



Enviroguide
CONSULTING

ECOLOGICAL IMPACT ASSESSMENT REPORT

FOR

PROPOSED MIXED-USE
DEVELOPMENT


AT


BELGARD SQUARE EAST, BELGARD
ROAD AND BLESSINGTON ROAD,
TALLAGHT, DUBLIN 24


ON BEHALF OF

Ravensbrook Ltd.

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DOCUMENT CONTROL SHEET

Client	Ravensbrook Ltd
Project Title	Proposed Development at Belgard Square East, Belgard Road and Blessington Road, Tallaght, Dublin 24
Document Title	Ecological Impact Assessment Report

Revision	Status	Author(s)	Reviewed	Approved	Issue Date
1.0	Draft for internal Review	Shannen O'Brien <i>Project Ecologist</i>	Colin Lennon <i>Technical Director</i>	-	-
2.0	Draft for Client	Shannen O'Brien <i>Project Ecologist</i>	Colin Lennon <i>Technical Director</i>	Colin Lennon <i>Technical Director</i>	15.10.2021
3.0	Draft for Client	Shannen O'Brien <i>Project Ecologist</i>	Colin Lennon <i>Technical Director</i>	Colin Lennon <i>Technical Director</i>	03.05.2022
4.0	Final	Shannen O'Brien <i>Project Ecologist</i>	Colin Lennon <i>Technical Director</i>	Colin Lennon <i>Technical Director</i>	01/06/2022

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1. INTRODUCTION

Enviroguide Consulting was commissioned by Ravensbrook Ltd to prepare an Ecological Impact Assessment for a Proposed Development at the site at Belgard Square East, Belgard Road and Blessington Road, Tallaght, Dublin 24.

This Ecological Impact Assessment (EclA) assesses the potential effects of the Proposed Development on habitats and species; particularly those protected by National and International legislation or considered to be of particular nature conservation importance. This report will describe the ecology of the Proposed Development area, with emphasis on habitats, flora and fauna, and will assess the potential effects of the Construction and Operational Phases of the Proposed Development on these ecological receptors. The report follows Guidelines for Ecological Impact Assessment in the UK and Ireland, by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018).

1.1. Quality assurance and competence

Synergy Environmental Ltd., T/A Enviroguide Consulting, is wholly Irish Owned multi-disciplinary consultancy specialising in the areas of the Environment, Waste Management and Planning. All of our consultants carry scientific or engineering qualifications and have a wealth of experience working within the Environmental Consultancy sectors, having undergone extensive training and continued professional development.

Enviroguide Consulting as a company remains fully briefed in European and Irish environmental policy and legislation. Enviroguide staff members are highly qualified in their field. Professional memberships include the Chartered Institution of Wastes Management (CIWM), the Irish Environmental Law Association and Chartered Institute of Ecology and Environmental Management (CIEEM).

All surveying and reporting have been carried out by qualified and experienced ecologists and environmental consultants. Aisling Walsh, Professional Bat Ecologist with Ash Ecology and Environmental Ltd. undertook the on-site bat surveys. Shannen O'Brien, Ecologist with Enviroguide undertook the habitat surveys and desktop research for this report.

Aisling Walsh is a Professional Ecologist and director of Ash Ecology Consulting. Aisling has a wealth of academic qualification having studied a MSc in Biodiversity and Conservation (TCD), A BSc (Hons) Zoology (NUIG), a Diploma in Applied Aquatic Sciences (GMIT), a Post Graduate Diploma in Statistics (TCD), and a Certificate in Environmental Noise (Institute of Acoustics); while also holding a full membership of the Chartered Institute of Ecology and Environmental Management (CIEEM). Aisling has written numerous Ecological Impact Assessments (EclA), Screening for Appropriate Assessment Stage I and Stage II Natura Impact Statement, Environmental Impact Assessments/Statements, Badger Surveys, Bat Surveys, Habitat Surveys. She has also provided input and reviewed Ecological and Environmental assessments for several EIS and EIA Reports and conducted numerous noise surveys for EPA licensed facilities. AEE is listed as a Registered Practice by the CIEEM.

Shannen O'Brien has a B.A. in Zoology from Trinity College Dublin and a M.Sc. Hons. in Wildlife Conservation and Management from University College Dublin, and has experience in desktop research, report writing, and literature scoping-review, as well as practical field and laboratory experience (Pollinator surveying, sampling and identification, habitat surveying,

invasive species surveying, etc.). Shannen has prepared Stage I and Stage II Appropriate Assessment Reports, Invasive Species Surveys, Ecology Statements, and Ecological Impact Assessments (EclA).

2. RELEVANT LEGISLATION

An Ecological Impact Assessment (EclA) is a process of identifying, quantifying, and evaluating potential effects of development-related or other actions on habitats, species and ecosystems (CIEEM, 2016). The Proposed Development is sub-threshold for an Environmental Impact Assessment (EIA) under the Planning and Development Regulations 2001, as amended.

An EclA is not a statutory requirement, however it is a best practice evaluation process. This EclA has been undertaken to support and assess the Proposed Development planning application and assesses the potential impacts that the Proposed Development may have on the ecology of the site and its environs. Where potential for a risk to the environment is identified, mitigation measures are proposed on the basis that by deploying these measures the risk is eliminated or reduced to an insignificant level. These mitigation measures are to protect and enhance the biodiversity on or around the Site of the Proposed Development, and are entirely separate and distinct from the mitigation measures put in place to prevent or avoid impacts on European Sites and, as confirmed by the accompanying AA Screening report, no such measures have been taken into account in carrying out the AA Screening for the Proposed Development. This EclA is provided to assist the Competent Authority with its decision making in respect of the Proposed Development.

2.1. National Legislation

2.1.1. Wildlife Act 1976 and amendments

The Wildlife Act 1976 was enacted to provide protection to birds, animals, and plants in Ireland and to control activities which may have an adverse impact on the conservation of wildlife. With regard to the listed species, it is an offence to disturb, injure or damage their breeding or resting place wherever these occur without an appropriate licence from the National Parks and Wildlife Service (NPWS). This list includes all wild birds along with their nests and eggs. Intentional destruction of an active nest from the building stage up until the chicks have fledged is an offence. This includes the cutting of hedgerows from the 1st of March to the 31st of August. The act also legally protects Natural Heritage Areas (NHAs) from damage from the date they are formally proposed for designation. The Wildlife Amendment Act 2000 widened the scope of the Act to include most species, including the majority of fish and aquatic invertebrate species which were excluded from the 1976 Act.

2.1.2. EU Habitats Directive 1992 and EC (Birds and Natural Habitats) Regulations 2011

The EU Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive 1992) provides protection to particular species and habitats throughout Europe. The Habitats Directive has been transposed into Irish law through the Planning and Development Act 2000 (as amended) and the EC (Birds and Natural Habitats) Regulations 2011.

Annex IV of the EU Habitats Directive provides protection to a number of listed species, wherever they occur. Under Regulation 23 of the Habitats Directive, any person who, in regards to the listed species, "Deliberately captures or kills any specimen of these species in the wild, deliberately disturbs these species particularly during the period of breeding, rearing,

hibernation and migration, deliberately takes or destroys eggs from the wild or damages or destroys a breeding site or resting place of such an animal shall be guilty of an offence.”

2.1.3. Flora (Protection) Order, 2015

The Flora (Protection) Order (S.I. No. 356/2015) affords protection to several species of plant in Ireland, including 68 vascular plants, 40 mosses, 25 liverworts, 1 stonewort and 1 lichen. This Act makes it illegal for anyone to uproot, cut or damage any of the listed plant species and it also forbids anyone from altering, interfering, or damaging their habitats. This protection is not confined to within designated conservation sites and applies wherever the plants are found.

2.2. International Legislation

2.2.1. EU Birds Directive

The Birds Directive constitutes a level of general protection for all wild birds throughout the European Union. Annex I of the Birds Directive includes a total of 194 bird species that are considered rare, vulnerable to habitat changes or in danger of extinction within the European Union. Article 4 establishes that there should be a sustainable management of hunting of listed species, and that any large scale non-selective killing of birds must be outlawed. The Directive requires the designation of Special Protection Areas (SPAs) for: listed and rare species, regularly occurring migratory species and for wetlands which attract large numbers of birds. There are 25 Annex I species that regularly occur in Ireland and a total of 153 Special Protection Areas have been designated.

2.2.2. EU Habitats Directive

The Habitats Directive aims to protect some 220 habitats and approximately 1000 species throughout Europe. The habitats and species are listed in the Directives annexes, where Annex I covers habitats and Annex II, IV and V cover species. There are 59 Annex I habitats in Ireland and 33 Annex IV species which require strict protection wherever they occur. The Directive requires the designation of Special Areas of Conservation for areas of habitat deemed to be of European interest. The SACs together with the SPAs from the Birds Directive form a network of protected sites called Natura 2000.

2.2.3. Water Framework Directive

The EU Water Framework Directive (WFD) 2000/60/EC is an important piece of environmental legislation which aims to protect and improve water quality. It applies to rivers, lakes, groundwater, estuaries, and coastal waters. The Water Framework Directive was agreed by all individual EU member states in 2000, and its first cycle ran from 2009 – 2015. The Directive runs in 6-year cycles, so the second (current) cycle runs from 2016 – 2021. The aim of the WFD is to prevent any deterioration in the existing status of water quality, including the protection of good and high water quality status where it exists. The WFD requires member states to manage their water resources on an integrated basis to achieve at least ‘good’ ecological status, through River Basin Management Plans (RBMP), by 2027.

2.2.4. Bern and Bonn Convention

The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1982) was enacted to conserve all species and their habitats. The Convention on

the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979, enacted 1983) was introduced to give protection to migratory species across borders in Europe.

2.2.5. Ramsar Convention

The Ramsar Convention on Wetlands is an intergovernmental treaty signed in Ramsar, Iran, in 1971. The treaty is a commitment for national action and international cooperation for the conservation of wetlands and their resources. In Ireland there are currently 45 Ramsar sites which cover a total area of 66,994 Ha.

3. DESCRIPTION OF THE PROPOSED DEVELOPMENT

3.1. Location

The Site of the Proposed Development is approximately 1.25ha, located within a retail estate on Belgard Road, Tallaght, Co. Dublin. The Site is currently a vacant lot, and is bounded on the east by the Belgard Road, on the north by Old Blessington Road, and the southern and western boundaries are abutted by retail units. The surrounding environment is predominantly urban in nature.

3.2. Description

The Proposed Development will consist of the demolition of existing boundary wall and construction of:

1. 2,206 sqm of commercial floor area including retail, office (Class 2 financial/professional services and Class 3 office), café, licenced restaurant, and a 267sqm crèche at ground and first floor levels;
2. 318 no. build to rent residential apartments including 107 no. one bedroom units and 211 no. 2 bedroom units, within a part 6 to part 12 no. storey building over partial basement;
3. 2,222 sqm of communal external amenity space provided in the form of a ground floor garden and external terraces at fifth, sixth, seventh and eighth floor levels; 1,449 sqm of public open space provided in the form of a central courtyard and landscaped areas at site perimeters;
4. 1,553 sqm of resident support facilities and services and amenities provided at basement, ground and first floor levels;
5. Vehicular access to the basement development will be from a new access point from Belgard Square East;
6. A new tertiary access road will be provided at the south of the site linking Belgard Square East and Belgard Road with set down area;
7. Provision of 130 no. car parking spaces (8 no. club car spaces) at basement level and 5 no. set down spaces including 1 no. disabled access space at ground level, layby on Belgard Square East, 6 no. motorcycle spaces and 704 no. bicycle parking spaces;
8. Provision of 4 no. Ø0.3m microwave link dishes to be mounted on 2 no. steel support pole affixed to lift shaft overrun, all enclosed in radio friendly GRP shrouds, together with associated equipment at roof level at Block B;
9. Provision of 3 no. ESB substations with switch rooms and plant rooms at basement level, hard and soft landscaped areas, bin and bicycle stores, public lighting, attenuation, green roof, plant at roof level, service connections and all ancillary site development works.

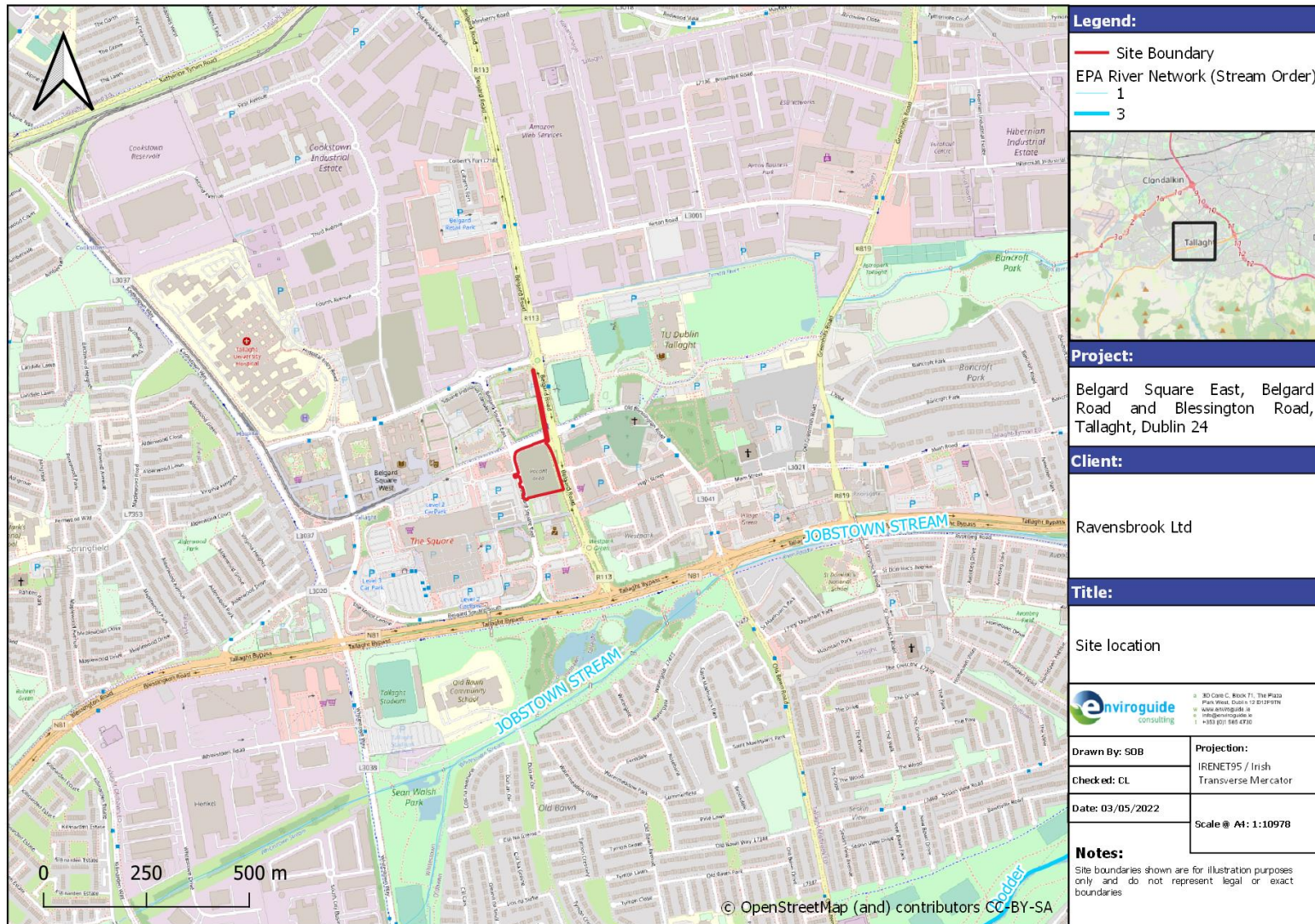


FIGURE 1. SITE LOCATION.

4. METHODOLOGY

This section details the steps and methodology employed to undertake an Ecological Impact Assessment of the Proposed Development.

4.1. Scope of Assessment

The specific objectives of the study were to:

- Undertake baseline ecological surveys and evaluate the nature conservation importance of the Site of the Proposed Development;
- Identify and assess the direct, indirect, and cumulative ecological implications or impacts of the Proposed Development during its lifetime; and
- Where possible, propose mitigation measures to remove or reduce those impacts at the appropriate stage of development.

4.2. Desk Study

A desktop study was carried out to collate and review available information, datasets and documentation sources pertaining to the site's natural environment. The desktop study relied on the following sources:

- Information on species records and distributions, obtained from the National Biodiversity Data Centre (NBDC) at www.maps.biodiversityireland.ie ;
- Information on waterbodies, catchment areas and hydrological connections obtained from the Environmental Protection Agency (EPA) at www.gis.epa.ie ;
- Information on bedrock, groundwater, aquifers and their statuses, obtained from Geological Survey Ireland (GSI) at www.gsi.ie ;
- Information on the network of designated conservation sites, boundaries, qualifying interests and conservation objectives, obtained from the National Parks and Wildlife Service (NPWS) at www.npws.ie ;
- Satellite imagery and mapping obtained from various sources and dates including Google, Digital Globe and Ordnance Survey Ireland;
- Information on the existence of permitted developments, or developments awaiting decision, in the vicinity of the Proposed Development from Dublin City Council available at: <http://www.dublincity.ie/main-menu-services-planning/planning-search>
- Information on the extent, nature and location of the Proposed Development, provided by the applicant and/or their design team;
- The current conservation status of birds in Ireland taken from Gilbert et al. (2021).
- The pollinator friendly planting code provided by The All-Ireland Pollinator Plan (2015-2020) available at www.pollinators.ie
- Connecting with Nature – Draft Biodiversity Action Plan for South Dublin County 2020-2026
- South Dublin County Council Development Plan 2016 – 2022
- Draft South Dublin County Development Plan 2022 – 2028

A comprehensive list of all the specific documents and information sources consulted in the completion of this document is provided in Section 11, References.

4.3. Field surveys

4.3.1. Habitat Surveys

A habitat survey was carried out at the Site on the 11th of October 2021. Habitats were categorised according to the Heritage Council's '*A Guide to Habitats in Ireland*' (Fossitt, 2000) to level 3. The habitat mapping exercise had regard to the 'Best Practice Guidance for Habitat Survey and Mapping' (Smith et al., 2010) published by the Heritage Council. Satellite imagery was used together with GPS to accurately enable field navigation. Habitat categories, characteristic plant species, invasive species and other ecological features were recorded.

4.3.2. Bat Surveys

Bat surveys were carried out on the 9th of May 2021 and the 16th of May 2022. A Seek Thermal Reveal Pro High-Resolution Thermal Imaging Camera, along with a RIDGID 36848 Micro CA-150 Hand-Held Borescope was available for inspection of any crevices/roof spaces on the building (where accessible). The borescope is fitted with a camera and allows visibility of confined spaces and narrow passages potentially used by hibernating/roosting bats. It allows spaces up to 3m from ground level to be inspected.

4.3.3. Bird Surveys

Bird surveys of the Site were carried out in conjunction with the habitat survey. All bird encounters were recorded, through audio and visual means. Where possible, buildings on Site were checked for nests although, due to the amount of hardstanding on the Site, the opportunities for suitable nesting habitat were limited.

4.3.4. Mammal Surveys

Mammal surveys of the Site were carried out in conjunction with the habitat survey. The Site was examined for tracks and signs of mammals. The habitat types recorded throughout the survey area were used to assist in identifying the fauna considered likely to utilise the area.

4.3.5. Invasive Species Surveys

The Site was assessed for the presence of invasive plant species during the habitat survey.

4.4. Consultation

No consultation was undertaken as part of this Ecological Impact Assessment.

4.5. Assessment

The value of the ecological resources, i.e. the habitats and species present or potentially present, was determined using the ecological evaluation guidance given in the National Roads Authority's Ecological Assessment Guidelines (NRA, 2009a), presented in Appendix I. This evaluation scheme, with values ranging from locally important to internationally important, seeks to provide value ratings for habitats and species present that are considered ecological receptors of impacts that may ensue from a proposal. As per the NRA guidelines, impact assessment is only undertaken of key ecological receptors (KERs).

