PROPOSED MIXED USE LARGE-SCALE RESIDENTIAL DEVELOPMENT AT WHITE HEATHER INDUSTRIAL ESTATE, SOUTH CIRCULAR ROAD, DUBLIN 8

Ecological Impact Assessment Report

Green Urban Logistics 3 White Heather Propco Limited

Rev.: 1
Date: 27/11/2025

Project name:	Proposed Mixed Use Large-Scale Residential Development at White Heather Industrial Estate, South Circular Road, Dublin 8	DNV Synergy Environmental Limited T/A DNV 3D Core C, Block 71, The Plaza, Park West Dublin 12, D12F9TN Tel: 01 565 4730
Report title:	Ecological Impact Assessment Report	
Customer:	Green Urban Logistics 3 White Heather Propco Limited, 32 Molesworth Street, Dublin 2	
Date of issue:	27/11/2025	
Project no.:	10575222	
Organisation unit:	Energy Systems	

Prepared by:	Verified by:	Approved by:
HON	WMC	SOD
Heather O'Neill Project Ecologist	William McCauley Ecologist	Shea O'Driscoll Principal Ecologist

Rev. no.	Date	Reason for issue	Prepared by	Verified by	Approved by
0	2025-11-21	Client issue	HON	WMC	SOD
1	2025-11-27	Final issue	HON	WMC	SOD

DISCLAIMER

Independence, impartiality, and advisory limitations

This document contains content provided by DNV. Please note the following:

Ethical safeguards

To maintain integrity and impartiality essential to its third-party roles, DNV performs initial conflict-of-interest assessments before engaging in advisory services.

Priority of roles

This report is generated by DNV in its advisory capacity, subsequent to conflict-of-interest assessments. It is separate from DNV's responsibilities as a third-party assurance provider. Where overlap exists, assurance activities conducted by DNV will be independent and take precedence over the advisory services rendered.

Future assurance limitation

The content in this document will not obligate or influence DNV's independent and impartial judgment in any future third party assurance activities with DNV.

Compliance review

DNV's compliance with ethical and industry standards in the separation of DNV's roles is subject to periodic external reviews.

Table of contents

List of Tables

List of Figures

1 INTRODUCTION

DNV was commissioned by Green Urban Logistics 3 White Heather Propco Limited to undertake an Ecological Impact Assessment (EcIA) in relation to a Proposed Development at White Heather Industrial Estate, South Circular Road, Saint James, Dublin 8, hereafter referred to as 'Proposed Development' or 'Site' when referring to the site area of the Proposed Development.

This EcIA 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 on or adjacent to the Site. This report will describe the ecology of the Site, with emphasis on habitats, flora and fauna, and will assesses 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) and supplemented by 'Guidelines for Assessment of Ecological Impacts of National Road Schemes' (NRA, 2009). The purpose of this EcIA is to:

- Set out the methodologies used to inform the assessment;
- Identify Key Ecological Receptors (KERs) within the Zone of Influence (ZoI);
- Assess the impacts from the Proposed Development on the KERs and the resulting significant effects;
- Set out measures to avoid or mitigate negative impacts;
- Assess the residual effects after the incorporation of agreed avoidance or mitigation measures to ensure legal compliance;
- Set out agreed measures to offset significant residual effects; and
- Set out opportunities for ecological enhancement.

1.1 Quality Assurance and Competence

All surveying and reporting have been carried out by qualified and experienced ecologists and environmental consultants. HON, Project Ecologist with DNV, undertook habitat, fauna and flora surveys, and the desktop research for this report, and authored the report. BMcC, Ornithologist and Ecologist with DNV, undertook the Bird Survey for this report. CRK, Ecologist with DNV undertook fauna surveys for this report. LG, BMcC, CRK, BS, KM and AD undertook bat surveys for this report.

HON, Project Ecologist with 4 years' experience in consultancy, has a B.A. in Zoology from Trinity College Dublin. Experience in consulting includes the preparation of ecological assessments, most frequently for Stage I and Stage II Appropriate Assessment (AA), and Ecological Impact Assessments (EcIA) and Biodiversity Chapters for Environmental Impact Assessment Reports (EIAR), desktop studies, field surveys and data analysis (QGIS). Field survey experience includes terrestrial mammal surveys, ornithology surveys, habitat surveys, marine mammal surveys and aquatic surveys. HON is also a Qualifying member of CIEEM.

LG, Senior Ecologist with 5 years of experience in consultancy, has a B.Sc. in Zoology (Hons) and a M.Sc. (Hons) in Wildlife Conservation and Management from University College Dublin. LG is experienced in desktop research, literature scoping-review, and report writing, as well as practical field experience (e.g., bat surveys, habitat surveys, invasive species surveys, wintering bird surveys, large mammals, fresh water macro-invertebrates etc.). LG's MSc thesis was a literature scoping review on the ecosystem services provided by Irish bats. He has also completed best practice guidance courses on bat survey and mitigation techniques such as: 'Bat Ecology & Survey' and 'Bat Impacts and Mitigation' both held by CIEEM. LG is experienced in compiling Biodiversity Chapters of EIARs, EcIAs, AA Screenings and Natura Impact

Statements (NIS) reports, and in the overall assessment of potential impacts to ecological receptors from a range of developments. LG is also a Qualifying member of CIEEM.

