agreement on the Conservation of Populations of European Bats, 1994), Ireland is required to protect their habitats and important feeding areas from damage or disturbance. All Irish bat species are listed in Appendix II of the Bern Convention (1979), as species requiring protection.

Artificial lighting during the construction and operational phases has the potential to negatively impact upon bat species, as illumination can impact upon their roosting sites, commuting routes and foraging areas. During the construction phase, works are not anticipated to be conducted outside of normal working hours, which would considerably reduce the potential impacts upon

bat species. Should lighting be required during construction, measures are included below to reduce the potential impact of light pollution. Operational phase impacts on bats would be associated with permanent lighting associated with the new proposed development, including the carpark, nursing home and amenity areas. In the absence of mitigation measures, operational lighting has the potential to result in a moderate to adverse impact upon bat species. Therefore, measures with regards artificial lighting, as outlined below would be recommended to be implemented.

Artificial Lighting during construction phase;

- Construction works in the hours of darkness, when bats are active (April – October), would be kept to a minimum;
- Lighting of hedgerows / treelines would be avoided where possible;
- Should lighting be required during construction works, it would be of a low height (without compromising safe working conditions) to ensure minimal light spill. Where possible and where practicable to do so, timers or motion sensors would be used;
- Directional lighting would be used where possible, by use of louvres or shields fitted to the lighting;

White light emitting diode (LED) would be used where possible, which is considered to be low impact in comparison to other lighting types.

Artificial Lighting during operational phase;

The lighting design for the proposed development would be finalised at the detailed design stage. The lighting design would take cognisance of the following mitigation measures:

- Lighting would be directed to where it is required only;
- Lighting of hedgerows / treelines would be avoided where possible;
- Buildings, carparks and site entrance lighting would be angled away from hedgerows and treelines;
- Lighting would be of low height where possible, to minimise light spill;
- Where possible and practicable to do so, timers or motion sensors would be used;
- White LED or amber coloured LED outdoor lighting would be used where possible, which is considered to be low impact in comparison to other lighting types.

7.2.3 Other Fauna

It is not anticipated that there would be any significant impacts upon other fauna during the operational/construction phase of the development arising from the proposed drainage networks. Stormwater from the proposed development would comprise of clean rainwater run-off from roof and paved areas and would be directed to the drainage network and attenuation system within the proposed development.

7.3 INVASIVE SPECIES

The following controls for the prevention / treatment of invasive flora species would be implemented throughout the construction phase of the development:

- Regular site inspections would be undertaken to ensure that no growth of invasive species has taken place;
- The construction works contractor would ensure that all equipment and plant is inspected for the presence of invasive species and thoroughly washed prior to arriving to, and leaving from, the development site;
- All relevant construction personnel would be trained in invasive flora species (main species of concern) identification and control measures;
- In the unlikely event of an invasive species listed under the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 appearing onsite, works within the immediate vicinity would cease until the invasive plant has been appropriately treated and disposed of to a suitably licenced facility, in accordance with Regulation 49 of the 2011 Regulations;
- Cognisance would be taken of the National Roads Authority's Guidelines on "*The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads*".

7.4 AQUATIC ECOLOGY

The following mitigation measures would be proposed to ensure there is no significant impact upon the aquatic ecology of the area owing to a deterioration in water quality:

- The construction works contractor would adhere to standard construction best practice, taking cognisance of the Construction Industry Research and Information Association (CIRIA) guidelines "Control of Water Pollution from Construction Sites; guidance for consultants and contractors" 2001 and "Control of Water Pollution from Construction Sites – Guide to Good Practice", 2002;
- For works at the unnamed watercourse, a pump will be used to take the flow from upstream to downstream, while works take place to alter the watercourse, this pump would be fitted with a filter, to prevent entry of aquatic fauna into the pump and to limit the potential disturbance to the watercourse bed due to sediments. Pumping operations would be supervised at all times;
- Any vegetation cuttings should be removed from the watercourse and stored away from the banks;
- Construction activities such as earth moving shall be avoided during or after prolonged rainfall or an intense rainfall event and work will cease entirely if it is evident that water quality is being impacted within the unnamed watercourse;
- Daily visual inspections would be undertaken of the unnamed watercourse within the site during construction works;