The assessment of the potential effect or impact of the Proposed Development on the identified key ecological receptors was carried out with regard to the criteria outlined in the draft EPA Guideline (EPA, 2017), presented in Appendix II. These guidelines set out a number

of parameters such as quality, magnitude, extent and duration that should be considered when determining which elements of the Proposed Development could constitute impact or sources of impacts.

4.6. Limitations

An extensive search of available datasets for records of rare and protected species within proximity of the Proposed Development has been undertaken as part of this assessment. However, the records from these datasets do not constitute a complete species list. The absence of species from these datasets does not necessarily confirm an absence of species in the area.

5. BASELINE ECOLOGICAL CONDITIONS

5.1. Site Overview

5.1.1. Geology, Hydrology and Hydrogeology

The Site of the Proposed Development is within the Liffey and Dublin Bay catchment and Dodder_SC_010 sub catchment. The closest watercourse to the Site is Jobstown Stream approximately 411m to the southeast, which flows into the River Dodder almost 2km to the east of the Site, and ultimately into Dublin Bay. The status of the River Dodder was designated as *Moderate* by the EPA in 2019 (station code: RS09D010620).

The Site is situated on the Dublin groundwater body, which is *Not Risk* of not meeting its WFD objectives. The aquifer type within the Site boundary is a *Locally Important Aquifer* (LI) aquifer on bedrock which is *Moderately Productive only in Local Zones*. The groundwater rock units underlying the aquifer are classified as *Dinantian Upper Impure Limestones* (GSI, 2021). The level of vulnerability of the Site to groundwater contamination via human activities is *Moderate*. The soil is classified as *Urban* and the subsoil is made ground (*Made*) (EPA, 2021).

5.2. Designated Sites

The Habitats Directive (92/43/EEC) seeks to conserve natural habitats and wild fauna and flora by the designation of Special Areas of Conservation (SACs) and the Birds Directive (2009/147/EC) seeks to protect birds of special importance by the designation of Special Protection Areas (SPAs). It is the responsibility of each member state to designate SPAs and SACs, both of which will form part of Natura 2000, a network of protected sites throughout the European Community. SACs are selected for the conservation of Annex I habitats (including priority types which are in danger of disappearance) and Annex II species (other than birds). SPAs are selected for the conservation of Annex I birds and other regularly occurring migratory birds and their habitats. The annexed habitats and species for which each site is selected correspond to the qualifying interests of the sites; from these the conservation objectives of the site are derived.

Natural Heritage Areas (NHAs) are designations under the Wildlife Acts to protect habitats, species, or geology of national importance. The boundaries of many of the NHAs in Ireland overlap with SAC and/or SPA sites. Although many NHA designations are not yet fully in force under this legislation (referred to as 'proposed NHAs' or pNHAs), they are offered protection in the meantime under planning policy which normally requires that planning authorities give recognition to their ecological value.

Table 1 below presents details of the designated sites within a 15km radius of the Proposed Development. In addition, the potential for connectivity with designated sites at distances of greater than 15km from the Development was also considered in this initial assessment. In this case, there is no potential connectivity between the Development site and designated sites located at a distance greater than 15km from the Proposed Development.

The result of this preliminary screening concluded that there is a total of six SACs, three SPAs and 20 pNHAs located within the Zone of Influence of the Proposed Development Site. The distances to each site listed are taken from the nearest possible point of the Proposed Development Site boundary to nearest possible point of each Natura 2000 site or pNHA. In

addition, Dublin Bay is designated as a UNESCO Biosphere¹. Dublin Bay Biosphere contains three different zones, which are managed in different ways:

- The core zone of Dublin Bay Biosphere comprises 50km² of areas of high natural value. Key areas include the Tolka and Baldoyle Estuaries, Booterstown Marsh, Howth Head, North Bull Island, Dalkey Island and Ireland's Eye.
- The buffer zone comprises 82km² of public and private green spaces such as parks, greenbelts and golf courses, which surround and adjoin the core zones.
- The transition zone comprises 173km² and forms the outer part of the Biosphere. It includes residential areas, harbours, ports and industrial and commercial areas.

TABLE 1. DESIGNATED SITES WITHIN THE ZONE OF INFLUENCE (15KM) OF THE PROPOSED DEVELOPMENT, POTENTIAL PATHWAYS BETWEEN THE PROPOSED DEVELOPMENT SITE AND THE DESIGNATED SITES. SITES THAT HAVE BEEN SCREENED INTO THIS ECIA FOR FURTHER ASSESSMENT ARE SHADED IN GREEN.

Site Name & Code (Receptor)		
Special Area of Conservation		
Glenasmole SAC (001209)	3.2 km	No – Refer to AA Screening Report accompanying this application.
Wicklow Mountains SAC (002122)	5.6 km	
South Dublin Bay SAC (000210)	11.3 km	
Rye Water Valley/Carton SAC (001398)	11.5 km	
Knocksink Wood SAC (000725)	13.2 km	
North Dublin Bay SAC (000206)	14.7 km	
Red Bog, Kildare SAC (000397)		
Special Protection Area		
Wicklow Mountains SPA (004040)	7.1 km	No – Refer to AA Screening Report accompanying this application.
South Dublin Bay and River Tolka Estuary SPA (004024)	11.3 km	
Poulaphouca Reservoir SPA (004063)	14.1 km	
North Bull Island SPA (004006)		
Proposed Natural Heritage Area		
Dodder Valley (000991)	1.4 km	Yes – There is a hydrological connection via surface water drainage to the Dodder River during both the Construction and Operational Phases of the Proposed Development
Lugmore Glen (001212)	3.1 km	No – There is no hydrological connection. In addition, the intervening distances between the Site and the pNHAs are sufficient to exclude the possibility of significant effects on the pNHAs arising from: emissions of noise, dust, pollutants and/or
Glenasmole Valley (001209)	3.2 km	
Grand Canal (002104)	4.4 km	

¹ A biosphere is a special designation awarded by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) but managed in partnership by communities, NGOs and local and national governments (<https://www.dublinbaybiosphere.ie/>).

Site Name & Code (Receptor)		
Slade Of Saggart And Crooksling Glen (000211)	5.7 km	vibrations emitted from the Site during the Construction Phase; increased traffic volumes during the Construction and Operational Phase and associated emissions; potential increased lighting emitted from the Site during Construction and Operational Phase; and increased human presence at the Site during Construction and Operational Phase.
Liffey Valley (000128)	7.2 km	
Fitzsimon's Wood (001753)	9.0 km	
Royal Canal (002103)	9.8 km	
South Dublin Bay (000210)	11.3 km	<p>Yes – there is a weak hydrological connection to Dublin Bay via discharges from Ringsend WWTP and the surface water sewer serving the Site. However, the potential for surface water generated at the Site of the Proposed Development to reach Dublin Bay and cause significant effects, during both the Construction and Operational Phases, is excluded due to:</p> <ul style="list-style-type: none"> • The distance and consequent potential for dilution in the River Dodder and Dublin Bay. Surface water discharges would have to travel almost 17km along the River Dodder before discharging into Dublin Bay. • The potential for dilution in the surface water network during heavy rainfall events. <p>The potential for foul water generated at the Site of the Proposed Development to reach Dublin Bay and cause significant effects, during the Operational Phase, is excluded due to:</p> <ul style="list-style-type: none"> • The fact that the surface water hydrological link will only exist during rainfall events; • The potential for dilution in the surface water network during these rainfall events; • Effects on marine biodiversity and the Natura 2000 sites within Dublin Bay from the current operation of Ringsend WwTP are unlikely (see section 8.1.3 for more details).
Boosterstown Marsh (001205)	11.4 km	No – see entry for Lugmore Glen
Rye Water Valley/Carton (001398)	11.5 km	
North Dublin Bay (000206)	11.8 km	Yes – see entry for South Dublin Bay
Kilteel Wood (001394)	12.0 km	No – see entry for Lugmore Glen
Glenree Valley (001755)	12.7 km	
Ballybetagh Bog (001202)	12.8 km	
Dolphins, Dublin Docks (000201)	12.9 km	Yes – see entry for South Dublin Bay
Knocksink Wood (000725)	13.2 km	No – see entry for Lugmore Glen
Dingle Glen (001207)	13.4 km	
Poulaphouca Reservoir (000731)	14.2 km	
Santry Demesne (000178)	14.5 km	
Red Bog, Kildare (000397)	14.6 km	

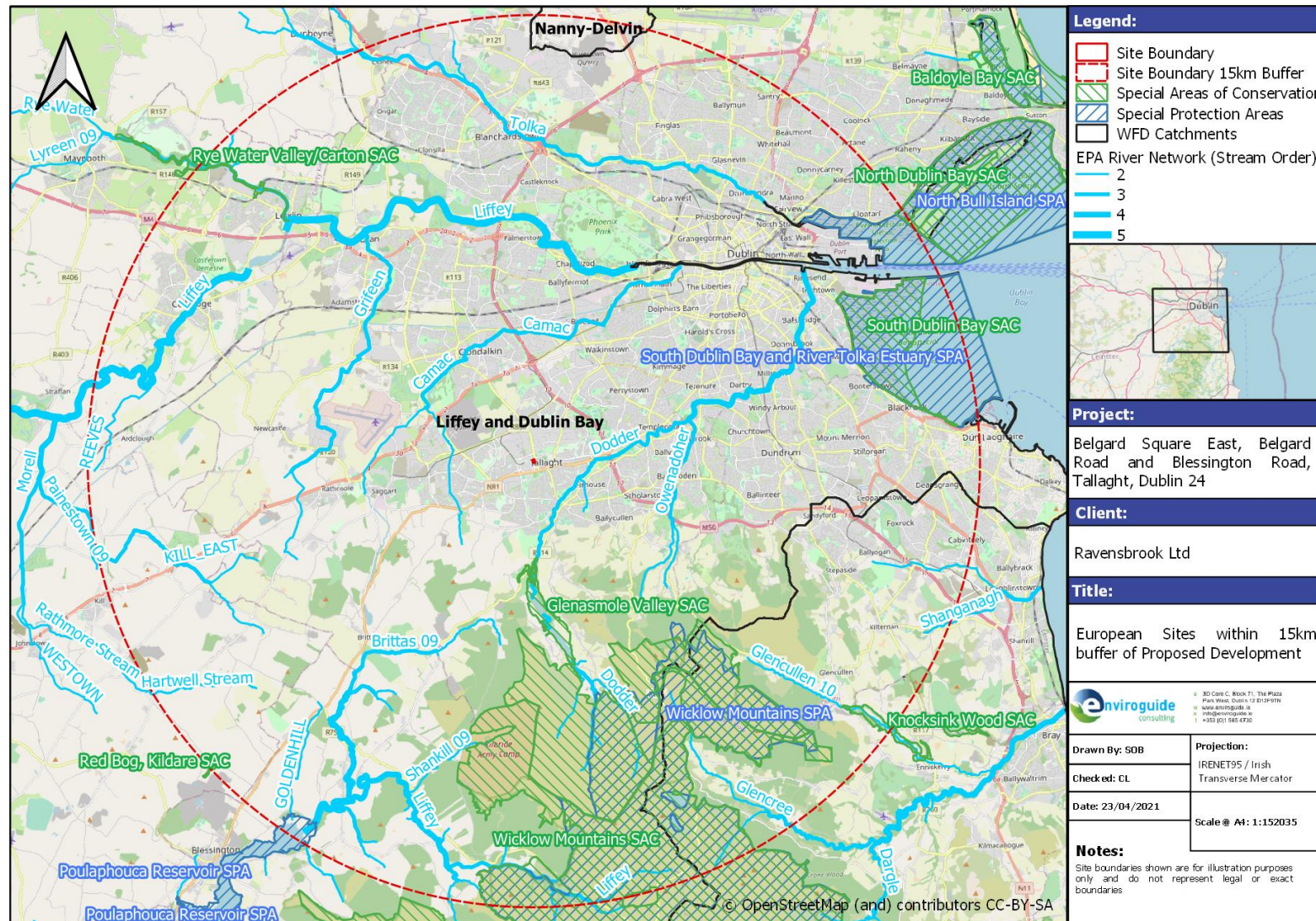


FIGURE 2. EUROPEAN SITES WITHIN 15KM OF THE PROPOSED DEVELOPMENT SITE.

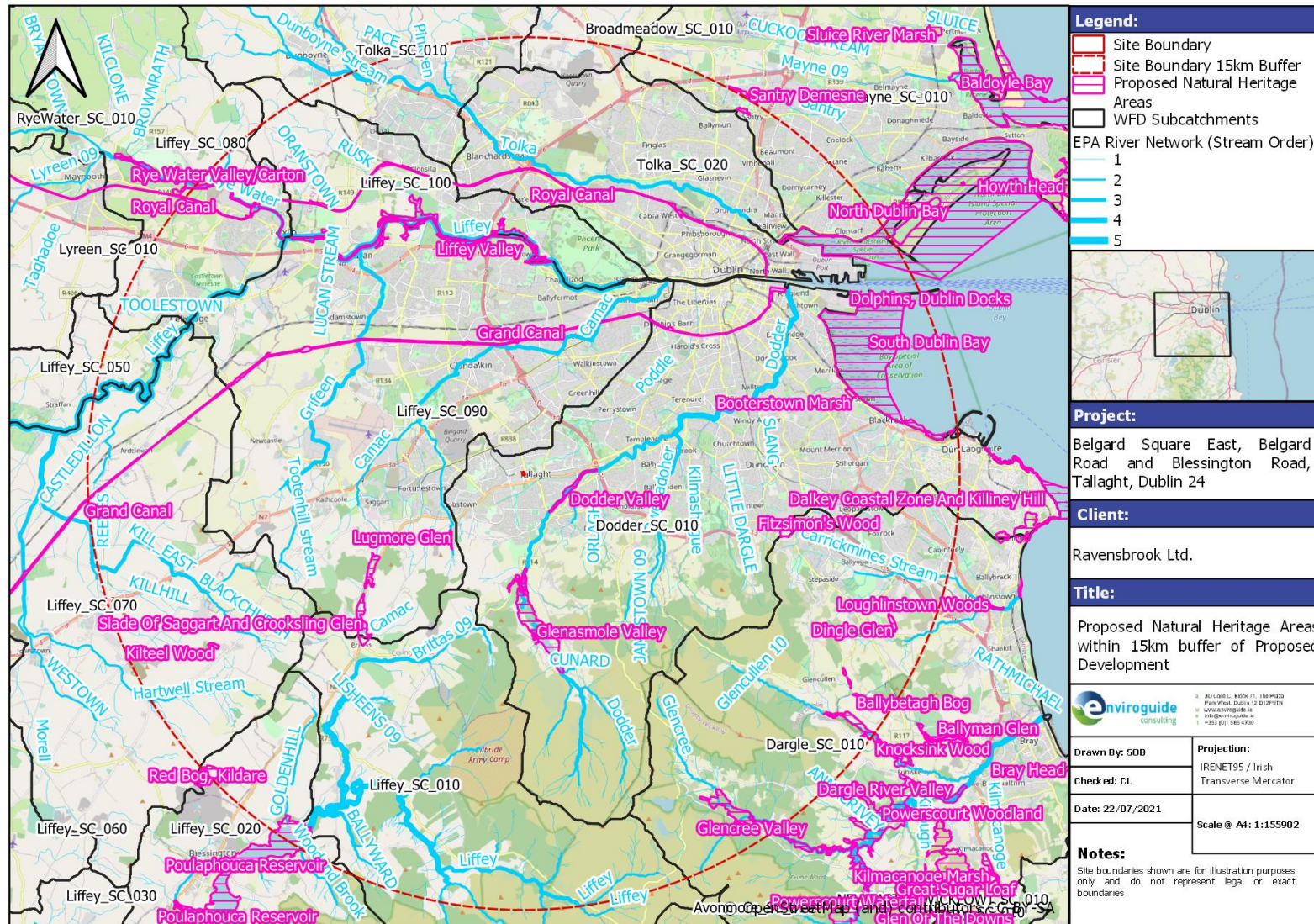


FIGURE 3. PROPOSED NATURAL HERITAGE AREAS WITHIN 15KM OF THE PROPOSED DEVELOPMENT SITE

5.3. Desk Study

5.3.1. Species and Species Groups

The Site of the Proposed Development is located within the Ordnance Survey Ireland National Grid 2km square O02Y. Species records from the National Biodiversity Data Centre (NBDC) online database for this grid square was studied for the presence of rare or protected flora and fauna. The following records were excluded:

- Records greater than 20 years old;
- Species records with no designation or conservation status (excluding mammals and birds).

In addition, data from various sources (e.g. Inland Fisheries Ireland) were used to determine the presence of species in the vicinity of the Proposed Development. The following sections outline the results of this assessment.

5.3.1.1. Flora

Rare and Protected Flora

Species records from the NBDC online database were studied for the presence of rare or protected flora and no records were found. There are no records for protected bryophytes within the area².

5.3.1.2. Invasive Plant Species

The NBDC have records (dated within the last 20 years) of four medium impact invasive plant species within the 2km (O02Y) grid square (Table 2).

TABLE 2. INVASIVE PLANT SPECIES WITHIN THE 2KM (O02Y) GRID SQUARE. THE RECORDS ARE DATED WITHIN THE LAST 20 YEARS AND ARE PROVIDED BY THE NBDC.

Name	Date of last record	Database	Legal status / Designation
American Skunk-cabbage <i>Lysichiton americanus</i>	05/04/2020	National Invasive Species Database	- Medium Impact Invasive - EU Regulation No. 1143/2014 - Regulation S.I. 477 (Ireland)
Butterfly-bush <i>Buddleja davidii</i>	21/09/2017	National Invasive Species Database	- Medium Impact Invasive
Sycamore <i>Acer pseudoplatanus</i>	21/09/2017	National Invasive Species Database	- Medium Impact Invasive
Three-cornered Garlic <i>Allium triquetrum</i>	21/04/2020	National Invasive Species Database	- Medium Impact Invasive - Regulation S.I. 477 (Ireland)

5.3.1.3. Mammals (excl. bats)

Records for terrestrial mammals were retrieved from the NBDC online database. Table 3 lists these species, their last record date and summarises their legal status/designation. Two native terrestrial mammals were recorded within the 2km grid square (O02Y), one of which, the West European Hedgehog, is afforded protection under the Wildlife (Amendment) Act, 2000. The Hedgehog record refers to a sighting of a live animal in Aylesbury, Old Bawn, Tallaght in 2017.

² <https://dahg.maps.arcgis.com/apps/webappviewer/index.html?id=71f8df33693f48edbb70369d7fb26b7e>

TABLE 3. TERRESTRIAL MAMMAL SPECIES WITHIN THE 2KM (O02Y) GRID SQUARE. THE RECORDS ARE DATED WITHIN THE LAST 20 YEARS AND ARE PROVIDED BY THE NBDC.

Name	Date of last record	Database	Legal Status / Designation
European Rabbit (<i>Oryctolagus cuniculus</i>)	06/01/2016	Mammals of Ireland 2016-2025	- Medium Impact Invasive
Red Fox (<i>Vulpes vulpes</i>)	15/09/2017	Mammals of Ireland 2016-2025	- n/a
West European Hedgehog (<i>Erinaceus europaeus</i>)	23/07/2017	Mammals of Ireland 2016-2025	- Wildlife (Amendment) Act, 2000

5.3.1.4. Bats

There are records for one bat species within the 2km grid square associated with the Site (O02Y), namely Daubenton's Bat *Myotis daubentonii*. The NBDC maps landscape suitability for bats based on Lundy et al. (2011). The index ranges from 0 to 100 with 0 being least favourable and 100 most favourable for bats. The overall habitat suitability index for bats in the area is 24.67.

5.3.1.5. Birds

A total of 64 bird species have been recorded within the 2km grid square by the NBDC. Of these, 7 are listed as *Red* and 18 are listed as *Amber* in *Birds of Conservation Concern in Ireland 2020-2026* (Gilbert et al., 2021).