BMcC, Ecologist and experienced Ornithologist, has 14 years of bird survey experience. BMcC is a longstanding and active member of Birdwatch Ireland and has provided Ornithology survey work for ecological consultancies (e.g., vantage points surveys of gulls, terns, raptors, waders, and wildfowl; hinterland surveys of the above as well as riverine species; and breeding waders and country birds). BMcC is highly experienced with all survey methodologies and with surveying all species groups of Irish birds and migrants.

CRK, Graduate Ecologist, has a M.Sc. in Biodiversity and Conservation from Trinity College Dublin. CRK's experience as an ecologist is broad both variety of ecological reports and literature, and field surveys conducted. CRK has experience in surveying habitats, birds, plants, bats, mammals and invasive species, with some experience in assessing welfare conditions of animals using behavioural repertoires as indicators. CRK's experience in ecological report writing extends from Research associated literature reviews to Stage I AA Reports and Municipal District Summary reports.

BS, Graduate Ecologist, has a BSc (Hons) in Ecological and Environmental Sciences, and an MSc in Carbon Management from the University of Edinburgh. BS has experience in environmental and ecological data collection, field surveys and report writing and has previously undertaken projects in natural flood management and invasive species mapping. BS has recently gained experience specifically in undertaking desk studies for stage 1 and 2 ecology notes, AA Screenings and has supported in the preparation of various ecological reports.

KM, Graduate Ecologist, has a B.Sc (Hons) in Environmental Biology from University College Dublin. KM has a range of fieldwork experience including mammal, bird, and amphibian surveys in addition to freshwater ecology research. Her deskwork experience includes bat call analysis, habitat mapping, and report writing. KM has contributed to the preparation of several Stage 1 AA Screenings, Stage 2 NISs, and Preliminary Ecological Assessment (PEA)reports.

AD, Intern Ecologist, has a B.Sc. (Hons) in Geoscience from Trinity College Dublin, and a MSc in Applied Environmental Science from University College Dublin. AD's experience includes both geological and ecological field and laboratory work, molecular biomarker analysis, GIS and ecological report preparation. AD is also a student member of CIEEM.

1.2 Relevant Legislation and Policy Context

An EcIA is a process of identifying, quantifying, and evaluating potential effects of development-related or other actions on habitats, species and ecosystems (CIEEM, 2018). The Proposed Development is sub-threshold for an Environmental Impact Assessment (EIA) under the Planning and Development Regulations 2001-2025, as amended.

When an EcIA is undertaken as part of an EIA process it is subject to the EIA Regulations (under the Planning and Development Regulations 2001-2023). An EcIA is not a statutory requirement, however it is a best practice evaluation process. This EcIA is provided to assist the Competent Authority with its decision making in respect of the Proposed Development.

There is a number of pieces of legislation, regulations and policies specific to ecology which underpin this assessment. These may be applicable at a European, National or Local level. Legislation at the International level relevant to the Proposed Development are listed below:

- *Council Directive 92/43/EEC* on the Conservation of Natural Habitats and of Wild Fauna and Flora; hereafter the 'Habitats Directive';
- *Directive 2009/147/EEC*, hereafter the 'Birds Directive';
- *Directive 2011/92/EU*, hereafter the 'EIA Directive';
- EU Regulation 1143/2014, on Invasive Alien Species;

- *Convention on the Conservation of European Wildlife and Natural Habitats 1982*, hereafter the 'Bern Convention';
- *The Convention on the Conservation of Migratory Species of Wild Animals 1983*, hereafter the 'Bonn Convention';
- *Ramsar Convention on Wetlands 1971*, hereafter referred to as 'Ramsar'; and
- *Water Framework Directive 2000/60/EC*, hereafter the 'WFD'.

National legislation and policy relevant to the Proposed Development are listed below:

- Wildlife Act 1976, as amended in 2000;
- Flora (Protection) Order 2022;
- The Planning and Development Act 2000 as amended; and
- National Biodiversity Plan 2023-2030.

Additionally, 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 Special Areas of Conservation (SAC) and/or Special Protection Areas (SPA). 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.

Local plans and policies relevant to the Proposed Development are listed below:

- Dublin City Development Plan 2022 – 2028; and
- Dublin City Biodiversity Action Plan 2021 – 2025.

Further details on legislation and policy relevant to the Proposed Development are detailed in Appendix I - Legislation and Policy.

2 DESCRIPTION OF THE PROPOSED DEVELOPMENT

2.1 Site Location

The Site is located in Dublin City Centre along the Grand Canal, at White Heather Industrial Estate, South Circular Road, Saint James, Dublin 8. It is immediately bordered by the Grand Canal to the south, and by urban residential housing and infrastructure on all other sides. The location of the Site is presented in Figure 1.