- Should water be encountered during excavation works at the site, water would be pumped to a silt control feature, such as an appropriately sized tank / tanker and used for settlement;
- This settlement tank must have adequate capacity and water must be filtered before discharging. Water must not be directly discharged to a watercourse;
- Excavations and earth-moving activities would be planned outside periods of heavy rainfall, to limit the potential for suspended solids to become entrained within surface water run-off;
- Silt fencing would be placed around spoil areas until such time as the excavated soil has been used in landscaping / re-instatement works;
- Where possible, surface water run-off would be diverted from areas of bare / exposed ground;
- The use of pre-cast concrete where possible;
- The delivery and pouring of concrete would be supervised;
- All plant machinery and equipment would be maintained in good working order and regularly inspected;
- The re-fuelling of machinery would not take place within the immediate vicinity of drainage network;
- Spill kits, adequately stocked with spill clean-up materials such as booms and absorbent pads, would be available onsite;
- In the unlikely event of a hydrocarbon spillage, contaminated spill clean-up material would be properly disposed of to an authorised waste contractor;
- Cognisance should be taken of Inland Fisheries Ireland's "*Guidelines on Protection of Fisheries During Construction Works in and adjacent to Waters*";

Assuming all mitigation measures are put in place, there would be no significant residual impacts to the aquatic environment from the proposed development.

8.0 CUMULATIVE IMPACTS

The residual impact of this proposed development is anticipated to be slight negative local effect. Cumulative effects from a development in general can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location (CIEEM, 2018).

Considering the nature of the development and the adjacent urban area, the main potential cumulative impact upon biodiversity would be a deterioration in water and air quality during the operational phase resulting in an impact upon aquatic flora and fauna species and / or loss or fragmentation of natural habitat.

It is not anticipated that there would be any significant impact upon water quality during the operational phase, given that stormwater from the site would be directed to the drainage network and attenuation system. The surface water drainage will be attenuated in line with the recommended guidelines and policy. The foul drainage system will be discharged to the existing piped public sewer network located in the road carriageway on Taylor's Lane. Irish Water is currently upgrading capacity at Ringsend Wastewater Treatment Plant that will enable it to treat wastewater for up to 2.4 million population while meeting the required standards. Amongst the upgrades will be improvements to existing secondary treatment tanks to provide additional capacity and nutrient reduction to protect the nutrient-sensitive Dublin Bay area. In addition, the provision of a new phosphorous recovery process and expansion of the plant's sludge treatment facilities. This project aims to stop overflows in Dublin Bay.

With regards potential habitat loss or fragmentation of habitat, the proposed development is not anticipated to result in a significant impact upon habitat loss / fragmentation during either the construction or operational phases, given that the majority of the land would comprise of modified habitats of low ecological value and given that the landscape plan for the development will take into consideration the setting and use of native species. The mature trees along the majority of the south boundary will be maintained and additional planting of trees will be included in the landscape plan. Therefore, there would be no cumulative habitat loss or fragmentation impacts which could pose a significant risk to biodiversity.

Potential cumulative lighting impacts from external lighting for both developments has been addressed in the mitigation measures proposed in Section 7.2.2 for this development therefore cumulative impacts as a result of external lighting should not arise.

IMPACT	DEVELOPMENT PHASE	SIGNIFICANCE	MITIGATION MEASURES	RESIDUAL SIGNIFICANCE	RESIDUAL IMPACT TYPE
Habitat Loss	Construction & Operational	Slight significance	• Excavated soils would be segregated into subsoil and topsoil and reused in reinstatement and landscaping works; • The landscaping plan for the development take into consideration the setting and use of native species.	Not significant	Neutral
Introduction of Invasive Flora Species	Construction	Slight significance	• Construction plant would be inspected and washed prior to arriving onsite; • Regular site inspections for the presence of invasive species would be undertaken; • Should invasive species appear onsite, works would immediately cease until the plant was appropriately treated and disposed of.	Not significant	Neutral
Fauna Disturbance	Construction	Moderate significance	• Where possible, no construction works would be conducted outside of normal working hours • All plant machinery and equipment would be maintained in good working order and regularly inspected • Where possible, vehicles would be equipped with mufflers to suppress noise • As a minimum, the construction work contractor would comply with all legislative provisions relating to scrub / tree removal • Should a protected fauna species be found during the construction phase, the NPWS would be notified prior to the resumption of construction works • Works should not take place beside a Badger Sett and guidelines by NRA followed.	Slight significance	Minor Negative