Red listed species include:

Kestrel *Falco tinnunculus*
 Snipe *Gallinago gallinago*
 Woodcock *Scolopax rusticola*
 Grey Wagtail *Motacilla cinerea*
 Meadow Pipit *Anthus pratensis*
 Lapwing *Vanellus vanellus*
 Redwing *Turdus iliacus*

Amber listed species include:

Black-headed Gull *Larus ridibundus*
 Brambling *Fringilla montifringilla*
 Coot *Fulica atra*
 Kingfisher *Alcedo atthis*
 Linnet *Carduelis cannabina*
 Starling *Sturnus vulgaris*
 Teal *Anas crecca*
 Greenfinch *Carduelis chloris*
 Goldcrest *Regulus regulus*
 Herring Gull *Larus argentatus*
 House Martin *Delichon urbicum*
 House Sparrow *Passer domesticus*

Lesser Black-backed Gull *Larus fuscus*
Mallard *Anas platyrhynchos*
Common Gull *Larus canus*
Mute Swan *Cygnus olor*
Tufted Duck *Aythya fuligula*
Willow Warbler *Phylloscopus trochilus*

5.3.1.6. Fish

There were no fish species recorded within the 2km grid square by the NBDC.

Salmonidae

There are three species of salmonid associated with freshwater habitats in Ireland, namely Atlantic Salmon (*Salmo salar*), Brown Trout (*Salmo trutta*) and Arctic Char (*Salvelinus alpinus*), the latter of which is only associated with lake waterbodies in Ireland. The Atlantic salmon is listed as an Annex II species under the Habitat Directive. Brown Trout was recorded at the *Knocklyon_A* survey site, approximately 2km downstream of the Site, in 2016 (Kelly et al., 2017).

Petromyzonidae (Lamprey sp.)

There are three lamprey species native to Ireland including Sea Lamprey (*Petromyzon marinus*), River Lamprey (*Lampetra fluviatilis*) and Brook Lamprey (*Lampetra planeri*). All three species are listed under Annex II of the Habitats Directive and are protected by the Fisheries Acts 1959 to 2006. Lamprey sp. were recorded at the *Knocklyon_A* survey site in 2014 (Kelly et al., 2017).

European eel (*Anguilla anguilla*)

European eel is a red listed species³ and are currently considered to be one of the most threatened fish species in Ireland (King et al. 2011). European Eel was recorded at the *Knocklyon_A* survey site in 2013 (Kelly et al., 2017).

There are no waterbodies within the Site of the Proposed Development itself.

5.3.1.7. Amphibians

There are records of the Common Frog (*Rana temporaria*) and no records of the Smooth Newt (*Lissotriton vulgaris*) within the 2km (O02Y) grid square. No suitable habitat exists for either species at the Site, with no pooling, ditches or wet grassland type habitats present. The Site is considered unsuitable for amphibian usage and therefore these species are not assessed further in this report.

5.3.1.8. Invertebrates

There are no NBDC records of White-clawed crayfish (*Austropotamobius pallipes*) within any of the grid squares encompassing the Site of the Proposed Development.

³ The status of a species is designated by the relevant authorities as Red, Amber or Green. Red list species range from vulnerable to extinct, Amber list species with unfavourable conservation status or declining population, and Green list species are those which are not currently of conservation concern.

There are no records of Marsh Fritillary butterfly (*Euphydryas aurinia*) within the last 30 years for the 2km (O02Y) grid square and no individuals of this species or its associated food plant; devil's bit scabious (*Succisa pratensis*), were recorded during the field surveys. In addition, the habitats present at the Site are deemed unsuitable for this species and therefore it is not assessed further in this report.

Three Near Threatened species of bee have been recorded within the 2km grid:

Large Red-Tailed Bumblebee *Bombus lapidarius*

Willughby's Leafcutter Bee *Megachile willughbiella*

Moss Carder Bee *Bombus muscorum*

5.3.1.9. Other species and species groups

There are no records of common lizard *Zootoca vivipara* within the 2km grid square (O02Y). In addition, this species is associated with coastal and heathland habitats, but also locally in rural gardens, stone walls and roadside verges (King et al., 2011). The habitat at the Site of the Proposed Development is not considered suitable for this species.

5.4. Field Surveys

5.4.1. Habitats & Flora

The habitats encountered and identified at the Site of the Proposed Development have been classified and coded as per Fossitt (2000). These are described below.

5.4.1.1. Buildings and Artificial Surfaces (BL3)

Buildings and artificial surfaces habitat is predominant at the Site of the Proposed Development, as this Site is a vacant and derelict carpark. Belgard Square East, Belgard Road and Blessington Road also lie within the boundary of the Site.

5.4.1.2. Recolonising Bare Ground (ED3)

The northern half of the Site, along with a section in the southeast, is comprised of low biodiversity recolonising bare ground, with species such as Dock (*Rumex sp.*), Red Clover (*Trifolium pratense*), Dandelion (*Taraxacum sp.*), and Hemp Agrimony (*Eupatorium cannabinum*) recorded. Small stands of Butterfly Bush (*Buddleia davidii*) are scattered heavily throughout this habitat. There are also a small number of young Silver Birch (*Betula pendula*) and Italian Alder (*Alnus cordata*) saplings.

5.4.1.3. Scrub (WS1)

The margins of the Site, particularly along the south and north boundaries, contain scrub habitat. The species observed within this habitat include Italian Alder, Sycamore (*Acer pseudoplatanus*), Northern Maple (*Acer platanoides*), Bramble (*Rubus fruticosus agg.*), Ash (*Fraxinus excelsior*), and Dog Rose (*Rosa canina*). Large-leaved Lime (*Tilia platyphyllos*) was recorded within the southwest corner of the Site.

5.4.1.4. Amenity Grassland (improved) (GA2)

The habitat was observed in small strips along Belgard Square East, Belgard Road and Blessington Road, and floral species observed within these patches include Daisy (*Bellis perennis*), Dandelion, and managed Sycamore.

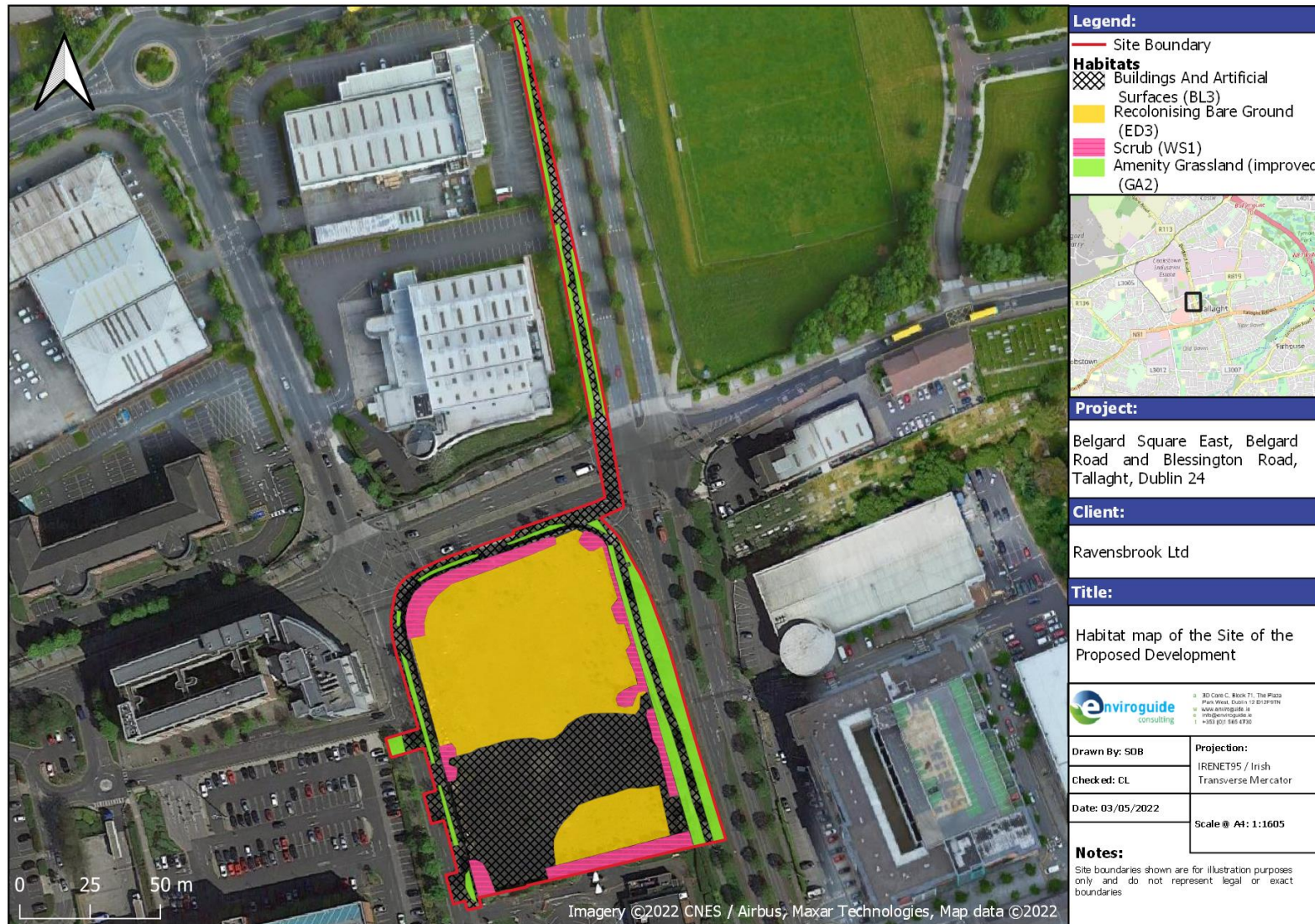


FIGURE 4. HABITATS AT THE SITE OF THE PROPOSED DEVELOPMENT.

5.4.1.5. ***Invasive Plant Species***

No significant species of non-native/invasive plant were recorded at the Site during the survey on the 11th of October 2021. Non-native species in Ireland to date have been assessed by Kelly, O' Flynn and Maguire (2013) and attributed an impact rating of either 'High', 'Medium' or 'Low' impact based on a number of factors that determine a species' potential to become established in this country and have significant impacts.

Two 'Medium Impact' invasive plant species were recorded at the Site.

- Butterfly Bush *Buddleja davidii* was found most predominantly along the margins of the Site in large stands, within the recolonising bare ground habitat in smaller stands, and growing from cracks in the hardstanding area. Butterfly Bush is an 'Amber-list' species' according to Invasive Species Ireland, which is a Medium Impact species that may pose a risk to conservation goals (Kelly et al., 2013). However, the risk of Butterfly Bush is "uncertain", as its impact on conservation goals remains uncertain due to lack of data showing impact (or lack of impact).



FIGURE 5. LARGE STAND OF BUTTERFLY BUSH OBSERVED ON SITE



FIGURE 6. SMALLER STANDS OF BUTTERFLY BUSH RECORDED THROUGHOUT THE SITE

- Sycamore *Acer pseudoplatanus* was observed growing within the scrub habitat on Site, with young saplings recorded dispersed throughout the Site.



FIGURE 7 SYCAMORE OBSERVED ON SITE

No 'High Impact' invasive species listed in the Third Schedule of *European Communities (Birds and Natural Habitats) Regulations 2011* (SI 477 of 2011, as amended) e.g. Japanese Knotweed, were recorded at the Site during the survey.

5.4.2. Bats

A low rate of bat activity was recorded during both the May 2021 and May 2022 bat surveys, both of which were undertaken in ambient weather conditions – possibly due to the highly urbanised surrounding landscape and lack of suitable habitat within the wider landscape. Optimum bat roosting, commuting and foraging routes and opportunities are very limited. One Leisler's Bat was recorded passing over the Site during the entirety of the 9th of May 2021 survey, and one Leisler's Bat and two passes of Common Pipistrelle were recorded on the 16th of May 2022.

5.4.3. Birds

The bird species recorded on Site during the 11th of October 2021 survey are recorded in Table 5.

TABLE 4 BIRD SPECIES RECORDED ON SITE - 11TH OCTOBER 2021

Species	Conservation Concern	Observations/Notes
House Sparrow <i>Passer domesticus</i>	Amber	One male individual observed foraging within recolonising bare ground habitat
Herring Gull <i>Larus argentatus</i>	Amber	Several individuals observed and heard calling south of the Site within the adjacent restaurant's car park
Magpie <i>Pica pica</i>	Green	One individual heard calling east of the Site
Rook <i>Corvus frugilegus</i>	Green	One individual observed flying over the Site from north to south
Wren <i>Troglodytes troglodytes</i>	Green	One individual recorded within the scrub habitat along the west boundary of the Site
Blackbird <i>Turdus merula</i>	Green	One individual heard calling within the scrub habitat along the east boundary of the Site

5.4.4. Mammals (excl. bats)

No mammals were recorded within the Site of the Proposed Development. As the majority of the Site is comprised of hard standing, it is unlikely that any mammal species would frequent or utilise the Site of the Proposed Development.

5.4.5. Invertebrates

One High Impact invasive invertebrate species was recorded on Site, namely the Harlequin Ladybird *Harmonia axyridis*. Only one individual was observed on Site.

5.5. Designated sites, habitat and species evaluation

Fauna which have the potential to utilise habitat within the immediate area of the Proposed Development, or for which records exist in the wider area, have been evaluated below in Table 5 for their conservation importance. In addition, designated sites and habitats have been evaluated. This evaluation follows the Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009b). The rationale behind these evaluations is also provided. The term 'ecological receptors' is used when impacts upon them are likely.

TABLE 5. EVALUATION OF DESIGNATED SITES, HABITATS AND FAUNA RECORDED WITHIN THE SURROUNDING AREA.

Designated Sites/Species/Habitats			
Designated Sites			
SACs & SPAs	International Importance	No	Significant effects on Natura 2000 sites ruled out in AA Screening.
pNHAs	National Importance	Yes	Refer to Table 1
Dublin Bay Biosphere			
Habitats			
Buildings and artificial surfaces (BL3)	Local importance (lower value)	No	Man-made habitat of low biodiversity value.
Recolonising Bare Ground (ED3)	Local importance (lower value)	No	Low diversity habitat of low biodiversity value.
Scrub (WS1)	Local importance (lower value)	No	Low diversity habitat of low biodiversity value.
Amenity Grassland (improved) (GA2)			
Fauna			
European Rabbit <i>Oryctolagus cuniculus</i>	National Importance	No	No suitable habitat present on Site.
Red Fox <i>Vulpes vulpes</i>	Local importance (lower value)	No	No suitable habitat present on Site.
Hedgehog <i>Erinaceus europaeus</i>	National Importance	No	Little to no suitable habitat present within the Site lands. Species unlikely to utilize Site due to its location and nature.
Bat Assemblage	Local importance (lower value)	No	Low bat activity recorded, with two species of bat recorded flying over the Site during the May 2021 and May 2022 bat surveys
Bird Assemblage	Local importance (lower value)	No	A small number of bird species were recorded foraging on Site
Common Frog	Local importance (lower value)	No	No suitable habitat at the Site for this species (e.g. ditches, ponds).
Brown trout <i>Salmo trutta</i> ; European Eel <i>Anguilla anguilla</i> ;	County Importance	Yes	Hydrological connection to the River Dodder

6. POTENTIAL IMPACTS OF THE PROPOSED DEVELOPMENT

As per the relevant guidelines, likely significant effects have been assessed for Key Ecological Receptors, as listed in Table 5. An impact is considered to be significant if it is predicted to affect the integrity or conservation status of a KER at a given geographical scale. Potential impacts to local wildlife that may utilise the Site are also predicted below. All impacts are described in the absence of mitigation.

6.1. Construction Phase

6.1.1. Impacts on Proposed Natural Heritage Areas

6.1.1.1. *Dodder Valley (000991)*

During both the Construction and Operational Phases of the Proposed Development, there is potential for *negative, short-term, moderate* impacts on this pNHA due to surface water discharge into the River Dodder. There is potential for surface water run-off containing silt and/or pollutants from the Site to negatively impact these sites and the habitats, flora and fauna within them.

6.1.2. Impacts on Habitats

Given the relatively poor quality of the man-made and scrub habitats currently present at the Site, and the general lack of vegetation with the exception of non-native pioneer species, i.e., Butterfly-bush, it is deemed that the Proposed Development *will not have any significant adverse impacts* on vegetative habitats or flora at the Site.

6.1.3. Impacts on fauna

6.1.3.1. *Mammals (excluding bats)*

Given the general lack of suitable habitat present at the Site, negative impacts on mammals that may be present at or within the environs of the Site of the Proposed Development, as a result of removal of habitat, are considered unlikely.

Disturbance of species due to noise and dust generated during the Construction Phase, although unlikely, is possible and, as such, a precautionary approach is adopted with these disturbances representing potential *negative, short-term, slight* impacts at a *local scale*.

6.1.3.2. *Bats*

Noise generated during the Construction Phase has the potential to cause *negative, short-term, slight impacts* in the form of disturbance to mammals at a local level, potentially including bats should they roost in the surrounding landscape.

6.1.3.3. *Birds*

There will be some loss of habitat for birds at the Site of the Proposed Development through the removal of vegetation at the Site, and disturbance of species during the Construction Phase is possible. This could have a *negative, permanent, moderate* impact on birds in the locality.

The increased noise and dust levels associated with the Construction Phase of the Proposed Development may have the potential to cause *negative, short-term, slight impacts* to local bird populations.

6.1.3.4. Aquatic Fauna

Surface water from the Proposed Development will discharge into the existing 225mm diameter public storm drain located east of the Site. According to the Greater Strategic Dublin Drainage Study, the Site is within S2009 – Dodder Owendoher River Storm Level 2 Catchment. Therefore, it is likely that surface water flows from the Site will discharge into the Dodder River.

Surface water discharges associated with the Construction Phase of the Proposed Development may have the potential to cause *negative, short-term, moderate impacts* to aquatic fauna within the River Dodder in the absence of suitable mitigation.

6.2. Operational Phase

6.2.1. Impacts on Proposed Natural Heritage Areas

6.2.1.1. Dodder Valley (000991)

Negative impacts as a result of the Operational Phase of the Proposed Development on this pNHA are not anticipated due to the surface water management measures incorporated into the project design. Mandatory Sustainable Urban Drainage Systems (SuDS) measures have been incorporated into the design to treat and minimise surface water runoff from the site.

6.2.2. Impacts on Habitats

The loss of habitat at the site of the Proposed Development has the potential to negatively impact the local bird and invertebrate species. The planting proposal in the landscaping design for the Proposed Development includes native and non-native tree species, with dense, native hedgerow to be planted along the south boundary of the Site, providing potential nesting, commuting, and foraging habitat for local wildlife. Flowering tree, shrub, perennial and wildflower habitats have been included to promote biodiversity via pollinator-friendly species, such as Juneberry Tree (*Amelanchier x grandiflora* 'Robin Hill') and Lime (*Tilia cordata* 'Greenspire'), and will attract insects and birdlife. The planting of native flora will improve local biodiversity and increase insect abundance. This will provide additional food for bats and birds at the Site. Bird and bat boxes, along with insect hotels and wildflower and biodiverse roofing, will provide habitat for local pollinators and wildlife. This will result in a *positive, permanent, moderate* impact on a *local* scale.

6.2.3. Impacts on Fauna

6.2.3.1. Bats

During the Operational Phase, there is potential for disturbance to bats utilising the Site in general through light pollution during the Operational Phase. Given the urban context of the Site, this could have a *negative, permanent, slight* impact on bats in the locality. In addition, there is potential for a *negative, permanent, slight* impact on bats in the locality through the loss of foraging resources.

The lighting and layout of the Proposed Development will minimise light-spill onto habitats used by the local bat population foraging or commuting. This can be achieved by ensuring that the design of lighting accords with guidelines presented in the Bat Conservation Trust & Institute of Lighting Engineers 'Bats and Lighting in the UK - Bats and Built Environment Series', the Bat Conservation Trust 'Artificial Lighting and Wildlife Interim Guidance' and the Bat Conservation Trust 'Statement on the impact and design of artificial light on bats'. Therefore, where possible, the lighting scheme will include the following:

- Lighting will only be installed where necessary for public safety in known Bat Foraging and Roosting locations. These lights have been designed and selected with specific shutters and filters to minimise any potential for back spills into the sensitive locations while still providing the primary function of safely lighting the pedestrian routes.
- Reflectance's – Downward lighting can be reflected from bright surfaces. To minimize bat disturbance, the design avoids the use of bright surfaces and incorporates darker colour lamp heads and poles to reduce reflectance. Only luminaires with an upward light ratio of 0% and with good optical control to be used.
- Lighting controls and dimming shall be utilised for post-curfew times.
- Shielding of Luminaires & Light - To minimize bat disturbance, the design avoids the use of upward lighting by shielding or by downward directional focus. i.e no upward tilt.
- Type of Light – To minimize bat disturbance, the design avoids the use of strong UV lighting. The lighting design is based on the use of LED lighting which has minimal or no UV output of significance. Warmer 2700°K LED lighting will be utilized for amenity areas, as the warmer colour temperatures with peak wavelengths greater than 550nm (~3000°K) cause less impacts on bats.