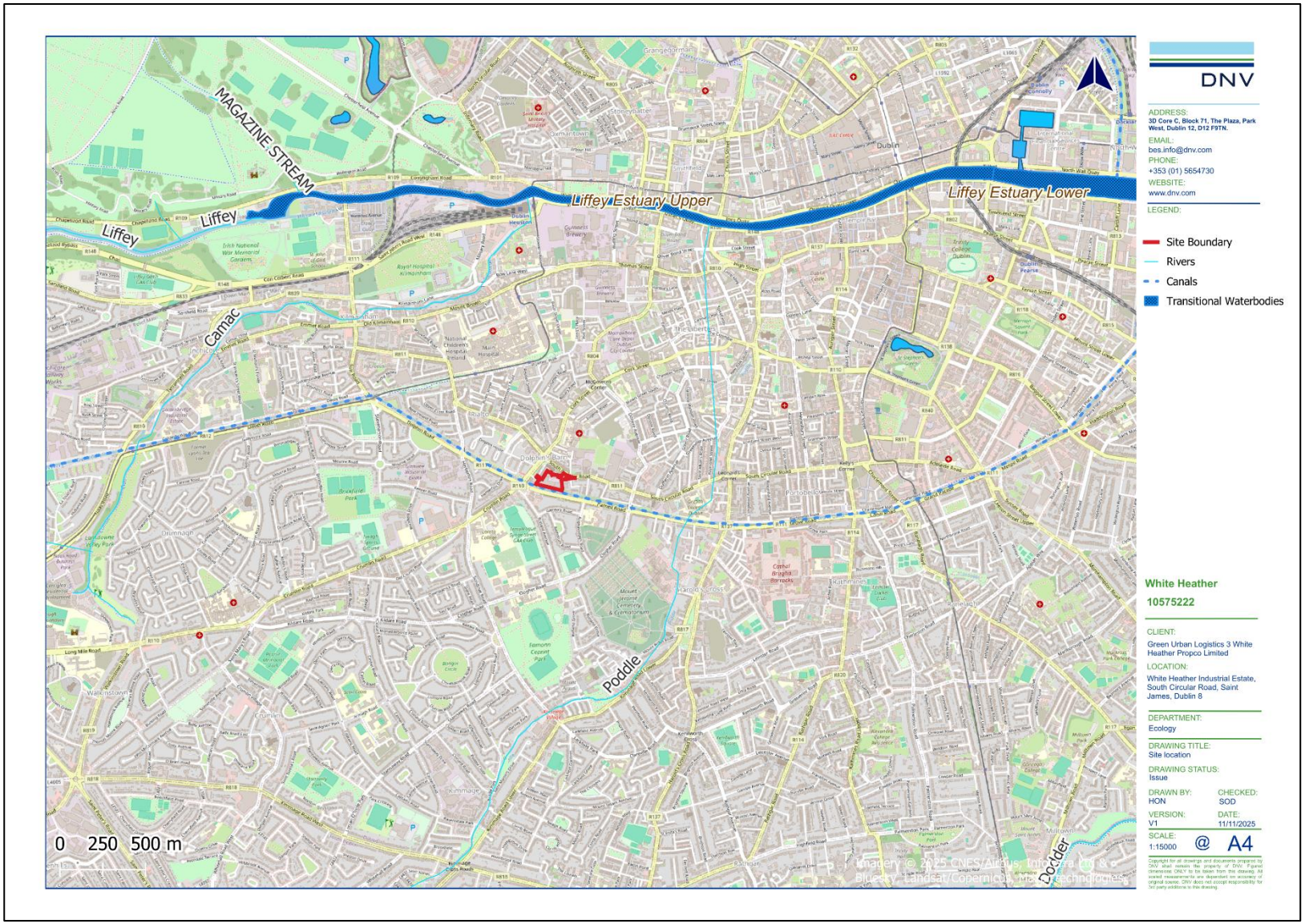


Figure 1. Site location.

2.2 Proposed Development Description

The proposed mixed-use Large-Scale Residential Development (LRD) will comprise the demolition of all existing commercial and warehouse buildings and structures on the site, and the construction of 250 no. residential units within six blocks (Blocks 01, 02(A/B), 03(A/B), 04(A/B), and two duplex blocks) ranging in height up to seven storeys. The development will include 12 no. studio apartments, 148 no. one-bedroom apartments, 74 no. two-bedroom apartments, 8 no. one-bedroom duplex units, and 8 no. two-bedroom duplex units.

All residential units will include private balconies or terraces, oriented north, south, east, or west.

The proposal also includes the conversion of the existing residential dwelling at 307/307A South Circular Road to a crèche with an associated external play area. A new kiosk/café and adjoining open space will be provided adjacent to 307/307A South Circular Road, along with car and bicycle parking. The development will provide public open spaces between Blocks 03 and 04, as well as to the north and south of the apartment blocks, the latter overlooking the Grand Canal, together with communal open spaces throughout the scheme. Vehicular, pedestrian, and cyclist access will be provided from the northeast of the site via South Circular Road, with additional pedestrian and cyclist access from the west via St James's Terrace.

The proposal also includes landscaping, public and communal open spaces, and all associated site development works required to facilitate the project. These works include boundary treatments, plant and waste management areas, and other service provisions, including ESB infrastructure.