IMPACT	DEVELOPMENT PHASE	SIGNIFICANCE	MITIGATION MEASURES	RESIDUAL SIGNIFICANCE	RESIDUAL IMPACT TYPE
	Operational	Not significant	None required	Not significant	Neutral
Fauna Mortality	Construction	Moderate significance	• As a minimum, the construction work contractor would comply with all legislative provisions relating to hedgerow / tree removal • Where scrub and hedgerow / tree removal works that are required during the bird nesting season (1st March to 31st August), the sections of scrub and trees for removal would be inspected by an ecologist for the presence of breeding birds. Where nests are present, a decision would be made as to whether a licence is required from the NPWS, or whether a suitable buffer zone could be established around the active nest with removal works rescheduled until chicks have fledged. • If any Badgers, Hedgehogs or other protected fauna are found on site, the NPWS will be contacted. • In addition, review the Irish Wildlife Trust for links on appropriate fauna relocation services.	Slight significance	Minor Negative
Bats – Disturbance / Severance of Habitat	Construction	Slight significance	• Landscape plan would take into consideration the mature treeline along the boundary and steps to enhance this boundary with suitable planting if required; • Measures would be implemented to reduce the potential for light pollution; • Construction works in the hours of darkness would be kept to a minimum where possible	Not significant	Neutral

IMPACT	DEVELOPMENT PHASE	SIGNIFICANCE	MITIGATION MEASURES	RESIDUAL SIGNIFICANCE	RESIDUAL IMPACT TYPE
	Operational	Slight significance	• Lighting design measures would be implemented to reduce the potential for upward light pollution.	Not significant	Neutral
Surface Water Quality Deterioration	Construction	Moderate significance	• Standard construction control measures for the protection of surface waters would be implemented • Concrete works would be supervised • Appropriate storage and handling of fuels and oils • Provision of spill kits	Not significant	Neutral
	Operational	Not significant	None required	Not significant	Neutral
Designated Sites	Construction	Moderate significance	• Standard construction control measures for the protection of surface waters would be implemented • Concrete works would be supervised • Appropriate storage and handling of fuels and oils • Provision of spill kits	Not significant	Neutral
	Operational	Not significant	None required	Not significant	Neutral

9.0 CONCLUSIONS

It is the conclusion of this report that there would be no potential for any significant impact on protected species as a result of the proposed development. Measures put in place for the protection of flora and fauna will ensure there are no potential for significant effects, and the project is recommended to proceed as proposed.