This will result in a *neutral* impact on bats within the vicinity of the Proposed Development.

The planting proposal includes native and non-native tree species, with native hedgerow to be planted along the south boundary of the Site, which will provide commuting and foraging habitats for local bats. Bat boxes have also been incorporated within the landscape design to offer roosting habitat. Pollinator-friendly tree, shrub and perennial species will also attract foraging resources for local bats. This will result in a *positive, permanent, moderate* impact on bats in the surrounding landscape.

6.2.3.2. Birds

The height of the building, coupled with the use of glass in the proposed design has the potential to cause *negative, permanent, moderate* impacts on birds due to collisions. The design proposal stipulates building heights will range from 6-12 storeys. Glass in buildings can pose a potentially lethal threat to bird species. This is a result of birds being unable to distinguish between reflections in glass and the natural environment (resulting in birds flying into windows that appear to be trees or sky), and their inability to perceive clear glass as a solid object (Toronto City Bird-Friendly Best Practices: Glass). Birds will strike clear glass while attempting to reach habitat and sky seen through corridors, windows positioned opposite each other in a room, ground floor lobbies, glass balconies or glass corners. The impact of striking a reflective or clear window in full flight often results in death. In general, the lower stories of buildings are the most dangerous because they are at the same level as trees and other landscape features that attract birds. Nevertheless, monitoring programs assessing setbacks and roofs of tall buildings are finding that birds also collide with higher levels especially during

bad weather at night. It is especially important that glass near rooftop gardens, green roofs, and other features such as green walls, is treated to be bird friendly.

However, the Proposed Development entails the construction of 6-12 storey structures, and as such, the risk of migrating birds colliding with the structures due to their height is deemed to be negligible as migrating species tend to commute far above this level with Swans and Geese flying up to 2500ft (ca.750m) during migration along Irish Coasts (Irish Aviation Authority, 2020). Birds that fly over the Site to commute between ex-situ feeding grounds at various locations would fly lower than this, however, once the proposed structure is made of visible materials i.e., not entirely comprised of reflective materials such as glass, the birds would simply fly around or over them.

The physical location of buildings and structures can also affect the likelihood of bird collisions. Structures placed on or near areas regularly used by large numbers of feeding, breeding, or roosting birds, or on local flight paths, such as those between foraging and roosting areas can present a higher risk of collision. The Site itself is not located in a sensitive area in terms of bird flight paths i.e., it is not located along the coast, or near any Special Protected Areas (SPAs) designated for wetland bird populations and is in itself does not offer suitable ex-situ feeding/roosting habitat for any such species, as the most dominant habitat on Site is built land.

In general birds will fly at a height that is higher than the tallest obstruction in their flightpath. Birds on a daily commute to feed become very familiar with the topography of their flight paths and as a result few if any collisions occur. Birds which regularly fly over the Site will adapt to any changes to the nature of the Site including the topography. Therefore, it is considered that any bird species using the areas adjacent to the planning application site (i.e. South Dublin Bay and River Tolka Estuary SPA) will adapt to the changing nature of the site as the construction phase progresses and for this reason the risk of bird collisions is *negligible*.

The planting proposal includes native and non-native tree species, with native hedgerow to be planted along the south boundary of the Site, which will provide commuting, nesting and foraging habitats for birds in the vicinity of the Proposed Development. Pollinator-friendly tree, shrub and perennial species will also attract foraging resources for local birds. This will result in a *positive, permanent, moderate* impact on birds in the surrounding landscape.

6.2.3.3. Aquatic Fauna

No significant effects on fish species are anticipated during the Operational Phase. Mandatory SuDS measures have been incorporated into the design to treat and minimise surface water runoff from the site.

6.3. Do nothing impact

Under the do-nothing scenario, the Site would remain as is. The recolonisation of hard standing habitat by invasive and native flora is likely to increase in size and potentially offer suitable habitat for a small number of species, such as pollinating insects, although limited by the urban surrounds. Given the large proportion of built land on the Site, the ecological value of this Site is and would remain relatively low.

7. MITIGATION AND ENHANCEMENT MEASURES

7.1. Construction Phase

7.1.1. Proposed Natural Heritage Areas

The mitigation measures outlined below for surface water (section 7.1.2) will protect the Designated Sites downstream of the Site of the Proposed Development.

7.1.2. Aquatic Fauna & Surface Waters

The following measures set out below will protect surface waters throughout the Construction Phase:

7.1.2.1. *General Surface water mitigation measures*

- There will be no direct discharge to surface water courses or drains during the construction works. There are no open surface water courses at the site and the closest watercourse is the Jobstown Stream approximately 0.4km south of the site;
- Existing storm drain inlets which could receive stormwater from construction activities will be protected throughout the construction phase. Inlet protection will be installed before in advance of works commencing onsite;
- Run-off from the working site or any areas of exposed soil must be channelled and intercepted at regular intervals for discharge to silt-traps or lagoons. Surface water run-off will be treated using silt trays/settlement ponds and temporary interceptors and traps will be installed to treat water until such time as permanent drainage infrastructure is constructed;
- Any discharge of treated water to public surface water sewer will be under consent from Irish Water;
- Pumping of concrete will be monitored to ensure that there is no accidental discharge;
- There will be no mixer washings or excess concrete discharged on site. All excess concrete is to be removed from Site and all washout of concrete chutes to be captured in a tank which shall be removed offsite for disposal at an authorised waste facility;
- If cast-in-place concrete is required, all work must be carried out in the dry and effectively isolated from any existing onsite drainage networks and groundwater;
- A regular review of weather forecasts of extreme heavy rainfall will be conducted, and a contingency plan will be prepared for before and after such events to minimise any potential nuisances. As the risk of the break-out of silt laden run-off is higher during these weather conditions, no work will be carried out during such periods where possible;
- Any imported materials will be placed on site in designated locations and double handling will be avoided. Where this is not possible, designated temporary material storage areas will be used;
- Temporary storage areas will be located at least 10m away from any open drains which will be protected for the duration of the works or temporary diversion put in place;
- All containment and treatment facilities will be regularly inspected and maintained;
- Refuelling of plant during the Construction Phase will be carried out in accordance with standard best practice. Refuelling will only be carried out at designated, impermeable refuelling station locations onsite with appropriate containment in place. Each station

will be fully equipped for spill response and a specially trained and dedicated Environmental and Emergency Spill Response Team will be appointed before the commencement of works on site;

- Where possible any oil and lubricant changes and maintenance will take place offsite.
- Only emergency breakdown maintenance will be carried out on site. Drip trays and spill kits will be available on site to ensure that any spills from vehicles are contained and removed off site;
- All personnel working on site will be trained in pollution incident control response. Emergency silt control & spillage response procedures contained within the CEMP will ensure that appropriate information will be available on site outlining the spillage response procedures and a contingency plan to contain silt during an incident;
- Any other diesel, fuel or hydraulic oils stored on site will be stored in bunded storage tanks- the bunded area will have a volume of at least 110% of the volume of the stored materials as per best practice guidelines (Enterprise Ireland, BPGCS005);
- Portaloo's and/or containerised toilets and welfare units will be used to provide facilities for site personnel. All associated waste will be removed from site by a licenced waste disposal contractor and records will be maintained;
- In the unlikely event that material becomes contaminated for example by a fuel spill onsite or a burst / leaking hydraulic hose, a documented procedure for contaminated material will be prepared and adopted by the appointed contractor prior to excavation works commencing on site. These documents will detail how contaminated material will be appropriately handled during the excavation phase;
- Any wastewater generated on-site during the Construction Phase will be stored and disposed of appropriately by discharge to foul sewer under consent from Irish Water or tankering offsite. Under no circumstances will any untreated wastewater generated onsite (e.g., from equipment washing, road sweeping etc.) be released into nearby ditches or watercourses.

Contaminated soils if encountered will be segregated. If dewatering is required groundwater will be treated as required prior to discharge as agreed with Local Authority.

7.1.3. Birds

7.1.3.1. *Habitat removal*

Any clearance of vegetation or demolition will be carried out outside the main breeding season, i.e. 1st March to 31st August, in compliance with the Wildlife Act 2000. Should any vegetation removal be required during this period, this vegetation will be checked for bird nests, and if any are noted during this evaluation prior to removal, a derogation licence will be required from the NPWS. Similarly, a derogation licence will be required for the removal of nests if found during the pre-clearance survey. This would note the section of habitat that is a nest site, the precise location within the vegetation, the species of bird present; and also elaborate the means by which the birds would be protected prior to nest removal. If eggs have been laid, the nest will be protected until the young have fledged after which time the nest could be destroyed (under licence from the NPWS only). This would also require further compensatory measures including nesting sites for birds if practicable.

7.1.4. Reduction of noise and dust related impacts

Reduction of noise impacts

Short-term increases in disturbance levels as a direct result of human activity and through increased generation of noise during the Construction Phase can have a range of impacts depending upon the sensitivity of the ecological receptor, the nature and duration of the disturbance and its timing.

Noise generated during the Construction Phase of the Proposed Development could cause temporary disturbance to a number of faunal species in the vicinity of the Site of the Proposed Development. To mitigate this disturbance, the following measures will be implemented:

- Selection of plant with low inherent potential for generating noise.
- Siting of plant as far away from sensitive receptors as permitted by site constraints.
- Avoidance of unnecessary revving of engines and switch off plant items when not required.
- Keep plant machinery and vehicles adequately maintained and serviced.
- Proper balancing of plant items with rotating parts.
- Keep internal routes well maintained and avoid steep gradients.
- Minimise drop heights for materials or ensure a resilient material underlies.
- Use of alternative reversing alarm systems on plant machinery.
- Where noise originates from resonating body panels and cover plates, additional stiffening ribs or materials should be safely applied where appropriate.
- Limiting the hours during which site activities likely to create high levels of noise are permitted.
- Appointing a site representative responsible for matters relating to noise.
- Monitoring typical levels of noise during critical periods and at sensitive locations.

These measures will ensure that any noise disturbance to nesting birds or any other fauna species in the vicinity of the Site of the Proposed Development will be reduced to a minimum.

Reduction of dust related impacts

The following general dust control measures will be followed for the duration of the Construction Phase of the Proposed Development and will ensure no significant dust related impacts occur to nearby sensitive receptors including local faunal species.

- In situations where the source of dust is within 25m of sensitive receptors screens (permeable or semi-permeable) will be erected.
- Haulage vehicles transporting gravel and other similar materials to site will be covered by a tarpaulin or similar.
- Access and exit of vehicles will be restricted to certain access/exit points.
- Vehicle speed restrictions of 20km/hr will be in place.
- Bowsers will be available during periods of dry weather throughout the construction period.
- During dry and windy periods, and when there is a likelihood of dust nuisance, a bower will operate to ensure moisture content is high enough to increase the stability of the soil thereby reducing the amount of dust.

- Stockpiles will be stored in sheltered areas of the site, covered, and watered regularly or as needed if exposed during dry weather.
- Gravel should be used at site exit points to remove caked-on dirt from tyre tracks.
- Equipment should be washed at the end of each work day.
- Hard surfaced roads will be wet swept to remove any deposited materials.
- Unsurfaced roads will be restricted to essential traffic only.
- If practical, wheel-washing facilities should be located at all exits from the construction site.
- Dust production as a result of site activity will be minimised by regular cleaning of the site access roads using vacuum road sweepers and washers. Access roads should be cleaned at least 0.5km on either side of the approach roads to the access points.
- Public roads outside the site shall be regularly inspected for cleanliness, as a minimum daily, and cleaned as necessary. A road sweeper will be made available to ensure that public roads are kept free of debris.
- The frequency of cleaning will be determined by the site agent and is weather and activity dependent
- The height of stockpiles will be kept to a minimum and slopes should be gentle to avoid windblown soil dust.
- The following will be dampened during dry weather:
 - Unpaved areas subject to traffic and wind
 - Stockpiles
 - Areas where there will be loading and unloading of dust-generating materials
- Under no circumstances should wastewater from equipment, wheel or surface cleaning enter the surface water drainage network.

7.1.5. Invasive Species

7.1.5.1. *Butterfly Bush*

The following is extracted from NRA (2010) guidelines:

Buddleia (also known as the butterfly bush) is a member of the *Buddlejaceae* family. It is very fast growing and can reach 2m in its first year, producing flowers and setting seed.

It colonises bare ground very rapidly and can quickly form mono-typic stands.

As buddleia is a plant that favours disturbed sites, physical grubbing of plants can provide ideal conditions for the germination of seeds. Care needs to be taken to ensure revegetation of controlled areas is undertaken swiftly. The branches of buddleia are capable of rooting as cuttings, so care should also be taken to ensure material is disposed of in a manner to avoid this risk.

Physical Control

Management methods such as digging it out are applicable only to minor infestations at the initial stage of invasion. Hand-picking of young plants is feasible but should be undertaken with care to avoid soil disturbance which can give rise to a flush of new seedling. Grubbing of mature stands as a sole attempt at control is not recommended for the same reason. After uprooting, it is essential to plant the ground in order to prevent a flush of new seedling growth.

When it is cut, Buddleia grows back from the stump very vigorously. Mowing of young plants does not provide control as they re-sprout with vigour. Where removal of mature plants is not feasible in the short term, the flower heads should be cut off in June before seed set.

Chemical Control

Recommended practice for the application of herbicides requires cutting back of plants to a basal stump during active growth (late spring to early summer) which is then treated (brushed on) immediately with a systemic weed killer mix (Starr et al, 2003). Foliar application of triclopyr or glyphosate may be adequate for limited infestations of younger plants but should be followed up at 6 monthly intervals. At this point it must be restressed that all Plant Protection Products must be used in accordance with the product label and with Good Plant Protection Practice as prescribed in the European Communities (Authorization, Placing on the Market, Use and Control of Plant Protection Products) Regulations, 2003 (S.I. No. 83 of 2003). Again, it should be noted that it is an offence to use Plant Protection Products in a manner other than that specified on the label. The methods just outlined are not in accordance with the product label and so it will be necessary to discuss the use of such methods with the Pesticides Control Service with a view to seeking approval under the derogation procedures provided under the Plant Protection Regulations.

As there are several large stands of Butterfly Bush on Site, a combination of physical and chemical control will be utilised for effective control by cutting these plants to a basal stump during active growth (late spring to early summer) and immediately treating the total cut surface by brushing with herbicide. Monitoring will be required and retreatment, as necessary.

7.1.6. Biosecurity

The following will be adhered to, to avoid the introduction of invasive species to the Proposed Development site.

- Any material required on the site will be sourced from a stock that has been screened for the presence of any invasive species by a suitably qualified ecologist and where it is confirmed that none are present.
- All machinery will be thoroughly cleaned and disinfected prior to arrival on site to prevent the spread of invasive species.

7.2. Operational Phase

As both the landscape design and lighting plan of the Proposed Development have incorporated wildlife-friendly planting schemes and bat-sensitive measures into the project design, no further mitigation or enhancement measures are recommended during the Operational Phase of the Proposed Development.

8. CUMULATIVE IMPACTS

If the Proposed Development and existing or proposed projects or plans impact on the same KERs, there is potential to lead to cumulative impacts which could be of a higher level of significance. This applies to potential impacts on bats due to the combined loss of suitable commuting and/or foraging habitat in the locality and potential impacts on birds due to the combined loss of nesting or foraging habitat in the locality.

8.1.1. Existing granted planning permissions

There are several existing planning permissions on record in the area ranging from small-scale extensions and alterations to existing residential properties to some larger-scale developments. The larger-scale developments identified within the vicinity of the Proposed Development utilising the South Dublin County Council Planning Map are as follows:

Planning Application Reference: SD13A/0192/EP

Development to consist of the phased construction of two independent extensions to the existing shopping centre (The Square) with a total gross floor area of 21,490sq.m. (including floor area of car parking of 22,861sq.m.; the total development area is 44,351sq.m.) which will consist of the following: Plot A (North) - extension to the existing shopping centre with a total gross floor area of 15,806sq.m. and comprising an anchor retail unit (6,032sq.m.) and 8 no. retail units (ranging from 136sq.m. to 2,735sq.m. and totalling 7,456sq.m.) and associated ancillary accommodation and circulation areas over two levels accessed from a single level mall extending from the existing northern entrance (at Level 2) into the existing surface car park (removing 289 existing spaces); the northern extension ranges in height from 13.3 metres to 15.5 metres along the proposed new northern elevation; Plot A includes a six level multi-storey car park with 832 no. car spaces (22,861sq.m.) and ancillary accommodation ranging in height from 14.8 metres to 16.6 metres to the east of the site with access/egress from/to Belgard Square East with a revised road layout and circulation; the development on Plot A involves new and upgraded hard and soft landscaping which integrates with the existing public realm in the vicinity and which facilitates future proposals for a Transport Interchange by SDCC; service yards are proposed on the western portion of the site with access from realigned access road from Belgard Square West and on the eastern portion of the site with access from the entrance road which accesses the new multi-storey car park. Plot B (South) - Extension to the existing shopping centre at Level 3 with a total gross floor area of 5,684sq.m. and comprising a retail unit and associated ancillary accommodation; the proposed new retail unit will incorporate the existing units (U307 & U307A) totalling 415sq.m. to gain access to the existing mall at Level 3; the southern extension will result in the removal of 111 parking spaces and will have a parapet height of 12.3 metres to 13.5 metres above existing ground level at the southern elevation. Permission is also sought for all associated site and development works associated with the above developments including revisions to public realm, revisions to roads layout and footpaths, hard and soft landscaping, ESB substation and building mounted signage; the development proposed results in a net increase in parking associated with The Square of 432 spaces. **(Decision: Grant Extension of Duration of Permission. Decision Date: 21/11/2018).**

Planning Application Reference: SHD3ABP-303306-18

Development of 438 apartment units consisting of 158 no. 1 beds, 230 no. 2 beds and 50 no. 3 beds (total apartment units include 8 no. live/work units with a total c. 509 sqm work areas at ground floor) and c. 732 sqm of tenant/resident service amenities all within blocks A1, A2, A3 and B1. Block B2 to comprise a 403 bedspace student accommodation scheme and associated student amenity and staff facilities (c.815 sqm); childcare facility (c.380 sq.m) and external playing area (c. 242sq.m); 6 retail/commercial units (c. 632sq.m in total); security room (c.52sq.m); 107 car parking spaces below podium; 22 car parking spaces at surface level; 1227 bicycle parking spaces; 4 semi-private courtyards of c. 5,516sq.m; public plaza; public realm & landscaping (c.7,442sq.m). **(Decision: Grant Permission. Decision Date: 15/04/2019).**