2.3 Description of the Construction Phase

As per the Outline Construction Environmental Management Plan (CEMP) (DNV, 2025), the Construction Phase of the Proposed Development will include:

- Excavation of soil and subsoil for the construction of building foundations, drainage and other infrastructure. It is anticipated that there will be no requirement for the excavation of bedrock during the Construction Phase of the Proposed Development;
- Where possible, it is intended to reuse suitable excavated soil and subsoil for landscaping and engineering use. However, where required, surplus materials will require removal offsite in accordance with all statutory legislation;
- The importation of aggregate fill materials will be required for the construction of the Proposed Development (e.g., granular material beneath road pavement, under floor slabs and for drainage and utility bedding/surrounds etc.). There may also be a requirement to import soil for landscaping use;
- There may be a requirement for management of surface water (rainwater) and shallow groundwater, where encountered during groundworks;
- Construction of new foul and mains water connections in accordance with UE Code of Practice for Wastewater Infrastructure (IW-CDS-5030-03), UE's Code of Practice for Water Infrastructure (IW-CDS-5020-03); and
- Construction of new surface water drainage designed in accordance with the principles and objectives of Sustainable Drainage Systems (SuDS), the Greater Dublin Strategic Drainage Study (GDSDS) and the requirements of Dublin City Council.

The layout of the Site is presented in Figure 2.

2.3.1 Programme

It is anticipated that the Construction Phase of the Proposed Development will take approximately 24 months to complete.

The programme duration and proposed sequence of construction will be further developed by the Main Contractor (once appointed) in advance of construction works commencing onsite and will be included in the live CEMP.

2.3.2 Working Hours

Normal site working hours will apply to the Construction Phase of the Proposed Development, namely:

- Monday to Friday: 07:00am to 18:00pm;
- Saturday: 08:00am to 14:00pm; and
- No works are permitted on Sundays or Bank Holidays.

No works are envisaged to be carried out on Sundays or Bank Holidays. However, should there be a need to work on Sundays, Bank Holidays or outside the specified normal working hours, a written submission, with compelling reasons for the proposed deviation, seeking authorisation will be made by the Main Contractor to Dublin City Council. The Main Contractor must give the times and dates of the proposed work, and the mitigation measures that are to be used to minimise noise/disturbance.

Any such approval from Dublin City Council may be subject to conditions pertaining to the particular circumstances being set by Dublin City Council. It is noted that any breaches of permitted working hours or permitted extended working hours or developers or subcontractors not carrying out their requirements under this protocol may lead to enforcement action and may also result in the withdrawal of any extension of hours of works for a period that will be at the discretion of Dublin City Council.

2.4 Description of the Operational Phase

The Operational Phase will comprise of residential use that is consistent with the neighbouring land use in the area.

Figure 2. Site layout (OMP, 2025).

2.5 Drainage and Water Supply

As per the Civil Engineering Infrastructure Report for Planning (BMCE, 2025a), the existing and proposed drainage and water supply infrastructure are outlined below.

2.5.1 Surface Water Drainage

Surface water from the Site discharges to the existing 990x640mm brick combined sewer on South Circular Road at an unattenuated rate. This combined brick sewer is at a depth of approximately 1.9-2m below the existing road level. The Site is currently 100% impermeable.

The proposed surface water drainage system has been developed in accordance with SuDS principles. It is proposed to construct a new surface water drainage system for the development to collect runoff from roofs and paved areas and any additional runoff from landscaped areas which doesn't percolate to ground as follows:

- Intensive green roofs will be provided on the majority of flat-roof areas. The raised podium garden in the centre of the Site as well as all top roof levels will also have a layer of blue roof attenuation underneath the intensive green roof layer, allowing for rainwater falling onto the apartment blocks to be retained and slowly release into the buried drainage system at a controlled outflow;
- Permeable paving will be used for all hard paved roadways, parking bays and footpaths (with the exception of the Site entrance road at the interface with the public roadway), providing attenuation and treatment of rainwater flows. Should infiltration rates prove favourable, then these areas will facilitate the direct infiltration of rainwater to ground. Otherwise, perforated collector pipes laid within the permeable buildup will direct flows towards the new buried drainage system. The drainage design did not rely on infiltration in these areas;
- Additional attenuation will be provided via a buried attenuation tank with downstream flow control, to limit the eventual discharge rate from the Site.
- Soft landscaping will provide interception of rainfall and promote diffuse infiltration into the underlying soils. However, for the purposes of the drainage calculations, it has been assumed that 50% of the proposed landscaped areas will be positively drained, via the application of an appropriate runoff coefficient. This ensures a conservative approach;
- The Site is underlain by clays which are expected to achieve low infiltration rates. The Site infiltration rate has therefore been taken as zero in the design of the drainage system, representing 'worst-case' scenario. Once infiltration tests have been carried out on Site, the design will be reviewed to determine if the volume of below-ground attenuation can be reduced.
- The proposed drainage system will discharge to the existing combined sewer in the South Circular Road to the northeast. The system is designed to accommodate flows for the 1 in 100-year storm event.