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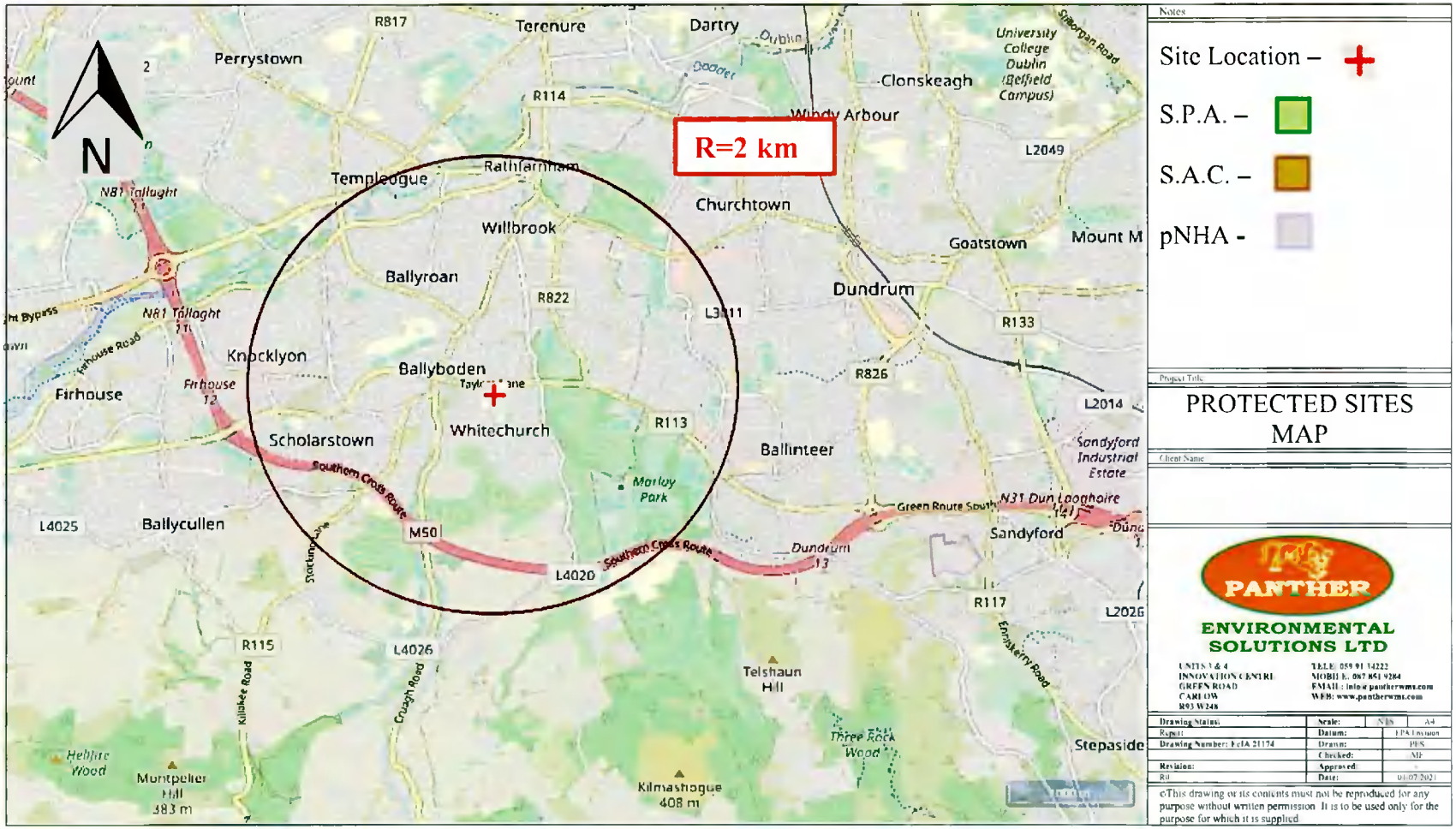
APPENDIX A

- PROTECTED SITES -

AND

- PROPOSED SITE LAYOUT-



Notes

Site Location –

S.P.A. –

S.A.C. –

pNHA -

Project Title

PROTECTED SITES MAP

Client Name

PANTHER ENVIRONMENTAL SOLUTIONS LTD

UNITS 3 & 4
INNOVATION CENTRE
GREEN ROAD
CARLOW
R93 W248

TELE: 059 91 34222
MOBILE: 087 861 9284
EMAIL: info@pantherwms.com
WEB: www.pantherwms.com

Drawing Status:	Scale:	NTS	A4
Report:	Datum:		ITM Envision
Drawing Number: EcIA 21174	Drawn:		PES
	Checked:		ME
Revision:	Approved:		
R0	Date:		01/07/2021