Planning Application Reference: SD19A/0394

Mixed use commercial extension (9,956sq.m gross floor space) to the southern side of The Square Shopping Centre and a new public plaza and all associated site and development works including new signage; Level 1 - no changes; Level 2 - removal of southern mall entrance lobby and construction of new extension to existing Level 2 mall to include 6 retail units (2,611sq.m), a food hall/market hall area for multiple restaurant/food and beverage type uses with associated seating areas (2,041sq.m), a restaurant/cafe unit (67sq.m) and associated ancillary accommodation and circulation (1,534sq.m) and plant rooms (176sq.m) and introduction of new internal service corridor; Level 2 extension is replacing surface parking spaces (140) to the south of the shopping centre and an existing parking area (34 spaces) to the east of the proposed extension is to be reconfigured; creation of Level 3 entrance and creation of new public plaza to replace roof car park (111 spaces) and the new outdoor public plaza (0.74ha) will be used for multi-purpose events, civic and recreational uses and retail and food and beverage concessions involving temporary moveable structures erected on a seasonal basis; the creation of the new Level 3 entrance involves replacement of existing retail unit at Level 3 (Unit 307A) with mall area to include flexible kiosk type retail concession areas; 2 buildings accommodating 9 restaurant/bar units (3,324sq.m) and ancillary accommodation (175sq.m) and associated outdoor seating areas in the new plaza on south facing terraces; Level 4 - ancillary accommodation and service areas (28sq.m) on roof of 2 restaurants buildings within provision for screened plant areas and solar panels; the proposed extension has a maximum building height of 18 metres above existing ground levels; the extension is to replace and supersede the Plot B development previously permitted under Reg. Ref. SD13A/0192 (Bod Ref. PL06S.243280) which included a gross floor space of 5,684sq.m; the permitted northern extension (Plot A) remains unchanged. Permission is sought to amend Condition 3(a) of the Reg. Ref. SD13A/0132 (Bord Ref. PL06S.243280) to facilitate the construction of the proposed southern extension prior to the permitted northern extension (Plot A) subject to a phasing programme to be agreed. **(Decision: Grant Permission. Decision Date: 17/06/2020).**

Planning Application Reference: SD19A/0367

Demolition of existing commercial building (736sq.m) and construction of a single storey cafe/restaurant (79sq.m); single storey bicycle workshop building (32sq.m); improved public realm area to include seating; bicycle parking (60 spaces) and hard and soft landscaping and

all associated site and development works. **(Decision: Grant Permission. Decision Date: 27/01/2020).**

Planning Application Reference: SD208/0007

Construction of 133 affordable rental apartments with a community facility (c.12,918sq.m) in three blocks ranging from three to eight storeys with associated balconies/ terrace for each apartment and roof mounted solar panels linked by a single storey podium. • Block A (west-c. 5,162sq.m) accommodates 2 studios, 31 1-bed apartments and 28 2-bed apartments. • Block B (east – c 5,903sq.m) accommodates 1 studio, 33 1-bed apartments, 35 2-bed apartments, 1 3-bed apartment and the community facility. • Block C (south – 255sq.m) accommodates 2 3-bed, 3 storey maisonette apartments. • Podium (c.1598sq.m) accommodates 39 car parking spaces which includes 3 universal access spaces, 246 secure bicycle spaces, ESB substation and switch room, plant rooms, bins and other maintenance stores. • Ancillary site development works include the provision of pedestrian zip link/greenway, access roadway, footpaths, 24 bicycle spaces, hard and soft landscaping, new boundary treatments and a landscaped courtyard at podium level on SDCC lands west of the new link road connecting Fourth Avenue and Belgard Square North, Tallaght, Dublin 24. The proposal has undergone Appropriate Assessment Screening under the Habitats Directive (92/43/EEC) and screening for Environmental Impact Assessment under the EIA Directive 2014/52/EU, and the Planning Authority has concluded that there will be no real likelihood of significant effects on the environment arising from the proposed development and therefore an Environmental Impact Assessment is not required. **(Decision: Application Under Part 8. Application Date: 10/08/2020).**

Planning Application Reference: SD19A/0397

Change of use of existing open plan 997sq.m shell and core retail unit to the use as a spa/recreational facility to include swimming pool area; relaxation areas; treatment rooms; associated office/administration areas; changing facilities; internal dining/restaurant area; associated kitchen facilities; plant areas; associated ducting/extraction vents with associated elevational changes; connections to all services and site development works; new internal mezzanine floor to provide additional 602sq.m at new first floor level and on-street bicycle parking outside the building for 18 bicycles at the corner of Abberley Square and Abberley Square East. **(Decision: Grant Permission. Decision Date: 20/02/2020).**

Planning Application Reference: SD18A/0399

Internal modifications/reconfiguration to the mall area and reconfiguration of existing retail units and kiosks/concessions at Levels 1-3 of the existing shopping centre; revisions/modifications are as follows on a level by level basis; (1) Level 1, reconfiguration of the existing mall floor space and existing retail/kiosk units to provide a new kiosk zone (150sq.m); revisions to circulation areas involving the removal of stairs and escalator between Level 1 and Level 2 and provision of a new traveller between Level 1 and Level 2; (2) Level 2, reconfiguration of existing mall floor space and existing retail/kiosk units to provide a new kiosk zone (1073sq.m); revisions to circulation areas involving the removal of escalators between Level 2 and Level 3; (3) Level 3 formation of a new retail unit (38sq.m) and associated mall floor space (9sq.m) in the area created by the removal of the escalator between Levels 2 and 3; the kiosk zones on Level 1 and Level 2 will be flexible in terms of layout and all individual kiosks will be subject to design parameters set out in the Planning Report. The proposed use

of any new kiosks within the kiosk zones will be shops (Class 1), professional/financial services (Class 2) and food and beverage uses (including any associated seating areas). There will be no net increase in floor area for the provision of food and beverage uses within the overall centre. The revisions/modifications proposed will result in an increase of c.106sq.m. of gross floor space within the overall shopping centre arising from the various changes to the mall circulation areas and creation of floor space in areas currently void. Permission is also sought for all associated site and development works. **(Decision: Grant Permission. Decision Date: 11/01/2019).**

Planning Application Reference: SD20A/0105

Revisions to previously permitted internal modifications as approved under Ref. SD18A/0399 resulting in the reductions in the kiosk zone at Level 2 only by 196sq.m (from 1073sq.m to 877sq.m) to accommodate a new partially enclosed restaurant/café unit (196sq.m) and associated setting; the new restaurant and seating area will correspond with the footprint of the existing Units 260/262 and 263 and will contain associated facilities including a kitchen, front and rear counters, condiment unit, dining tables, chairs, booths and benches; associated signage and development works. **(Decision: Grant Permission. Decision Date: 16/07/2020).**

Planning Application Reference: SD20A/0145

Subdivision of the existing retail department store (Unit 116 - 5,396sq.m. - formerly Debenhams) to comprise 2 retail units - 116A (2,431sq.m) and 116B (2,270sq.m) and new service corridor (176sq.m) to the rear of the proposed unit 116B to provide access to the existing service yard; associated modifications including the removal of the existing mezzanine floor within Unit 116 (497sq.m); creation of new retail frontage within the internal mall and associated signage; revisions to existing retail Unit 117 (113sq.m) and 118 (102sq.m) to form a single amalgamated unit (169sq.m) and creation of additional mall floor space (47sq.m) arising from the unit reconfiguration; all associated site and development works including minor revisions to the layout of the existing service yard. **(Decision: Grant Permission. Decision Date: 12/08/2020).**

Planning Application Reference: SD18A/0399

Internal modifications/reconfiguration to the mall area and reconfiguration of existing retail units and kiosks/concessions at Levels 1-3 of the existing shopping centre; revisions/modifications are as follows on a level by level basis; (1) Level 1, reconfiguration of the existing mall floor space and existing retail/kiosk units to provide a new kiosk zone (150sq.m); revisions to circulation areas involving the removal of stairs and escalator between Level 1 and Level 2 and provision of a new traveller between Level 1 and Level 2; (2) Level 2, reconfiguration of existing mall floor space and existing retail/kiosk units to provide a new kiosk zone (1073sq.m); revisions to circulation areas involving the removal of escalators between Level 2 and Level 3; (3) Level 3 formation of a new retail unit (38sq.m) and associated mall floor space (9sq.m) in the area created by the removal of the escalator between Levels 2 and 3; the kiosk zones on Level 1 and Level 2 will be flexible in terms of layout and all individual kiosks will be subject to design parameters set out in the Planning Report. The proposed use of any new kiosks within the kiosk zones will be shops (Class 1), professional/financial services (Class 2) and food and beverage uses (including any associated seating areas). There will be no net increase in floor area for the provision of food and beverage uses within

the overall centre. The revisions/modifications proposed will result in an increase of c.106sq.m. of gross floor space within the overall shopping centre arising from the various changes to the mall circulation areas and creation of floor space in areas currently void. Permission is also sought for all associated site and development works. **(Decision: Grant Permission. Decision Date: 11/01/2019).**

Planning Application Reference: SD20A/0105

Revisions to previously permitted internal modifications as approved under Ref. SD18A/0399 resulting in the reductions in the kiosk zone at Level 2 only by 196sq.m (from 1073sq.m to 877sq.m) to accommodate a new partially enclosed restaurant/café unit (196sq.m) and associated setting; the new restaurant and seating area will correspond with the footprint of the existing Units 260/262 and 263 and will contain associated facilities including a kitchen, front and rear counters, condiment unit, dining tables, chairs, booths and benches; associated signage and development works. **(Decision: Grant Permission. Decision Date: 16/07/2020).**

Planning Application Reference: SD19A/0367

Demolition of existing commercial building (736sq.m) and construction of a single storey cafe/restaurant (79sq.m); single storey bicycle workshop building (32sq.m); improved public realm area to include seating; bicycle parking (60 spaces) and hard and soft landscaping and all associated site and development works. **(Decision: Grant Permission. Decision Date: 16/07/2020).**

Planning Application Reference: SD20A/0083

Works to the existing roof including installation of 173sq.m of solar pv panels; the erection of a new guardrail on the existing parapet to the perimeter of the roof; alteration to a portion of the existing roof from a pitched roof to a flat roof, installation of roof access hatches and all associated site development works. **(Decision: Grant Permission. Decision Date: 13/07/2020).**

Planning Application Reference: SD21A/0034

(i) Retention permission is sought for the mezzanine floor, stairwell and associated meeting room; (ii) (a) change of use of Unit F1 from cafe to car rental office and erection of partition walls to create a reception area, staff offices, staff mess area, wc, store room and staff canteen at ground floor; (b) upgrade works including replacement of mezzanine floor and stairwell; (c) installation of company signage to front of unit; and (ii) change of use from commercial car park to car rental and car share facility at basement level comprising of the following: (a) removal of 3 car parking spaces to provide for single storey car rental kiosk (28.82sq.m) comprising reception area; (b) redesignation of 30 commercial car parking spaces as car rental spaces (3 car club, 3 staff, 12 return and 12 rental spaces); (c) removal of 7 car parking spaces to provide circulation route, and car washing area (69.18sq.m) comprising 2 power washers, 1 wash pad connected to the existing petrol interceptor in the car park and car drying area. The car wash will connect to the mains water connection; (d) erection of company signage over entrance to car park from Belgard Square North; and (e) drainage and all associated site development and ancillary works necessary to facilitate development. **(Decision: Grant Permission & Grant Retention. Decision Date: 11/08/2021).**

Planning Application Reference: SD18A/0043

Sub-division and change of use of existing Unit F-05 from Hotel/Bar/Restaurant use at ground floor level (260sq.m) and mezzanine floor level (390sq.m) to office unit at ground floor level (225sq.m) and to NCBI Offices use and associated staff facilities at mezzanine floor level (390sq.m) through new access doors on the northern elevation of the existing building, new access stairs and existing lift to mezzanine floor level (35sq.m) at ground floor level, extend the mezzanine floor area (48sq.m) within the existing approved development Reg. Ref. No. SD02A/0392 and SD08A/0197. **(Decision: Grant Permission. Decision Date: 04/04/2018).**

Planning Application Reference: SD188/0010

A new Energy Centre to provide for a future district heating distribution network for the South Dublin District Heating Scheme Tallaght. The development will consist of: a new two storey Energy Centre building containing plant-rooms, office and welfare facilities, comprising an internal floor area of c.491sq.m incorporating an ESB substation. The site will be accessed using the existing vehicular entrance off Airton Road. The works also include 2 cylinder water tanks located to the west of the main centre both of which extend to c.5m diameter, and c.8m above FFL and 2 parking spaces for service vehicles along with general landscaping and site works. The preferred routes for Phase 1 of the underground distribution network of the South Dublin District Heating scheme is also set out in this proposal. **(Decision: Application Under Part 8. Application Date: 19/10/2018).**

Planning Application Reference: SD18A/0197

Construction of a new car park to provide 85 parking spaces, controlled taxi-rank, covered bicycle parking zone, new covered walkway located adjacent to the main hospital entrance together with alterations to the existing road, footpath, retaining wall & car park to provide an additional 5 disabled use bays including all associated site works. **(Decision: Grant Permission. Decision Date: 20/07/2018).**

Planning Application Reference: SHD3ABP-305763-19

Demolition of the existing industrial buildings on site (4,800sq.m) and the construction of 2 blocks comprising: 328 apartments (93 1-bed, 222 2-bed and 13 3-bed), ancillary residential support facilities and commercial floorspace measuring 31,147sq.m gross floor space above a single basement level measuring 5,861sq.m. Block A is a part-5 to part-7 storey (13,710sq.m) over basement block comprising 149 apartments with office space (222sq.m). Block B is a part-6 to part-9 storey (17,437sq.m) over basement block comprising 179 apartments, 2 double-height retail/commercial (Class 1/Class 2) units (354sq.m), a café/restaurant (313sq.m), a creche (360sq.m), internal residents amenity area (644sq.m) at ground floor including reception (37.7sq.m), residents lounge (91.3sq.m), private dining area (52.6sq.m), co-working space (45.5sq.m), games room (47.3sq.m), gym (80sq.m) and communal lounge (220sq.m) at 6th floor level. The development also consists of the provision of a landscaped courtyard; public plaza at the corner of Airton and Belgard Road; pedestrian access from Airton Road to the Technological University campus; balconies; landscaped roof terrace at 6th floor level (7th Storey) of Block B (671sq.m); 184 car parking spaces at basement level including 14 club car spaces, 10 disabled parking spaces and 4 creche parking spaces; 727 basement and surface bicycle parking spaces; 4 motorbike parking spaces; bin storage; boundary treatments; green roofs; hard and soft landscaping; plant; lighting;

Vodafone cabin sub-station; ESB sub-stations, switch rooms and generators; and all other associated site works above and below ground. **(Decision: Grant Permission. Decision Date: 20/02/2020).**

Planning Application Reference: SHD3ABP-308398-20

(i) Demolition of the existing industrial buildings, (ii) construction of: (a) 252 'build-to-rent' apartments in a two to nine storey development. Each apartment has associated private open space in the form of a ground floor terrace or a balcony and has access to 613sq.m of internal communal amenity space (including a concierge and management facilities, communal gym, flexible meeting rooms, library/co-working space, lounge, cinema/multimedia room and external covered game area); 1792sq.m of external communal amenity space at first and second floor levels; and a 65sq.m external covered communal amenity area at first floor level. The development is served by an under-croft carpark accessible from the south-western corner of the site providing a total of 73 parking spaces (including 58 standard spaces, 10 go-car spaces and 5 mobility impaired user parking spaces) and 500 bicycle spaces at ground floor level (372 resident spaces and 128 visitor spaces); and (b) 2 commercial units (comprising of a 95sq.m unit accommodating a café/restaurant and a 145sq.m unit accommodating Class 1, 2 and 8 uses as per the Planning and Development Regulations, 2001-2019, as amended) and a 275sq.m crèche, with associated 86sq.m play area, at ground floor level; (iii) road, junction and streetscape upgrade works along Fourth Avenue and Cookstown Road, including the installation a signalized junction at the intersection of Fourth Avenue and Cookstown Road; (iv) Construction of a temporary access road along the southern site boundary; and (v) associated site and infrastructural works are also proposed which include: foul and surface water drainage; attenuation tanks; lighting; landscaping; boundary treatment; plant areas; ESB substations; and all associated site development works. **(Decision: Grant Permission. Decision Date: 28/01/2021).**

Planning Application Reference: SD20A/0088

Replacement of a portion of the facade; removal of escalators and infill of voids at first floor (ex. mezzanine 93.5sq.m and second floor (ex. food courts 64sq.m); change of use of the mezzanine floor of the previously approved and constructed retail known as C4 to a Primary Care Centre (Class 8); change of use for ground floor, first floor and second floor of the previously approved and constructed retail unit known as Food Court, to a Primary Care Centre (Class 8); 6 external signage locations: (1) at unit C5 entrance (8.17sq.m); (2) at unit C4 entrance (9.36sq.m); (3) above first/second floors entrance (11.4sq.m); (4) to east elevation (6,25sq.m); (5) above unit C5 entrance (1.5sq.m); (6) above unit C4 entrance (0.75sq.m); the change of use area when completed will form an integral part of the previously approved Academic & Primary Care Centre (SD14A/0041, SD14A/0227, SD15A/0147, SD16A/0046 and SD19A/0158 at Tallaght Cross West, Tallaght, Dublin 24. **(Decision: Grant Permission. Decision Date: 16/07/2020).**

Planning Application Reference: SD18A/0219

(1) The construction of a new two storey c.23,283sq.m building for use as data storage facilities containing: data storage rooms, electrical & mechanical plant rooms and support areas including offices and welfare facilities, loading bays, back-up generators and water

storage tanks, mechanical plant at roof level is screened from view on all sides by permanent screens; (2) 27 car parking spaces; (3) amendment to previously permitted site landscaping, boundary treatment and associated site infrastructure (planning permission Reg. Ref. SD16A/0093) and (4) the demolition of a single storey building (floor area of 310sq.m). **(Decision: Grant Permission. Decision Date: 07/08/2018).**

Planning Application Reference: SD18A/0435

(1) A Sport Science, Health and Recreation Building containing a single storey sports hall and teaching accommodation and associated facilities arranged over two storey plus roof plant areas with a total floor area 3,175sq.m; grass playing pitch 140 x 90m with flood lighting; score boards; 1m high spectator barrier; 12m high x 25m wide ball catch nets behind goal posts and spectator seating; (2) external landscaped quadrangle; pedestrian areas; footpaths and landscaping; linking existing facilities with the development; building signage; 56 covered bicycle parking spaces; covered walkways and demolition of 46 existing car parking spaces and associated site works; (3) enhanced pedestrian crossing facilities at Greenhills Road access, comprising new raised entry treatment across access and pedestrian refuge island on Greenhills Road with associated road markings and traffic signs. The application site is centrally located within the ITT campus which is bounded by Belgard Road to the west, industrial buildings accessed off Airton Road to the north, Greenhills Road to the east and to the south by Old Blessington Road and the grounds of the Old Priory, Tallaght. **(Decision: Grant Permission. Decision Date: 08/02/2019).**

Planning Application Reference: SD19A/0152

(A) Construction of a 4 storey general teaching building (c.5,211sq.m) comprising teaching spaces, class kitchens and restaurant, lecture theatres, labs and computer rooms, breakout spaces and ancillary service area with roof level plant; (B) landscaping works including the provision of a kitchen garden, orchard and wildflower meadow with beehives; (C) 28 covered cycle parking spaces; (D) all associated site development, site services, landscaping and boundary treatment works. **(Decision: Grant Permission. Decision Date: 27/06/2019).**

These sites lie within 500m of the Proposed Development Site. Given the lack of natural habitat within the proposed sites and distance and urban buffer between the Proposed Development site and the above-mentioned permitted developments, it is concluded that there is no potential for in-combination effects to arise as a result of the Proposed Development on local ecology.

8.1.2. Relevant policies and plans

The following policies and plans were reviewed and considered for possible in-combination effects with the Proposed Development.

- Connecting with Nature – Draft Biodiversity Action Plan for South Dublin County 2020-2026
- South Dublin County Council Development Plan 2016-2022
- Draft South Dublin County Development Plan 2022-2028

The Connecting with Nature – Draft Biodiversity Action Plan for South Dublin County 2020-2026 is set out to protect and improve biodiversity, and as such will not result in negative in-combination effects with the Proposed Development. The South Dublin County Council

Development Plan 2016-2022 has directly addressed the protection of European Sites through specific policies (HCL12 Obj1-Obj2, HCL13 Obj1-Obj2), as will the South Dublin County Development Plan 2022-2028 (NCBH3). The relevant recommendations and mitigation measures have been integrated into the plan.

On examination of the above it is considered that there are no means for the Proposed Development to act in-combination with any plans or projects, that would cause any likely significant effects on any European sites.

In addition, sustainable development including SuDS measures for all new developments is inherent in the objectives of all development plans within the Greater Dublin Area.