2.5.1.1 SuDS

The proposed drainage will be designed in accordance with the principles of SuDS, as embodied in the recommendations of the GDSDS. The overarching principle of SuDS design is that surface water runoff should be managed for maximum benefit.

The following SuDS measures have been proposed in coordination with the landscape architect and wider design team:

- Permeable pavement;
- Green roofs;
- Blue roofs; and
- Attenuation systems.

2.5.2 Foul Drainage

Foul water from the White Heather Industrial Estate (Dolphin's Barn, Dublin 8) drains into the existing combined sewer in South Circular Road. There is an existing 940x620mm diameter brick culvert (combined sewer) running along South Circular Road along the northern boundary of the Site.

New foul drainage will be provided to collect and convey the foul flows from the Proposed Development. The proposed foul drainage layout and connections to the existing public sewer is designed in accordance with the Irish Water Standard Codes of Practice. A minimum pipe diameter of 225mm will be used at gradients no flatter than 1 in 200. It is proposed foul flows will combine with the collected surface water flows, prior to connection to the existing combined sewer in the South Circular Road.

Foul water then flows east through the Dublin City combined drainage network and ultimately discharges to the Ringsend Wastewater Treatment Plant. Treated effluent from Ringsend WwTP is then released to Dublin Bay.

2.5.3 Water Supply

Irish Water Record Drawings indicate that there is a selection of water supply pipe in close proximity. It is intended to connect the new drainage from the Site via the existing 225mm diameter line along the northern boundary of the Site.

The proposed water main layout and connections to existing public water mains have been designed in accordance with Irish Water Standard Codes of Practice All proposed water mains will be HDPE 100 SDR17 in accordance with Irish Water Standards. Individual houses will have their own connections (25mm O.D. PE pipe MDPE 80 SDR11) to distribution water mains via service connections and meter/boundary boxes. A 225mm diameter watermain will be required to serve the water supply and fire-fighting demand for the Proposed Development. Uisce Éireann code of practice suggests 225 pipe for 300 – 700 houses (apartment use noted possibly less as hydrant and road configuration etc different). The proposed water main layout is arranged such that all buildings are a maximum of 46.0m from a hydrant in accordance with the Department of the Environment's Building Regulations "Technical Guidance Document Part B Fire Safety". Hydrants shall comply with the requirements of BS 750:2012 and shall be installed in accordance with Irish Water's Code of Practice and Standard Details.

A Pre-Connection Enquiry (PCE) was submitted to Uisce Éireann to confirm the feasibility of a new connection to the existing network and a confirmation of feasibility was received on 22nd September 2025. The Pre-connection reference number is CDS25003323.

2.6 Flood Risk Assessment

A flood risk assessment was carried out in accordance with the OPW publication "The Planning System and Flood Risk Assessment Guidelines for Planning Authorities" by the Department of the Environment, Heritage and Local Government in November 2009. The Proposed Development is located within Flood Zone C (BMCE, 2025b).

It was concluded that there is no risk of flooding to the Site. Pluvial and groundwater flooding will be managed through the implementation of a new surface water network which will mitigate the risk.

2.7 Landscape Plan

The proposed Landscape Plan (Figure 3) aims to protect and augment the canal system as a linear green/blue infrastructural asset and biodiversity 'highway', strengthening its connection with wider city green infrastructure. Existing mature vegetation along the southern canal bank will be reinforced through lush greenery and a layered planting approach extending into the Site. The two mature trees (copper beech (6141/B) and sycamore (6145/C)) are to be retained, with the beech given a new protective setting and the kiosk foundation designed to avoid root impacts.

Planting will follow a structured, layered strategy ranging from larger street trees to medium multi-stem shrubs, groundcover, and seasonal bulbs, creating varied experiences and ecological interest across the Site. Along the canal

edge, a substantial but non-rigid planting boundary will maintain a permeable nature corridor while enabling future canal links and facilitating Waterways Ireland maintenance access. Green roofs, including intensive systems with PVs and microhabitats such as gravel and logs, will help integrate functional roof elements into a cohesive whole. Existing northern boundary walls will be retained and repaired to support overall Site continuity.

2.8 Lighting Plan

Sensitive lighting is required along the Grand Canal, which functions as a bat commuting and foraging corridor. To avoid disturbance, the southern boundary of the Site will be illuminated using low-level LED strip luminaires integrated into the benches. These luminaires operate at 4.8 W/m, 2700 K, and 500 lm/m, and are installed within 45° shielded profiles that direct light downwards, preventing illumination of the canal or riparian vegetation. The strips are extremely compact (10mm × 4mm) and will be dimmed to 50% output, significantly reducing overall luminance.

This approach follows Bat Conservation Ireland (2010) and ILP GN08/18 guidance for bat-sensitive lighting, including warm CCT, low output, and directional shielding.

Photometric analysis undertaken in Lighting Reality demonstrates that light spill at the canal boundary remains minimal and below bat-sensitive thresholds (<1 lux). Vertical and horizontal calculation grids along the southern edge of the footpath show no significant illumination reaching the canal corridor.