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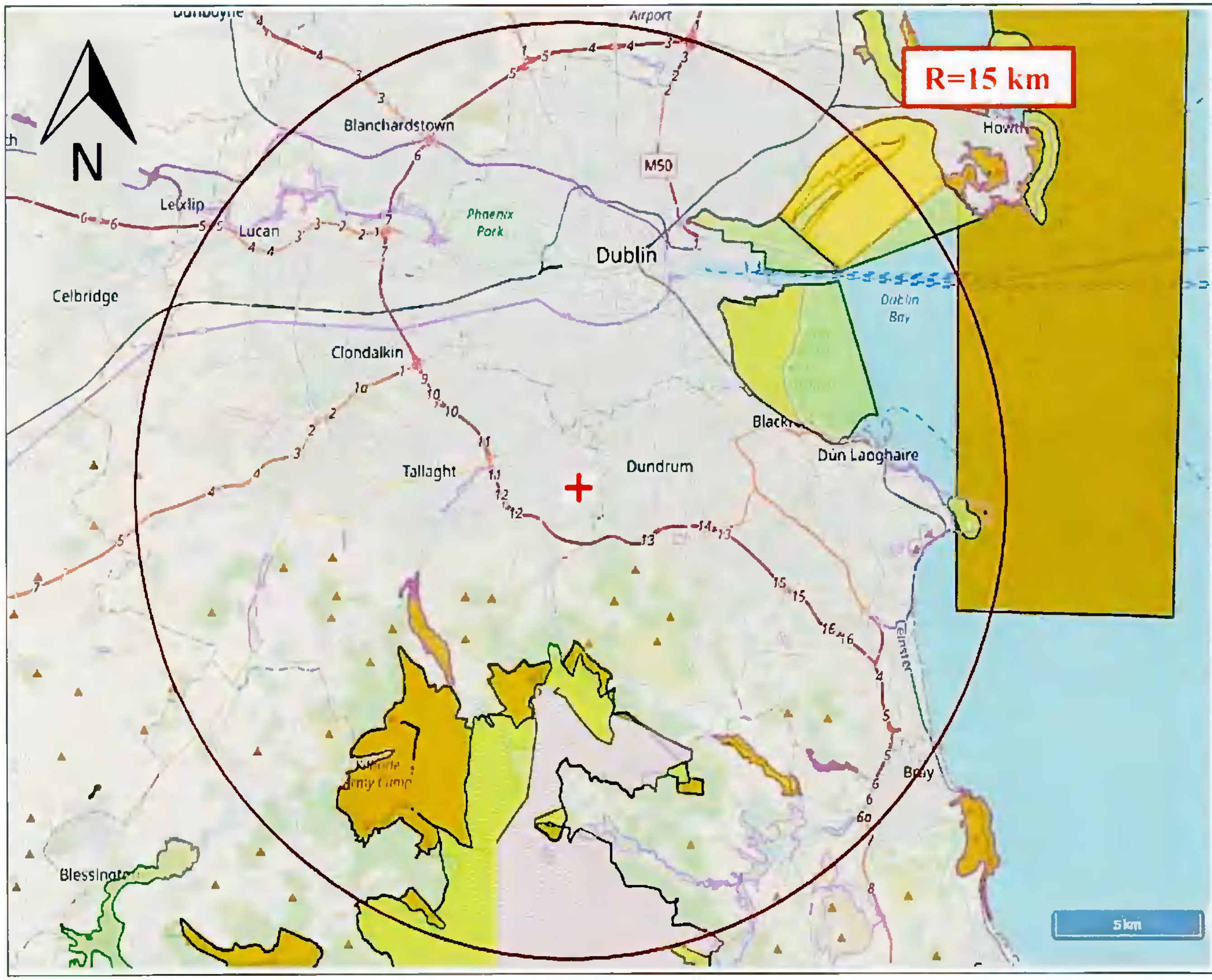

Notes

Site Location –

SPA –

SAC –

NHA –

pNHA –

Nature Reserve –

National Park -

Project Title

PROTECTED SITES MAP

Client Name:

PANTHER

ENVIRONMENTAL SOLUTIONS LTD

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Drawing Status	Scale:	NTS	A4
Report	Datum:	EPA Envision	
Drawing Number: EcIA 21174	Drawn:	PES	
	Checked:	MF	
Revision:	Approved:	-	
R0	Date:	01/07/2021	

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