8.1.3. Operation of Ringsend WwTP

In June 2018 Irish Water applied for (and subsequently received) planning permission for upgrade works to the Ringsend Wastewater Treatment (WwTP) facility. These are currently on-going and will increase the capacity of the facility from 1.6 million PE to 2.4 million PE. This plant upgrade will result in an overall reduction in the final effluent discharge of several parameters from the facility including BOD, suspended solids, ammonia, DIN and MRP. An Environmental Impact Assessment Report (EIAR) was submitted by Irish Water as part of this application. The EIAR contains sections relating to Marine Biodiversity and Terrestrial Biodiversity, and each contains a section on the 'do-nothing scenario'. These review the effects of the WwTP on biodiversity in Dublin Bay in the absence of the upgrade works and so are relevant to this report.

The EIAR report acknowledges that under the do-nothing scenario "the areas in the Tolka Estuary and North Bull Island channel will continue to be affected by the cumulative nutrient loads from the river Liffey and Tolka and the effluent from the Ringsend WwTP", which could result in a decline in biodiversity (Irish Water, 2018). Nevertheless, the negative impacts of nutrient over-enrichment, which could result in the deterioration of the biological status of Dublin Bay are considered "unlikely" (Irish Water, 2018). This is because historical data suggests that pollution in Dublin Bay has had little or no effect on the composition and richness of the benthic macroinvertebrate fauna. The EIAR notes that "although a localised decline could occur, it is not envisaged to be to a scale that could pose a threat to the shellfish, fish, bird or marine mammal populations that occur in the area." Furthermore, the EIAR notes that significant impacts on waterbird populations foraging on invertebrates in Dublin Bay due to nutrient over-enrichment are "unlikely" to occur (Irish Water, 2018). What is important in the context of this EclA is that the do-nothing scenario predicts that nutrient and suspended solid loads from the WwTP will "continue at the same levels and the impact of these loadings should maintain the same level of effects on marine biodiversity" and that "if the *status quo* is maintained there will be little or no change in the majority of the intertidal faunal assemblages found in Dublin Bay which would likely continue to be relatively diverse and rich across the bay."

Therefore, it can be concluded that significant effects on marine biodiversity and the Natura 2000 sites within Dublin Bay from the *current* operation of Ringsend WwTP are unlikely. Importantly, this conclusion is not dependent upon any future works to be undertaken at Ringsend. Thus, in the absence of any upgrading works, significant effects to habitats, fauna and Natura 2000 sites are not likely to arise.

On examination of the above it is considered that there are no means for the Proposed Development to act in-combination with any plans or projects.

9. RESIDUAL IMPACTS

Residual impacts are impacts that remain once mitigation has been implemented or impacts that cannot be mitigated. Table 6 provides a summary of the impact assessment for the identified Key Ecological Resources (KERs) and details the nature of the impacts identified, mitigation proposed and the classification of any residual impacts.

As all mitigation measures will be implemented in full and remain effective throughout the lifetime of the Development, no significant negative residual impacts on the local ecology or on any designated nature conservation sites are expected from the Proposed Development.

TABLE 6. SUMMARY OF POTENTIAL IMPACTS ON KER(S) AND LOCAL BIODIVERSITY, THE MITIGATION PROPOSED AND RESIDUAL IMPACTS.

Key Ecological Resource	Level of Significance	Potential Impact	Impact Without Mitigation				Proposed Mitigation	Residual Impact
			Quality	Magnitude / Extent	Duration	Significance		
Dodder Valley (000991)	National Importance	Deterioration in water quality	Negative	Local	Short-term	Moderate	Mitigation measures to protect surface waters as outlined in 7.1.2	Neutral
Bat assemblage	Local Importance (lower value)	Mortality during demolition	Negative	Local	Permanent	Significant	Pre-demolition bat survey to be carried out on vegetation on Site	Neutral
		Disturbance due to noise generated during Construction Phase.	Negative	Local	Permanent	Slight	Construction related noise control/minimisation measures to be implemented.	
		Disturbance/removal of foraging routes/habitat due to increased lighting as a result of the Proposed Development.					Bat sensitive lighting measures incorporated into the Construction Phase and public lighting design.	
Breeding-Bird assemblage	Local Importance (lower value)	Loss of potential foraging and nesting habitat.	Negative	Local	Permanent	Moderate	Planting of shrub and tree species to take place as part of project design. No removal of vegetation to take place during the nesting season.	Positive; Permanent.
		Disturbance due to noise generated during Construction Phase.			Short-term	Slight		Neutral.

Key Ecological Resource	Level of Significance	Potential Impact	Impact Without Mitigation				Proposed Mitigation	Residual Impact
			Quality	Magnitude / Extent	Duration	Significance		
		Collision with Site buildings during the Operational Phase			Permanent	Significant	Construction related noise control/minimisation measures to be implemented. <i>The potential negative impact of collision risk will be resolved with the architect.</i>	
Aquatic Fauna	County Importance	Deterioration in water quality due to surface water discharges associated with the Construction Phase	Negative	Local	Short-term	Significant	Mitigation measures to protect surface waters as outlined in 7.1.3	Neutral

10. CONCLUSION

It is considered that as the mitigation measures proposed to protect the local biodiversity within the vicinity of the Proposed Development are carried out in full, there will be no significant negative impact to any valued habitats, or individual or group of species as a result of the Proposed Development.

With the successful implementation of these measures and proposed works, to be carried out in accordance with the landscape plan, there will be no significant negative ecological impacts arising from Construction and Operational Phases of the Proposed Development.

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If the scope of work includes subsurface investigation such as boreholes, trial pits and laboratory testing of samples collected from the subsurface or other areas of the site, and environmental or engineering interpretation of such information, attention is drawn to the fact that special risks occur whenever engineering, environmental and related disciplines are applied to identify subsurface conditions. Even a comprehensive sampling and testing programme implemented in accordance with best practice and a professional standard of care may fail to detect certain conditions. Laboratory testing results are not independently verified by Enviroguide and have been assumed to be accurate. The environmental, ecological, geological, geotechnical, geochemical and hydrogeological conditions that Enviroguide interprets to exist between sampling points may differ from those that actually exist. Passage of time, natural occurrences and activities on and/or near the site may substantially alter encountered conditions.

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APPENDIX I – VALUE OF ECOLOGICAL RESOURCES

The criteria outlined in the table below, taken from the Guidelines for *Assessment of Ecological Impacts of National Road Schemes* published by the NRA, were used for assigning value to designated sites, habitats and species within the Site of the Proposed Development and surrounding area.

Importance	Criteria
International Importance	<ul style="list-style-type: none"> - 'European Site' including Special Area of Conservation (SAC), Site of Community Importance (SCI), Special Protection Area (SPA) or proposed Special Area of Conservation. - Proposed Special Protection Area (pSPA). - Site that fulfills the criteria for designation as a 'European Site' (see Annex III of the Habitats Directive, as amended). - Features essential to maintaining the coherence of the Natura 2000 Network. - Site containing 'best examples' of the habitat types listed in Annex I of the Habitats Directive. - Resident or regularly occurring populations (assessed to be important at the national level) of the following: <ul style="list-style-type: none"> - Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; and/or - Species of animal and plants listed in Annex II and/or IV of the Habitats Directive. - Ramsar Site (Convention on Wetlands of International Importance Especially Waterfowl Habitat 1971). - World Heritage Site (Convention for the Protection of World Cultural & Natural Heritage, 1972). - Biosphere Reserve (UNESCO Man & The Biosphere Programme). - Site hosting significant species populations under the Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animals, 1979). - Site hosting significant populations under the Berne Convention (Convention on the Conservation of European Wildlife and Natural Habitats, 1979). - Biogenetic Reserve under the Council of Europe. - European Diploma Site under the Council of Europe. - Salmonid water designated pursuant to the European Communities (Quality of Salmonid Waters) Regulations, 1988, (S.I. No. 293 of 1988).
National Importance	<ul style="list-style-type: none"> - Site designated or proposed as a Natural Heritage Area (NHA). - Statutory Nature Reserve. - Refuge for Fauna and Flora protected under the Wildlife Acts. - National Park. - Undesignated site fulfilling the criteria for designation as a Natural Heritage Area (NHA); Statutory Nature Reserve; Refuge for Fauna and Flora protected under the Wildlife Act; and/or a National Park. - Resident or regularly occurring populations (assessed to be important at the national level) of the following: <ul style="list-style-type: none"> - Species protected under the Wildlife Acts; and/or - Species listed on the relevant Red Data list. - Site containing 'viable areas' of the habitat types listed in Annex I of the Habitats Directive.
County Importance	<ul style="list-style-type: none"> - Area of Special Amenity. - Area subject to a Tree Preservation Order.

	<ul style="list-style-type: none"> - Area of High Amenity, or equivalent, designated under the County Development Plan. - Resident or regularly occurring populations (assessed to be important at the County level) of the following: <ul style="list-style-type: none"> - Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; - Species of animal and plants listed in Annex II and/or IV of the Habitats Directive; - Species protected under the Wildlife Acts; and/or - Species listed on the relevant Red Data list. - Site containing area or areas of the habitat types listed in Annex I of the Habitats Directive that do not fulfil the criteria for valuation as of International or National importance. - County important populations of species, or viable areas of semi-natural habitats or natural heritage features identified in the National or Local BAP (Biodiversity Action Plan), if this has been prepared. - Sites containing semi-natural habitat types with high biodiversity in a county context and a high degree of naturalness, or populations of species that are uncommon within the county. - Sites containing habitats and species that are rare or are undergoing a decline in quality or extent at a national level.
<p>Local Importance (Higher Value)</p>	<ul style="list-style-type: none"> - Locally important populations of priority species or habitats or natural heritage features identified in the Local BAP, if this has been prepared; - Resident or regularly occurring populations (assessed to be important at the Local level) of the following: <ul style="list-style-type: none"> - Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; - Species of animal and plants listed in Annex II and/or IV of the Habitats Directive; - Species protected under the Wildlife Acts; and/or - Species listed on the relevant Red Data list. - Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or populations of species that are uncommon in the locality; - Sites or features containing common or lower value habitats, including naturalised species that are nevertheless essential in maintaining links and ecological corridors between features of higher ecological value.
<p>Local Importance (Lower Value)</p>	<ul style="list-style-type: none"> - Sites containing small areas of semi-natural habitat that are of some local importance for wildlife; - Sites or features containing non-native species that are of some importance in maintaining habitat links.

APPENDIX II – EPA IMPACT ASSESSMENT CRITERIA

Criteria used to define quality of effects.

In line with the draft EPA Guidelines (EPA, 2017), the following terms are defined when quantifying the quality of effects:

Quality	Definition
Positive Effects	A change which improves the quality of the environment (for example by increasing species diversity; or improving the reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).
Neutral Effects	No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
Negative/adverse Effects	A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem; or damaging health or property by causing nuisance).

Criteria used to define significance of effects.

In line with the draft EPA Guidelines (EPA, 2017), the following terms are defined when quantifying significance of impacts:

Significance of Effects	Definition
Imperceptible	An effect capable of measurement but without significant consequences.
Not significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.
Slight	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate	An effect which alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Significant	An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
Very significant	An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
Profound	An effect which obliterates sensitive characteristics.

Criteria used to define duration of effects.

In line with the draft EPA Guidelines (EPA, 2017), the following terms are defined when quantifying duration and frequency of effects:

Quality of Effects	Definition
Momentary	Effects lasting from seconds to minutes
Brief	Effects lasting less than a day
Temporary	Effects lasting less than a year
Short-term	Effects lasting one to seven years
Medium term	Effects lasting seven to fifteen years

Long-term	Effects lasting fifteen to sixty years
Permanent	Effects lasting over sixty years
Reversible	Effects that can be undone, for example through remediation or restoration.

APPENDIX III – BAT REPORT

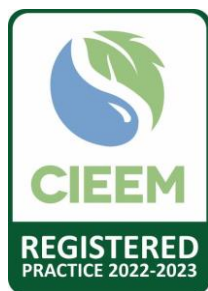
May

2022

Bat Survey Report



**Belgard Square East
Belgard Road,
Tallaght,
Dublin 24**



ASH Ecology & Environmental

Bat Survey Report – Belgard Square East, Belgard Road, Tallaght, Dublin 24

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Table 2	Suitability of the study area for the bat species found in the Tallaght area (based on the NBDC data) with Irish Red list status indicated
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Table 4	Bat Results Summary Data–May 9 th 2021 from 20.40 to 22.30 & May 16 th 2022 from 20.50 to 23.00

Figures

Figure 1	Location Map
Figure 2	Aerial Photo of site
Figure 3	Bat Activity Map with Legend (9 th May 2021)
Figure 4	Bat Activity Map with Legend (16 th May 2022)

Appendices

Appendix A	Plates (May 2022)
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1. INTRODUCTION

1.1 Purpose of the Report

Ash Ecology and Environmental Ltd (AEE) was commissioned to carry out a bat activity survey on behalf of Enviroguide Consulting during 9th May 2021 and 16th May 2022 as part of a proposed housing development.

The site is located at Belgard Square East (Grid Square 53.288021, -6.368892); see Figure 1. An aerial photo (imagery date June 2020, Google maps) is shown as Figure 2. The site measures 0.92 ha.

A bat survey was required to assess the value of the site for bats, namely any habitats present. There are no affected buildings on the site.

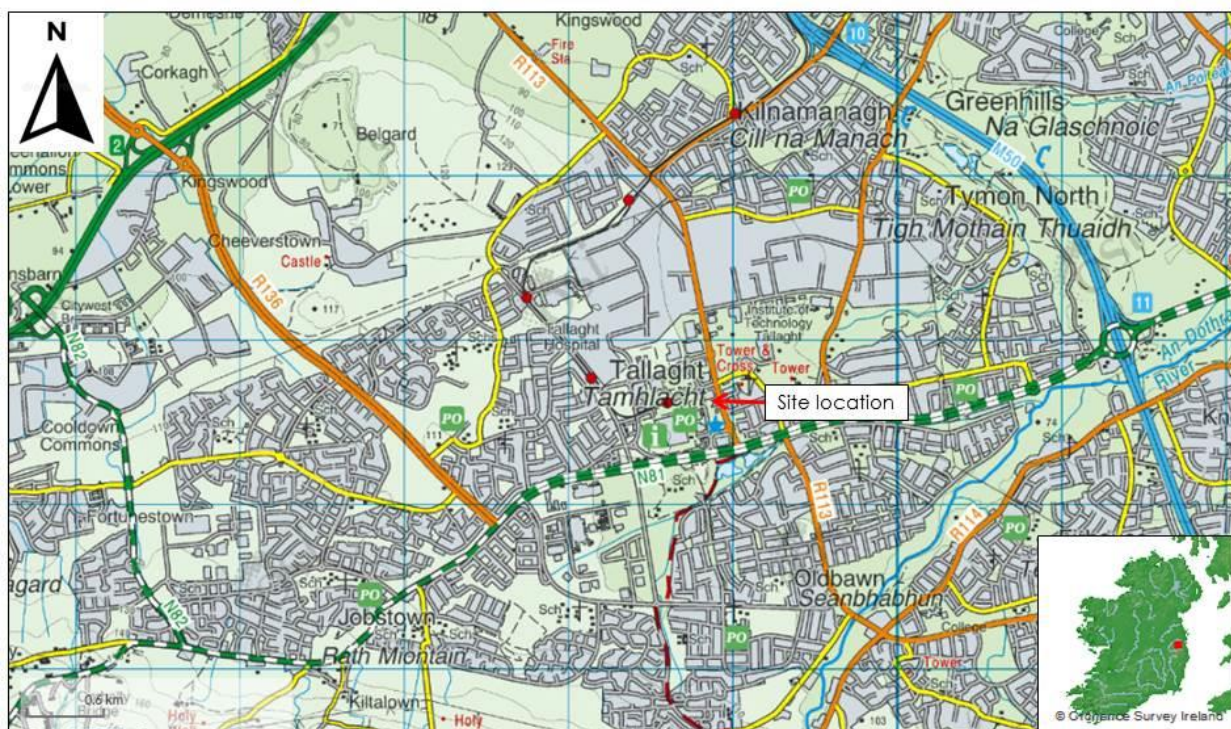


Figure 1 Site Location



Figure 2 Aerial Photo of site

1.2 Competency of Assessor

This report has been prepared by Ash Ecology & Environmental Ltd (AEE) whose managing director and leading ecologist is Aisling Walsh who is a full member of the Chartered Institute of Ecological & Environmental Management (CIEEM) while the company, AEE, is a Registered Practice by the CIEEM.

Aisling's qualifications include M.Sc. (Dist) in Biodiversity and Conservation (TCD) and B.Sc. (Hons) Zoology (NUIG), a diploma in Applied Aquatic Science (GMIT) and a Certificate in Applied Biology (GMIT). Aisling has over 15 years of experience providing environmental consultancy and environmental assessment services. Aisling has written numerous Ecological Impact Assessments (EIA), Screening for Appropriate Assessment Stage I and Stage II Natura Impact Statements, chapters for Environmental Impact Assessments/Statements (EIA), Badger Surveys, Bat Surveys, Bird and Habitat Surveys.

Aisling is a licenced bat ecologist (example of recent: DER/BAT 2020 – 46 EUROPEAN, DER/BAT 2020 – 48 EUROPEAN, DER/BAT 2021 – 89 EUROPEAN, DER/BAT 2022 – 12 EUROPEAN) and a member of Bat Conservation Ireland. In addition she has completed several bat courses to continue her training and CPD with the most recently (May 2021) a Lantra-accredited course, developed by the Bat Conservation Trust and supported by the Arboricultural Association to access bat tree roost features. Over the past 15 years Aisling has completed 100s of bat surveys providing her with more than adequate experience in the profession.

1.3 Bat Legislation

All bat species are protected under the Wildlife Act 1976 to 2021 which make it an offence to wilfully interfere with or destroy the breeding or resting place of these species; however, the Acts permit limited exemptions for certain kinds of situations.

Section 23 of the Wildlife Act 1976 to 2021 contains several exemptions to the protection given to the species listed for protection on Schedule 5 (e.g. for agriculture or construction). In 2005 a further amendment through the European Communities (Natural Habitats) (Amendment) Regulations 2005 (S.I. No. 378 of 2005) removed all of the exemptions provided in Section 23(7) of the Wildlife Act 1976 to 2021 insofar as they relate to Annex IV species, including all species of bats. Those 2005 Regulations were revoked in 2011 except for Regulation 2 which brings about this strengthened protection for bats (and other Annex IV species). All species of bats in Ireland are listed on Schedule 5 of the 1976 Act, and are therefore subject to the provisions of Section 23, which make it an offence to:

- Intentionally kill, injure or take a bat;
- Wilfully interfere with the breeding or resting place of a bat

The Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora ("the Habitats Directive") seeks to protect rare and vulnerable species, including all species of bats, and their habitats and requires that appropriate monitoring of populations be undertaken. All species of bat found in Ireland are listed on Annex IV of the Directive. Member States are required to put in place a system of strict protection (as outlined in Article 12) for species listed on Annex IV ('European protected species'). The lesser horseshoe bat is further protected under Annex II. This Annex relates to the designation of Special Areas of Conservation (SACs). The Habitats Directive is transposed into Irish law by the European Communities (Birds & Natural Habitats Regulations) 2011 (S.I. No. 477 of 2011) ("the Habitats Regulations"). Under the Habitats Regulations (2011), all bat species are listed on the First Schedule and Regulation 51 makes it an offence to:

- Deliberately capture or kill a bat;
- Deliberately disturb a bat particularly during the period of breeding, hibernating or migrating;
- Damage or destroy a breeding site or resting place of a bat;
- Keep, sell, transport, exchange, offer for sale or offer for exchange any bat taken in the wild.

Across Europe, bats are further protected under the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1982), which, in relation to bats, exists to conserve all species and their habitats. The Convention on the Conservation of Migratory Species of Wild Animals (CMS, Bonn Convention 1979) was instigated to protect migrant species across all European boundaries. EUROBATS (a daughter Agreement under CMS) is of particular relevance in relation to cooperation across international borders for the conservation of bats, many of which are known to migrate long distances. The Irish government has ratified both of these conventions as well as the EUROBATS Agreement.