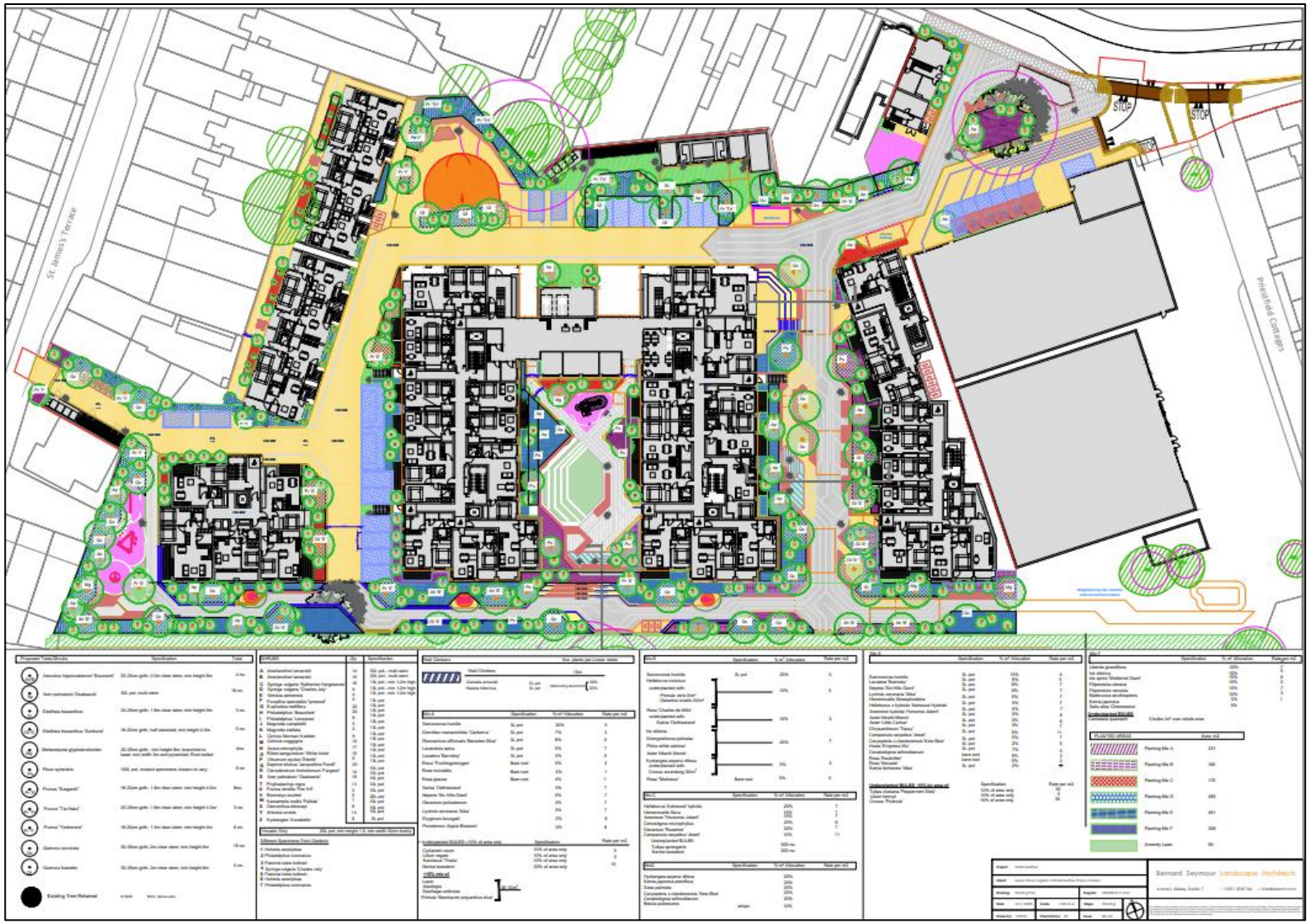


Figure 3. Landscape plan (BSLA, 2025).

3 METHODOLOGY

This EcIA 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 mitigation measures the risk is eliminated or reduced to an insignificant level.

This section details the steps and methodology employed to undertake an ecological impact assessment of the Proposed Development.

3.1 Scope of Assessment

The specific objectives of the study were to:

- Undertake baseline ecological surveys and evaluate the nature conservation importance of the Site;
- 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 the Proposed Development.

3.2 Desk Study

A desktop study was carried out in November 2025 to collate and review available information, datasets and documentation sources pertaining to the Site's natural environment. The desk study, relied on the following sources:

- Information on species records[1] and distributions, obtained from the National Biodiversity Data Centre (NBDC) at *maps.biodiversityireland.ie*;
- Information on the network designated conservation sites, site boundaries, qualifying interests and conservation objectives, obtained from the National Parks and Wildlife Service (NPWS) at *www.npws.ie*;
- Information on waterbodies, catchment areas and hydrological connections obtained from the Environmental Protection Agency (EPA) at *gis.epa.ie*;
- Information on bedrock, groundwater, aquifers and their statuses, obtained from Geological Survey Ireland (GSI) at *www.gsi.ie*;
- Satellite imagery and mapping obtained from various sources and dates including Google, Digital Globe, Bing and Ordnance Survey Ireland;
- Information on the existence of permitted developments, or developments awaiting decision, in the vicinity of the Proposed Development from the Dublin City Council online planning database (*https://planning.agileapplications.ie/dublincity*) and the National Planning Database (DHLGH, 2025); and
- Information on the extent, nature and location of the Proposed Development, provided by the applicant and/or their design team.