1.4 Derogation licences

It is an offence, under Regulation 51 of the European Communities (Birds and Natural Habitats) Regulations, 2011 ('the 2011 Regulations') to:

- a) Deliberately capture or kill a bat in the wild;
- b) Deliberately disturb a bat particularly during the period of breeding, rearing, hibernation and migration;
- c) Damage or destroy a bat's breeding site or resting place, or;
- d) Keep, transport, sell, exchange, offer for sale or offer for exchange any bat taken in the wild, other than those taken legally before the Habitats Directive before the Habitats Directive was implemented.

A person may apply to the Minister under Regulation 54 of the 2011 Regulations for a derogation licence to carry out one or more of these prohibited activities. But, the Minister may only grant such a derogation licence if three criteria are met.

Firstly the Minister may only grant a derogation licence if it is for one of the following specified reasons listed in Regulation 54:

- a) In the interests of protecting wild fauna and flora and conserving natural habitats;
- b) To prevent serious damage, in particular to crops, livestock, forests, fisheries and water and other types of property;
- c) In the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and the beneficial consequences of primary importance for the environment;
- d) For the purpose of research and education, of repopulating and introducing these species and for the breeding operations necessary for these purposes, including the artificial propagation of bats, or;
- e) To allow, under strictly supervised conditions, on a selective basis and to a limited extent, the taking or keeping of bats.

Secondly, the Minister may only issue a derogation if there is no alternative to carrying out the prohibited activity. The first aim of the developer, whether from a private company or a public authority, working with professional advice, should be to entirely avoid any potential impact of a proposed development on bats and their breeding and resting places. Alternatives may involve redesigning a development so that bat roosts, and associated commuting routes and feeding areas are kept intact and that bats are not disturbed, for example by inappropriate lighting. It should be noted that the European Commission has a specific understanding of satisfactory alternative solution. "An alternative solution cannot be deemed unsatisfactory merely because it would cause greater inconvenience or compel a change in behaviour" (European Commission, 2021, page 13)⁴. Decisions about what solution is satisfactory must be science-based and should solve the problem of how to strictly protect the bats in light of the development.

⁴ <https://op.europa.eu/en/publication-detail/-/publication/bbc7ace0-27e2-11ec-bd8e-01aa75ed71a1/language-en>

Thirdly the Minister may only grant a derogation if it is not detrimental to the maintenance of the populations of bats at a favourable conservation status (FCS) in their natural range. There is case law from the Court of Justice of the European Union (CJEU) to back this up. One example is the Finnish Wolf Case C-674/17. The ruling establishes that the Member State must “clearly and precisely” identify in the derogation what the objectives of the derogation are. It must also establish that the derogation is capable of achieving those objectives and demonstrate that there is no satisfactory alternative. Cumulative effects of derogations must be taken into account when issuing derogations. The maximum number of all derogations must not be detrimental to the maintenance or restoration of the population at FCS. Consideration must be given to other human causes of mortality. Any risk to FCS must be ruled out by detailed conditions based on the level of population, its conservation status and its biological characteristics. The conditions must be precisely defined and they must be monitored to ensure they are implemented.

If any of these three criteria are not satisfied, the Minister cannot issue a derogation licence. It must never be assumed that a derogation licence will automatically be granted.

In summary, it is clear that a developer must first look to avoid all impacts on bats. This may mean looking at alternative solutions and redesigning the project accordingly. If this is not possible, the developer needs to check whether there are grounds to apply for a derogation licence, based on the reasons given in Regulation 54 of the Habitats Regulations. When applying for a derogation licence the developer must clearly state the reason and describe in detail all alternative solutions which were given serious consideration. Any mitigation intended to ensure that there is no impact or minimal impact on the bats must be clearly described in detail, giving examples of how it worked in other places.

If a derogation licence has been refused by the Minister, any aspect of the development for which the derogation licence was sought, must not go ahead, no matter what other permissions are in place.

A derogation licence is required when on the basis of survey information and specialist knowledge, it appears that:

- The site in question is a breeding site or resting place for bats and/or;
- The proposed activity could impact on a breeding site or resting place of a bat.

No licence is required if the proposed activity is unlikely to result in an offence. The advice given in this document (and see also Mullen et al. 2021)⁵ should assist the proponent, or those acting on their behalf, in arriving at a decision on this matter, though it must be recognised that determining whether a particular site is used as a breeding or resting place can be problematic for such mobile animals as bats.

⁵ Mullen, E., Marnell, F & Nelson, B. (2021) Strict protection of animal species. Guidance for public authorities on the application of Articles 12 and 16 of the EU Habitats Directive to development/works undertaken by or on behalf of a public authority. Unpublished Report, National Parks and Wildlife Service. Department of Housing, Local Government and Heritage, Dublin. <https://npws.ie/sites/default/files/files/article-12- guidance-final.pdf>

Determining whether an activity undertaken near to a roost might impact on that roost (e.g. by removing important flight lines or foraging areas) will also require specialist assessment. Note that if the proposed activity can be timed, organised and carried out so as to avoid committing an offence then no licence is required.

Examples of works that are likely to need a licence because they may result in the destruction of a breeding or resting place and/or disturbance of bats include:

- Demolition of buildings known to be used by bats;
- Conversion of barns or other buildings known to be used by bats;
- Restoration of ruined or derelict buildings;
- Maintenance and preservation of heritage buildings;
- Introduction of artificial lighting inside a roost or near a roost entrance;
- Change of use of buildings resulting in increased ongoing disturbance;
- Removal of trees known to be used by bats;
- Significant alterations to roof voids known to be used by bats. Examples of works that, if carefully planned, may not need a licence include:
- Works near to or at roosts (e.g. re-roofing) if carried out while bats are not present and the access points and roosting area are not affected;
- Remedial timber treatment, carried out with the correct (non-toxic to bats) chemicals while bats are not present.

2. METHODOLOGY

2.1 Information Sources

A desk-based review of information sources was completed. Information contained on the websites of the National Parks and Wildlife Service (NPWS)⁶ and the National Biodiversity Data Centre (NBDC)⁷ was reviewed.

The following publications and websites were also reviewed and consulted:

- Marnell, F., Kelleher, C. & Mullen, E. (2022) Bat mitigation guidelines for Ireland v2. Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland.
- Mullen, E., Marnell, F & Nelson, B. (2021) Strict protection of animal species. Guidance for public authorities on the application of Articles 12 and 16 of the EU Habitats Directive to development/works undertaken by or on behalf of a public authority. Unpublished Report, National Parks and Wildlife Service. Department of Housing, Local Government and Heritage, Dublin. <https://npws.ie/sites/default/files/files/article-12-guidance-final.pdf>
- Bat Conservation Trust (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd edition
- CIEEM (2021) Bat Mitigation Guidelines - A guide to impact assessment, mitigation and compensation for developments affecting bats
- Bat Conservation Ireland <https://www.batconservationireland.org/>
- Bat Roosts in Trees: A Guide to Identification and Assessment for Tree-Care and Ecology Professionals (2018)
- Bat Conservation Trust (2018) Bats and artificial lighting in the UK Bats and the Built Environment series⁸
- Mitchell-Jones, A.J, & McLeish, A.P. (eds). 2004., 3rd Edition Bat Workers' Manual, JNCC, Peterborough, ISBN 1 86107 558 8
- Bat Conservation Ireland (2012) Bats and Appropriate Assessment Guidelines, Version 1, December 2012. Bat Conservation Ireland, www.batconservationireland.org ⁹
- Bat Conservation Ireland (2010) Bats & Lighting Guidance Notes for: Planners, engineers, architects and developers ¹⁰
- Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes (National Roads Authority, 2005).
- Guidelines for the Treatment of Bats during the Construction of National Road Schemes (National Roads Authority, 2005).
- Bats and Lighting in the UK – Bats and the Built Environment Series (Institute of Lighting Professionals, September 2011)
- Guidance Notes for the Reduction of Obtrusive Light GN01 (Institute of Lighting Professionals, 2011).
- Bats and Lighting – Guidance Notes for Planners, Engineers, Architects and Developers (Bat Conservation Ireland);

⁶ The National Parks and Wildlife Services map viewer <http://webgis.npws.ie/npwsviewer/>

⁷ The National Biodiversity Data Centre www.NBDC.ie

⁸ <https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/>

⁹ https://www.batconservationireland.org/wp-content/uploads/2013/09/BCIreland-AA-Guidelines_Version1.pdf

¹⁰ https://www.batconservationireland.org/wp-content/uploads/2013/09/BCIrelandGuidelines_Lighting.pdf

- The Eurobats Mitigation of Lighting Document

2.2 Desk Study

2.2.1 Previous Records

A desktop review was carried out to identify the previous records of Bat species within the applicant site and its environs. The study area occurs in 10km² Grid Square O02. The website the NBDC (www.nbdc.ie) was accessed on 17/05/2022 to establish any previous bat records and shown below in Table 1.

Table 1 Historical Bat Records in 10km² Grid Ref O02 (NBDC website www.nbdc.ie accessed 17/05/2022)

Species Name - Common	Species Name - Latin	Last Documented Record O02
Brown Long-eared Bat	<i>Plecotus auritus</i>	05/07/2012
Daubenton's Bat	<i>Myotis daubentonii</i>	21/08/2014
Lesser Noctule	<i>Nyctalus leisleri</i>	18/09/2012
Natterer's Bat	<i>Myotis nattereri</i>	14/09/2011
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	15/10/2012
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	05/08/2012

2.2.2 Species Background

Ireland had ten known bat species until February 2013, when a single live greater horseshoe bat (*Rhinolophus ferrumequinum*) was found roosting in Co. Wexford¹¹. On 8th June 2020, a single audio recording was confirmed in the Glendaough area, Co. Wicklow. It was found on two more occasions in the same area in early July 2020 (Bat Conservation Ireland, July 2020).

The ten species (excluding the greater horseshoe) are briefly described overleaf. For a more comprehensive overview see McAney, 2006.¹²

The dependence of Irish bat species on insect prey has left them vulnerable to habitat destruction, land drainage, agricultural intensification and increase use of pesticides. Also, their reliance on buildings as roosting sites has made them particularly vulnerable to renovation works and the use of timber chemical treatment. Buildings are highly important as roosting sites for bats and all Irish bat species use buildings for all roost types. Most significant in terms of roosts in houses are maternity roosts, but cellars and even attics may serve as hibernation sites for bats. Roosts within buildings can far exceed the numbers encountered in trees, ridges, caves or cliffs and roosts of over 1,000 bats have been recorded in buildings.¹³

¹¹ National Biodiversity Data Centre <http://www.biodiversityireland.ie/new-bat-species-found-in-ireland/>

¹² McAney, K. (2006) *A Conservation Plan for Irish Vesper Bats*. Irish Wildlife Manual No.20. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government.

¹³ NRA (2005) *Guidelines for the Treatment of Bats Prior to the Construction of National Road Schemes*. National Roads Authority, Dublin

2.2.2.1 Family Vespertilionidae:

Common pipistrelle *Pipistrellus pipistrellus*

This species was only recently separated from its sibling, the soprano or brown pipistrelle *P. pygmaeus*¹⁴, which is detailed below. The common pipistrelle's echolocation calls peak at 45 kHz. The species forages along linear landscape features such as hedgerows and treelines as well as within woodland.

Soprano pipistrelle *Pipistrellus pygmaeus*

The soprano pipistrelle's echolocation calls peak at 55 kHz, which distinguishes it readily from the common pipistrelle on detector. The pipistrelles are the smallest and most often seen of our bats, flying at head height and taking small prey such as midges and small moths. Summer roost sites are usually in buildings but tree holes and heavy ivy are also used. Roost numbers can exceed 1,500 animals in mid-summer.

Nathusius' pipistrelle *Pipistrellus nathusii*

Nathusius' pipistrelle is a recent addition to the Irish fauna and has mainly been recorded from the north-east of the island in Counties Antrim and Down¹⁵ and also in Fermanagh, Longford and Cavan. It has also recently been recorded in Counties Cork and Kerry.¹⁶ However, the known resident population is enhanced in the autumn months by an influx of animals from Scandinavian countries. The status of the species has not yet been determined.

Leisler's bat *Nyctalus leisleri*

This species is Ireland's largest bat, with a wingspan of up to 320mm; it is also the third most common bat, preferring to roost in buildings, although it is sometimes found in trees and bat boxes. It is the earliest bat to emerge in the evening, flying fast and high with occasional steep dives to ground level, feeding on moths, caddisflies and beetles. The echolocation calls are sometimes audible to the human ear being around 15 kHz at their lowest. The audible chatter from their roost on hot summer days is sometimes an aid to location. This species is uncommon in Europe and as Ireland holds the largest national population the species is considered as Near Threatened here.

Brown long-eared bat *Plecotus auritus*

This species of bat is a 'gleaner', hunting amongst the foliage of trees and shrubs, and hovering briefly to pick a moth or spider off a leaf, which it then takes to a sheltered perch to consume. They often land on the ground to capture their prey. Using its nose to emit its echolocation, the long-eared bat 'whispers' its calls so that the insects, upon which it preys, cannot hear its approach (and hence, it needs oversized ears to hear the returning echoes). As this is a whispering species, it is extremely difficult to monitor in the field as it is seldom heard on a bat detector.

¹⁴ Barratt, E. M., Deauville, R., Burland, T. M., Bruford, M. W., Jones, G., Racey, P. A., & Wayne, R. K. (1997) *DNA Answers the Call of Pipistrelle Bat Species*. *Nature* 387: 138 - 139.

¹⁵ Richardson, P. (2000) *Distribution Atlas of Bats in Britain and Ireland 1980 - 1999*. The Bat Conservation Trust, London, England.

¹⁶ Kelleher, C. (2005) *International Bat Fieldcraft Workshop, Killarney, Co. Kerry*. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government.

Furthermore, keeping within the foliage, as it does, it is easily overlooked. It prefers to roost in old buildings.

Natterer's bat *Myotis nattereri*

This species has a slow to medium flight, usually over trees but sometimes over water. It usually follows hedges and treelines to its feeding sites, consuming flies, moths, caddis-flies and spiders. Known roosts are usually in old stone buildings but they have been found in trees and bat boxes. The Natterer's bat is one of our least studied species and further work is required to establish its status in Ireland.

Daubenton's bat *Myotis daubentonii*

This bat species feeds close to the surface of water, either over rivers, canals, ponds, lakes or reservoirs but it can also be found foraging in woodlands. Flying at 15 kilometres per hour, it gaffs insects with its over-sized feet as they emerge from the surface of the water - feeding on caddis flies, moths, mosquitoes, midges etc. It is often found roosting beneath bridges or in tunnels and also makes use of hollows in trees.

Whiskered bat *Myotis mystacinus*

This species, although widely distributed, has been rarely recorded in Ireland. It is often found in woodland, frequently near water. Flying high, near the canopy, it maintains a steady beat and sometimes glides as it hunts. It also gleans spiders from the foliage of trees. Whiskered bats prefer to roost in buildings, under slates, lead flashing or exposed beneath the ridge beam within attics. However, they also use cracks and holes in trees and sometimes bat boxes. The whiskered bat is one of our least studied species and further work is required to establish its status in Ireland.

Brandt's bat *Myotis brandtii*

This species is known from five specimens found in Counties Wicklow (Mullen, 2007), Cavan, and Clare in 2003, a specimen in Kerry in 2005¹⁷ and another in Tipperary in 2006.¹⁸ No maternity roosts have yet been found. It is very similar to the whiskered bat and cannot be separated by the use of detectors. Its habits are similar to its sibling.

2.2.2.2 Family *Rhinolophidae*:

Lesser horseshoe bat *Rhinolophus hipposideros*

This species is the only representative of the *Rhinolophidae* or horseshoe bat family in Ireland. It differs from our other species in both habits and looks, having a unique nose leaf with which it projects its echolocation calls. It is also quite small and, at rest, wraps its wings around its body. Lesser horseshoe bats feed close to the ground, gleaning their prey from branches and stones. It often carries its prey to a perch to consume, leaving the remains beneath as an indication of its presence.

The echolocation call of this species is of constant frequency and, on a heterodyne bat detector, sounds like a melodious warble. The species is confined to six counties along the Atlantic seaboard: Mayo, Galway, Clare, Limerick, Kerry and Cork. The

¹⁷ Kelleher, C. 2006a *Nathusius pipistrelle Pipistrellus nathusii* and Brandt's Bat *Myotis brandtii* - New Bat Species to Co. Kerry – Irish Naturalists' Journal 28: 258.

¹⁸ Kelleher, C. 2006b Brandt's Bat *Myotis brandtii*, New Bat Species to Co. Tipperary. Irish Naturalists' Journal 28: 345.

current Irish national population is estimated at 12,500 animals. This species is listed on Annex II of the EC Habitats Directive and 41 Special Areas of Conservation have been designated in Ireland for its protection. Where it occurs, it is often found roosting within farm buildings.

2.2.3 Landscape Suitability

The National Biodiversity Data Centre (NBDC) maps landscape suitability bats based on Lundy et al. (2011). The maps are a visualisation of the results of the analyses based on a 'habitat suitability' index. The index ranges from 0 to 100 with 0 being least favourable and 100 most favourable for bats. On average for all bat species the highest range is between 36.44 - 58.56. The overall assessment of bat habitats for the current study area is given as 24.67, deemed 'Low' by the author.

Table 2 gives the suitability of the study area for the bat species found in the study area (based on NBDC) along with their Irish Red List Status (from Marnell et al., 2019).¹⁹

Table 2 Suitability of the study area for the bat species found in the Tallaght area (based on the NBDC data) with Irish Red list status indicated

Common name	Scientific name	Suitability index	Irish red list status
All bats	-	24.67	Least Concern
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	33	Least Concern
Brown long-eared bat	<i>Plecotus auritus</i>	36	Least Concern
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	40	Least Concern
Lesser-horseshoe bat	<i>Rhinolophus hipposideros</i>	0	Least Concern
Leisler's bat	<i>Nyctalus leisleri</i>	40	Least Concern
Whiskered bat	<i>Myotis mystacinus</i>	18	Least Concern
Daubenton's bat	<i>Myotis daubentonii</i>	15	Least Concern
Nathusius' pipistrelle	<i>Pipistrellus nathusii</i>	11	Least Concern
Natterer's bat	<i>Myotis nattereri</i>	29	Least Concern

2.2.4 Bat Roosts

Bats were originally cave and tree dwelling animals but many now find buildings just as suitable for their needs. Bats are social animals and most species congregate in large colonies during summer. These colonies consist mostly of females of every reproductive class, with some juvenile males from the previous year. Male bats normally roost individually or in small groups meeting up with the females in the late autumn-early winter, when it is time to mate. In summer, bats seek warm dry buildings in which they can give birth and suckle their young. In winter, they seek out places with a constant low temperature and high humidity where they can become torpid and hibernate during adverse weather conditions. However, bats do not hibernate continuously during winter and will awake and hunt during mild

¹⁹ Marnell, F., Looney, D. & Lawton, C. (2019) Ireland Red List No. 12: Terrestrial Mammals. National Parks and Wildlife Service, Department of the Culture, Heritage and the Gaeltacht, Dublin, Ireland.

nights when there are insects available and it is energetically advantageous to forage.

2.2.4.1 Maternity Roosts

Maternity roosts are the most significant roosts and they are predominantly all-female aggregations that are formed from late May onwards and remain as a relatively cohesive unit until mid to late August. Not all female bats give birth annually. These females that do bear young in a given year avail of a suitable building, tree and sometimes cave (or equivalent). The young are flightless for several weeks and hence are vulnerable to dangers such as tree felling and restoration, reinforcement or demolition of structures such as buildings and bridges.

2.2.4.2 Mating Roosts

Most bat species mate in autumn but pregnancy does not occur until the following spring. During this time males will take possession of a cavity in a building, tree, bridge, cave or mine and attract females to these sites to establish a harem. Male bats call both from a perch and in flight in much the same manner that male birds sing.

2.2.4.3 Hibernation Roosts

Bats have a high metabolic rate and in temperate countries, such as Ireland, flying insects are not available in sufficient numbers during winter to sustain bats. Therefore, bats hibernate during winter. In hibernation sites, bats are often completely inactive for several days and are extremely vulnerable to disturbance by human activities due to the time taken for them to become sufficiently active to allow escape. Hibernation may extend from November to the end of March, during which time bat activity will take place sporadically.

2.2.4.4 Night Roosts

These are roosts which are used as resting places for bats between foraging bouts. They also provide retreats for bats from predators or during inclement weather conditions. They also function as feeding perches and may be important for socialising.

2.3 Bat Survey

2.3.1 Bat Activity Survey

A bat activity survey was carried out 9th May 2021 and a follow up survey on 16th May 2022 to ascertain the bat species present and the areas of the site when most activity was evident.

The equipment used included an Elekon Bat Logger M detector. Visual observations were taken with the aid of a powerful L.E.D. torch (AP Pros-Series 220 Lumens High Performance Spotlight). A Seek Thermal Reveal Pro High-Resolution Thermal Imaging Camera and RIDGID 36848 Micro CA-150 Hand-Held Borescope were also available for inspection of any crevices e.g. in suitable trees or stonework.

The bat activity survey on May 9th 2021 began at 20.40 which was approx. 30 minute before sunset (21.08) and lasted until 22.30 as per guidelines.^{20 17} Likewise the survey on May 16th 2022 began at 20.50 and concluded at 23.00 (sunset 21.20).

The survey was undertaken during favourable weather conditions e.g. dry with temperatures of 13°C (May 2021) and 15°C (May 2022) with a gentle breeze. Surveys are best carried out April to end of September in suitable weather conditions which this survey was.^{16, 21}

The detector picked up frequencies between 25 kHz - 115 kHz as this frequency range is able to pick up the calls of all Irish bat species, including Lesser horseshoe bats (although highly unlikely in this area of the country, suitability index 0, see Table 2).

2.3.2 Bat Potential Trees

During the survey, the features listed below on the boundary and internal treelines/hedgerows on the boundaries were sought and considered as they would provide suitable roost sites for bats:

- Natural holes (e.g. knot holes) arising from naturally shed branches or branches previously pruned back to a branch collar.
- Man-made holes (e.g. cavities that have developed from flush cuts or cavities created by branches tearing out from parent stems).
- Cracks/splits in stems or branches (horizontal and vertical).
- Partially detached, loose or bark plates.
- Cankers (caused by localised bark death) in which cavities have developed.
- Other hollows or cavities, including butt rots.
- Compression of forks with included bark, forming potential cavities.
- Crossing stems or branches with suitable roosting space between.
- Ivy stems with diameters in excess of 50mm with suitable roosting space behind (or where roosting space can be seen where a mat of thinner stems has left a gap between the mat and the trunk).
- Bat or bird boxes.
- Other suitable places of rest or shelter.

Certain factors such as orientation of the feature, height from the ground, the direct

²⁰ Collins, J (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd edition;

²¹ Marnell, F., Kelleher, C. & Mullen, E. (2022) Bat mitigation guidelines for Ireland v2. Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland

surroundings and its location in respect to other features may enhance or reduce the potential value.

Treelines/hedgerows were classified into general bat roost potential groups based upon the presence of these features. An evaluation table is shown as Table 3.

Table 3 Classification and Survey Requirements for Bats in Trees²²

Classification of Tree	Description of Category and Associated Features (based on Potential Roosting Features listed above)	Likely Further Survey Work / Actions
Confirmed Roost	Evidence of roosting bats in the form of live / dead bats, droppings, urine staining, mammalian fur oil staining, etc.	<p>A National Parks and Wildlife (NPWS) derogation licence application will be required if the tree or roost site is affected by the development or proposed arboricultural works. This will require a combination of aerial assessment by roped access bat workers (where possible, health and safety constraints allowing) and nocturnal survey during appropriate periods (e.g. nocturnal survey - May to August) to inform on the licence.</p> <p>Works to tree undertaken under supervision in accordance with the approved good practice method statement provided within the licence.</p> <p>However, where confirmed roost site(s) are not affected by works, work under a precautionary good practice method statement may be possible.</p>
High Potential	A tree with one or more Potential Roosting Features that are obviously suitable for larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter protection, conditions (height above ground level, light levels, etc) and surrounding habitat. Examples include (but are not limited to); woodpecker holes, larger cavities, hollow trunks, hazard beams, etc.	<p>Aerial assessment by roped access bat workers (if appropriate) and / or nocturnal survey during appropriate period (May to August).</p> <p>Following additional assessments, tree may be upgraded or downgraded based on findings.</p> <p>If roost sites are confirmed and the tree or roost is to be affected by proposals a licence from the NPWS will be required.</p> <p>After completion of survey work (and the presence of a bat roost is</p>

²² Bat Surveys for Professional Ecologists: Good Practice Guidelines (J., Collins (Bat Conservation Trust), 2016).

Classification of Tree	Description of Category and Associated Features (based on Potential Roosting Features listed above)	Likely Further Survey Work / Actions
		discounted), a precautionary working method statement may still be appropriate.
Moderate Potential	<p>A tree with Potential Roosting Features which could support one or more potential roost sites due to their size, shelter protection, conditions (height above ground level, light levels, etc) and surrounding habitat but unlikely to support a roost of high conservation status (i.e. larger roost, irrespective of wider conservation status). Examples include (but are not limited to); woodpecker holes, rot cavities, branch socket cavities, etc.</p>	<p>A combination of aerial assessment by roped access bat workers and / or nocturnal survey during appropriate period (May to August).</p> <p>Following additional assessments, tree may be upgraded or downgraded based on findings.</p> <p>After completion of survey work (and the presence of a bat roost is discounted), a precautionary working method statement may still be appropriate.</p> <p>If a roost site/s is confirmed a licence from the NPWS will be required.</p>
Low Potential	<p>A tree of sufficient size and age to contain Potential Roosting Features but with none seen from ground or features seen only very limited potential. Examples include (but are not limited to); loose/lifted bark, shallow splits exposed to elements or upward facing holes.</p>	No further survey required but a precautionary working method statement may be appropriate.
Negligible/No potential	Negligible/no habitat features likely to be used by roosting bats	None.

2.4 Landscape Evaluation

Ecological survey results were evaluated to determine the significance of identified features located in the study area on an importance scale ranging from international-national-county-local (from NRA, 2009) The local scale is approximately equivalent to one 10km square but can be operationally defined to reflect the character of the area of interest. Because most sites will fall within the local scale, this is sub-divided into two categories: local importance (higher value) and local importance (lower value).

3. RESULTS

3.1 Site Overview

Habitats were identified and classified according to Fossitt (2000)²³ and Smith *et al.* (2011)²⁴. The habitats within the study area, which will be affected, consist mainly of Buildings and Artificial Surfaces (BL3) with areas of scrub (WS1)/Recolonising Bare Ground (ED3). There were no mature trees on the site, only buddleia scrub or young willow, birch and alder. Any walls on boundaries were block with no cavities.

The most recent Plates of the site are shown in Appendix A (May 2022).

3.2 Bat Recordings

The results of the bat survey are summarized in Table 4 from the 9th May 2021 and 16th May 2022 surveys. A map outlining the location of the bat calls is shown in Figures 3 (May 9th 2021) and Figure 4 (May 16th 2021).

An extremely low rate of bat activity was recorded on both surveys conducted in May 2021 and 2022 in ambient weather conditions – possibly due to the urbanised landscape and lack of woodland area in the wider landscape. In general the main landscape is urbanised. Optimum bat roosting, commuting and foraging routes and opportunities are very limited.

Table 4 Bat Results Summary Data–May 9th 2021 from 20.40 to 22.30 & May 16th 2022 from 20.50 to 23.00

Species Name – Common	Species Name – Latin	Number of Passes	Peak Frequency (kHz)	Time
May 9th 2021				
Leisler's Bat	<i>Nyctalus leisleri</i>	1	27.0	21.10
May 16th 2022				
Leisler's Bat	<i>Nyctalus leisleri</i>	1	27.0	21.25
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	2	45.0	21.45 & 21.55 (likely to be same bat)

²³ Fossitt, J. (2000). *A Guide to Habitats in Ireland*. The Heritage Council, Kilkenny.

²⁴ Smith, G.F., O'Donoghue, P., O'Hora, K. and Delaney, E. (2011) Best practice guidance for habitat survey and mapping. The Heritage Council, Kilkenny.

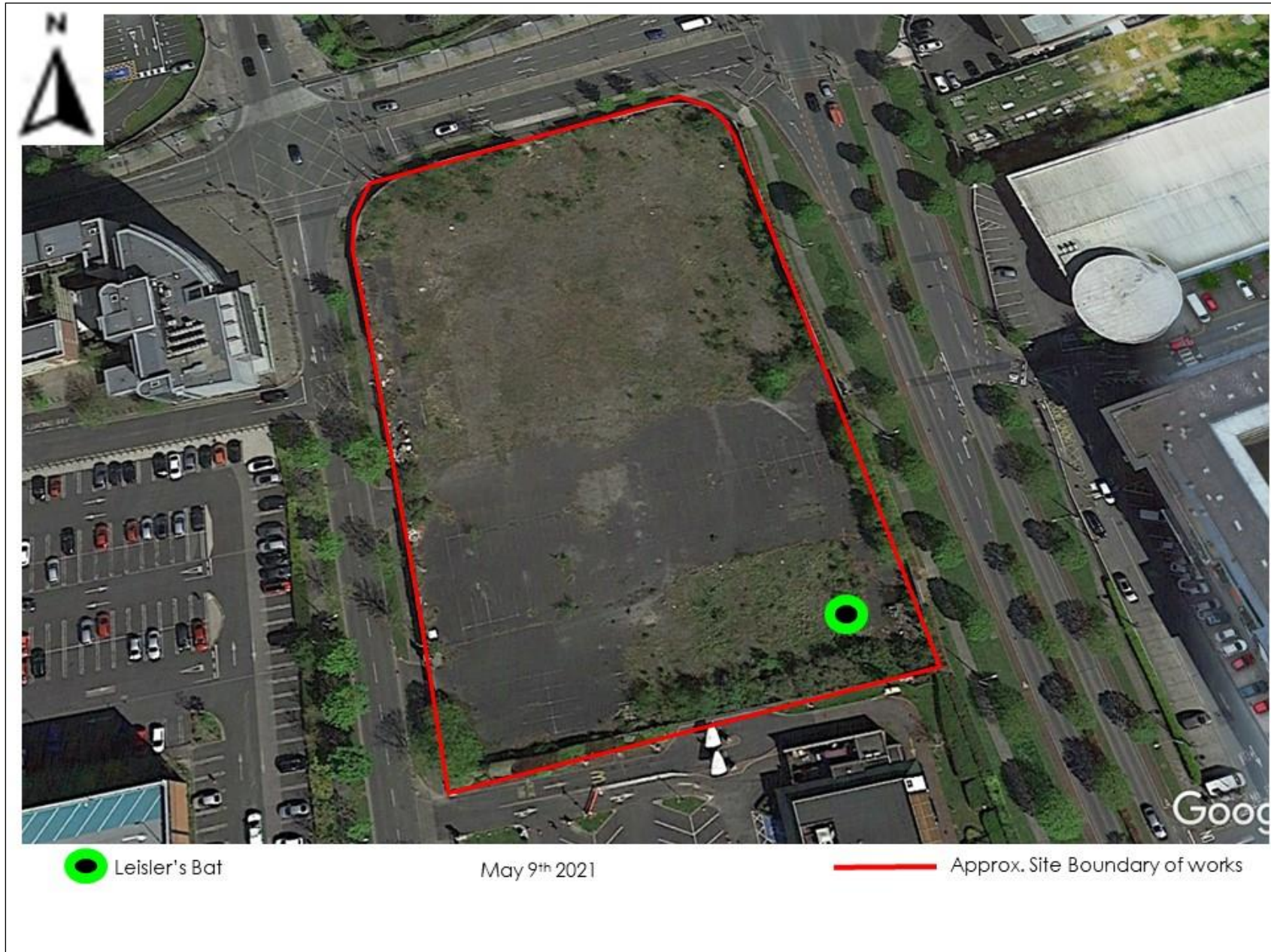


Figure 3 Bat Activity Map with Legend (May 9th 2021)

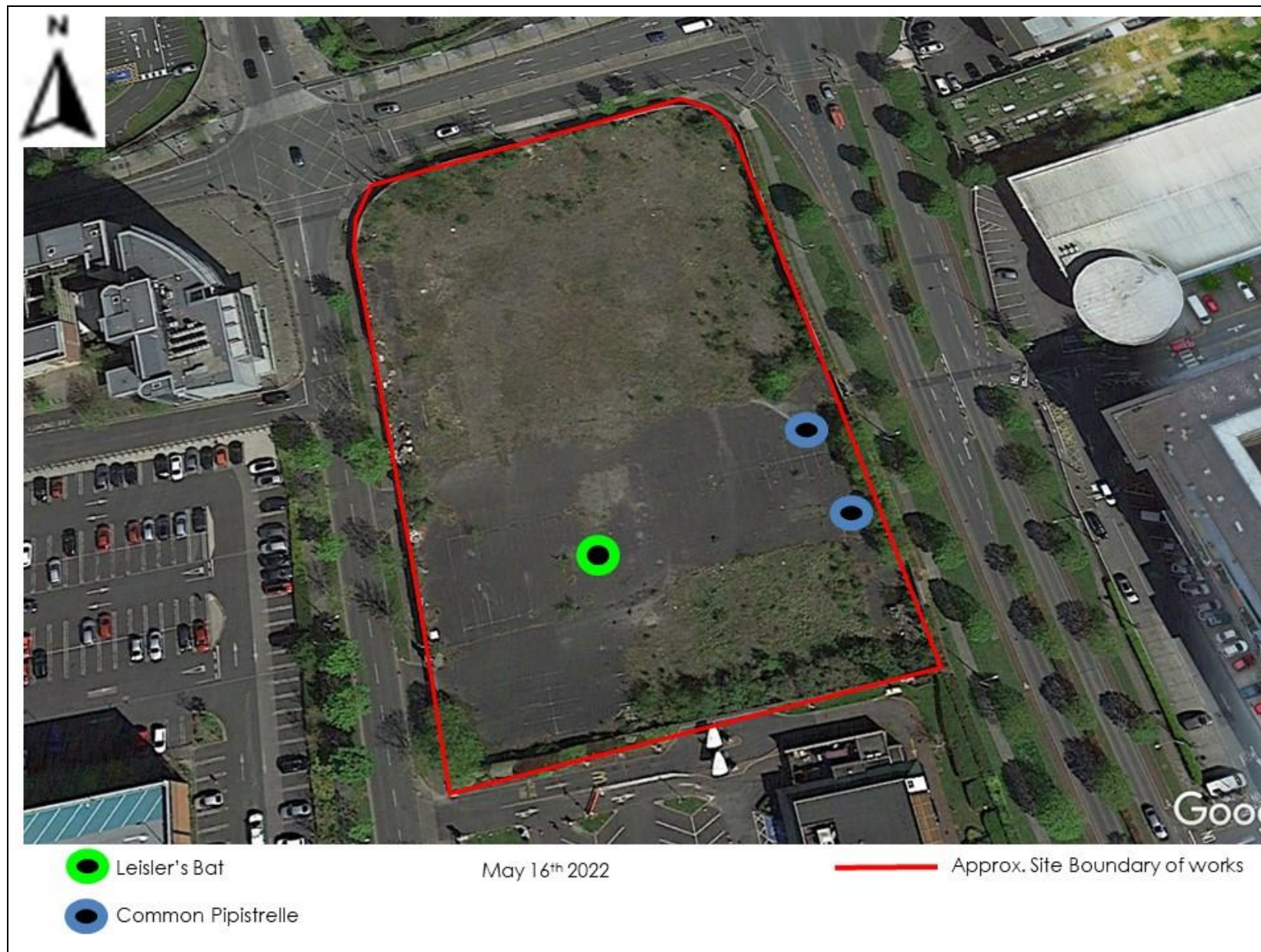


Figure 4 Bat Activity Map with Legend (May 16th 2022)

3.3 Bat Survey Overview

During the May 2021 survey one Leisler's bat detected was flying over the site to forage elsewhere, (see Figure 3).

During the May 2022 survey one Leisler's bat detected was flying over the site to forage elsewhere, (see Figure 4). In addition there were two passes of a Common Pipistrelle to the east of site, likely to be the same bat. It appeared to be feeding on some small trees and scrub growing along the boundary.

The recommendations set out in Section 4 should offset negative impacts to bats via the installation of bat boxes and landscaping during the operational phases along with a bat friendly lighting design.

3.4 Landscape Evaluation

The landscape is considered of local importance (Lower value) for bats. There is a lack of hedgerows and continuous mature treelines in the wider area along with a lack of woodland areas in the vicinity of the applicant site. The majority of habitats in the wider landscape are buildings and artificial surfaces (BL3). There was a component of scrub/young trees along some of the site boundaries which provide some commuting routes for bats in and out of the site.

4. RECOMMENDATIONS

4.1 Lighting and Bats

In order to minimise disturbance to bats utilising the site in general, the lighting and layout of the proposed development should be designed to minimise light-spill onto habitats used by the local bat population foraging or commuting. This can be achieved by ensuring that the design of lighting accords with guidelines presented in the Bat Conservation Trust & Institute of Lighting Engineers '*Bats and Lighting in the UK - Bats and Built Environment Series*', the Bat Conservation Trust '*Artificial Lighting and Wildlife Interim Guidance*' and the Bat Conservation Trust '*Statement on the impact and design of artificial light on bats*'. Therefore, where possible, the lighting scheme should include the following:

- The avoidance of direct lighting of proposed areas of habitat creation / landscape planting.
-
- Unnecessary light spill controlled through a combination of directional lighting and hooded / shielded luminaires or strategic planting to provide screening vegetation.
-
- Lights should be of low intensity. It is better to use several low intensity lights than one strong light spilling light across the entire area.
-
- Narrow spectrum lighting should be used with a low UV component. Glass also helps reduce the UV component emitted by lights.
-
- The colour rendering of the selected light fitting should be 3000k making the LED fittings a warmer light, helping to further minimize the impact on the local wildlife

4.2 Potential Bat Trees

There were no mature trees with bat roost potential onsite, only scrub and young willow, birch and alder trees with no bat roost potential. Therefore the following is recommended:

- A series of 3+ bat boxes be erected around the site (on future trees or walls) to provide future roosting opportunities. These should be positioned in an dark area over 4m high.
- Trees used for landscaping should include semi-mature native Irish species. If some of the existing young native trees onsite can be replanted elsewhere onsite this should be considered.

5. CONCLUSION

The site habitats consist mainly of Buildings and Artificial Surfaces (BL3) with areas of scrub (WS1)/Recolonising Bare Ground (ED3). There were trees with bat roost potential onsite. No structures/buildings are located onsite. There was a low level of bat activity on surveys undertaken in May 2021 and May 2022 despite ambient weather conditions and the optimum time of year for surveys.

Mitigation for bats will be via the supplementary planting of native Irish tree species and the erection of 3+ bat boxes around the site during the operational phase.

Finally, in order to minimise disturbance to bats utilising the site in general, the lighting and layout of the proposed development will be designed to minimise light-spill onto habitats both within and adjacent to it that are used by the local bat population foraging or commuting across the site. In that regard the guidelines for lighting and bats will be taken into account for the lighting layout.

Overall with the recommendations implemented from Section 4 any impacts to bats from the proposed development will be negligible.

APPENDICES

APPENDIX A



Plate 1 Scrub (WS1), Hard Standing (BL3) and Recolonising Bare Ground (ED3) on site (May 2022)



Plate 2 Scrub (WS1), Hard Standing (BL3) and Recolonising Bare Ground (ED3) on site (May 2022)



Plate 3 Scrub (WS1), Hard Standing (BL3) and Recolonising Bare Ground (ED3) on site (May 2022)

Plate 4 Scrub (WS1), Hard Standing (BL3) and Recolonising Bare Ground (ED3) on site (May 2022)



Plate 5 Scrub (WS1), Hard Standing (BL3) and Recolonising Bare Ground (ED3) on site (May 2022)



Plate 6 Scrub (WS1), Hard Standing (BL3) and Recolonising Bare Ground (ED3) on site (May 2022)