A comprehensive list of all the specific documents and information sources consulted in the completion of this report is provided in References.

[1] The Site of the Proposed Development lies within the 10km grid square O13, the 2km grid square O13G and the 1km grid square O1332. Records from the last 20 years from available datasets are given in the relevant sections of this report.

3.3 Zone of Influence

The ZoI for a project is the area over which ecological features may be affected by changes as a result of the Proposed Development and associated activities. This is likely to extend beyond the development site, for example where there are ecological or hydrological links beyond the site boundaries (CIEEM, 2018). The ZoI will vary with different ecological features, depending on their sensitivities to an environmental change.

Furthermore, the ZoI in relation to European sites is described as follows in the 'OPR Practice Note PN01 - Appropriate Assessment Screening for Development Management' (OPR, 2021):

"*The zone of influence of a proposed development is the geographical area over which it could affect the receiving environment in a way that could have significant effects on the Qualifying Interests of a European site. This should be established on a case-by-case basis using the Source-Pathway-Receptor framework and not by arbitrary distances (such as 15 km).*"

Identification of Relevant Designated Sites

To determine the ZoI of the Proposed Development for designated sites, reference was made to the OPR Practice Note PN01 - Appropriate Assessment Screening for Development Management' (OPR, 2021), a practice note produced by the Office of the Planning Regulator, Dublin. This note was published to provide guidance on screening for AA during the planning process, and although it focuses on the approach a planning authority should take in screening for AA, the methodology is also readily applied in the preparation of EcIA reports such as this to identify all relevant designated sites potentially linked to the Proposed Development.

As noted above, the most recent guidance advises against the use of arbitrary distances that serve as precautionary ZoI (e.g., 15km), and instead recommends the application of the Source-Pathway-Receptor (S-P-R) model in the identification of designated sites, stating that "*This should avoid lengthy descriptions of European sites, regardless of whether they are relevant to the proposed development, and a lack of focus on the relevant European sites and issues of importance*". Although this statement refers to European sites, it is also applicable to other designated sites.

Thus, the methodology used to identify relevant designated sites comprised the following:

- Identification of potential sources of effects based on the Proposed Development description and details;
- Identification of potential pathways between the Site of the Proposed Development and any designated sites within the ZoI of any of the identified sources of effects:
    - Water catchment data from the EPA (www.epa.ie) were used to establish or discount potential hydrological connectivity between the Proposed Development and any designated sites;
    - Groundwater and bedrock information used to establish or discount potential hydrogeological connectivity between the Proposed Development and any designated sites;
    - Air and land connectivity assessed based on Proposed Development details and proximity to designated sites; and
    - Consideration of potential indirect pathways (e.g., impacts to flight paths, *ex-situ* habitats, etc).
- Review of Ireland's designated sites to identify those sites which could potentially be affected by the Proposed Development in view of the identified pathways, using the following sources:
    - European sites and nationally designated sites (e.g., NHAs and pNHAs) from the NPWS (www.npws.ie);

- Ramsar sites from the Irish Ramsar Wetland Committee (https://irishwetlands.ie/irish-sites/); and
- Other internationally designated sites (e.g., UNESCO Biospheres).

- Regional development plans to identify any remaining sites or areas designated for nature conservation at a local level.

3.4 Field Surveys

A range of ecological field surveys have been carried out at the Site to date. These are summarised in Table 1. All surveys were carried out at the appropriate time of year by suitably qualified ecologists. No limitations to field surveys were encountered which would prevent robust conclusions being drawn as to the potential impacts of the Proposed Development.

Table 1. Field surveys undertaken at the Site.

Survey	Surveyor	Dates
Preliminary Ecology Survey	HON	24th June 2025
Breeding Bird Scoping Survey	BMcC	12th August 2025
Camera Trap Monitoring	HON	20th August – 11th September 2025
Invasive Species Survey	HON	20th August 2025
Internal Roost Inspection	HON, LG	26th August 2025
Bat Activity Surveys	BMcC, CRK, BS	14th August 18th September 2025
Bat Emergence Survey	BMcC, CRK, KM, AD	17th August 2025

3.4.1 Habitat Surveys

Habitat surveys of the Site were conducted by DNV on 24th June 2025. The optimal survey period for flora and habitats in Ireland is April to September (Smith *et al*., 2010). 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.

Any incidental observations of evidence for rare and/or protected flora were recorded.

The habitats at the Site were also assessed for their potential to support protected and/or notable fauna.

3.4.2 Invasive Species Surveys

An invasive species survey was carried out at the Site on the on 20th August 2025. This included a detailed search for signs or any invasive flora or fauna, with any incidental observations of evidence for invasive species recorded whenever on Site.

3.4.3 Bat Surveys

3.4.3.1 Bat Landscape Suitability

The Bat Conservation Ireland Landscape Suitability Model (Lundy *et al*., 2011) provides a habitat suitability index for bat species across Ireland. The model divides the country into 1km grid squares and ranks the habitat within the squares according to its suitability for various bat species. The scores are divided into five qualitative categories of suitability, namely:

- 0.0000000 - 13.000000: Low
- 13.000001 - 21.333300: Low – Medium
- 21.333301 - 28.111099: Medium

- 28.111100 - 36.444401: Medium – High
- 36.444402 - 58.555599: High

3.4.3.2 Preliminary Bat Roost Assessment

A daytime inspection of the Site was undertaken on 24th June and 26th August 2025. The aim of the inspection was to search for indication of the presence of roosting bats, and to assess the habitat for its ability to support commuting and foraging bats. Buildings and trees on Site were visually assessed from the ground with the aid of a torch and binoculars. The roost inspection comprised a detailed inspection of structures and trees on Site. These were subject to exterior and interior inspections (where possible) to search for evidence of bat use. This includes live and dead specimens, droppings, feeding remains, oil staining and noise (Collins, 2023). Buildings were assessed for cracks and crevices, or entry points to the roof that might support roosting bats, while trees were searched for Potential Roosting Features (PRFs) such as hollow trunks, knot holes, peeling bark, splits, cracks, and crevices (Collins 2023; Andrews 2018).

Collins (2023) recommends that structures and trees are assessed for their ability to support roosting bats under separate categorisations using professional judgement. Sub-categories to consider for structures are as presented in Collins (2023):

- Negligible – No suitable features observed, however, a small element of uncertainty remain;
- Low – A structure with one or more roost features as used by individual bats opportunistically at any time of year;
- Moderate – A structure with one or more roost features that could be used by bats on a regular basis or by a larger number of bats; and
- High – A structure with one or more roost features that are obviously suitable for use by a larger number of bats on a regular basis, and potentially for longer periods of time. These features have the potential to support high conservation status roosts.

Trees are categorized separately according to Collins (2023). These classifications are:

- NONE – Either no PRFs in the tree or highly unlikely to be any;
- FAR – Further assessment required to establish if PRFs are present in the tree; and
- PRF – A tree with at least one PRF present.

Where a tree contains at least one PRF, each PRF is further assessed according to Collins (2023). PRFs are scored as either:

- PRF-I – PRF is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats; or
- PRF-M – PRF is suitable for multiple bats and may therefore be used by a maternity colony.

For trees with PRF-Is only, no further surveys may be required, but appropriate compensation for all PRF-Is must be designed and incorporated in advance of impacts along with a Precautionary Working Method Statement (PWMS). As the Site increases in suitability for roosting bats (e.g., PRF-Ms present), the survey effort increases accordingly. A PRF-M will require a detailed inspection, such as aerial inspection, conducted over three survey visits, a minimum of three weeks apart, which should be carried out between May and September with at least two in the period May to August. Where features are inaccessible by ladder, climbing, or a Mobile Elevating Work Platform (MEWP), or too extensive for a PRF inspection, the aerial inspection should be replaced with emergence surveys carried out between May and September with Night Vision Aids (NVA) where possible or otherwise

surveyed using Advanced Licence Bat Survey Techniques (ALBST), such as trapping, tagging, and radio-tracking to inform of the importance of a roost.

3.4.3.3 Preliminary Bat Habitat Suitability Assessment

A Bat Habitat Suitability Assessment was carried out in conjunction with the roost assessment on 24th June and 26th August 2025. This assessment evaluated the habitats present on Site and in the wider area for bat foraging and commuting suitability. Habitat suitability is assessed qualitatively from Negligible to High:

- Negligible – No suitable foraging or commuting habitats on Site;
- Low – Suitable but isolated habitats that could be used by small numbers of commuting and/or foraging bats, such as poorly connected gappy hedgerows, lone trees, unvegetated streams, etc;
- Moderate – Suitable continuous habitat connected to the wider landscape that could be used by commuting and/or foraging bats, such as treelines, scrub, grassland, water, etc; and
- High – Continuous high-quality habitat that is well-connected to the wider landscape, and is likely used regularly by commuting and/or foraging bats, such as river valleys, broadleaved woodland, woodland edge, grazed parkland, etc.

3.4.3.4 Bat Activity Surveys

The Site was assessed by an experienced ecologist in relation to the potential bat foraging habitat and commuting routes. Two bat activity surveys were undertaken (Summer and Autumn), with one remaining survey to be carried out in April 2026 (Spring). The surveys were undertaken to best practice guidance (Collins, 2023; Marnell *et al*., 2022) during times of suitable weather conditions, as detailed in Table 2.

Table 2. Bat activity surveys' details.

Date	Sunset	Start time	End time	Weather conditions	
				Start	End
14/08/2025	20:55	20:45	22:45	Gentle breeze, dry, 24°C, 0-25% cloud cover.	Gentle breeze, dry, 20°C, 0% cloud cover.
18/09/2025	19:33	19:28	21:15	Light breeze, dry, 19°C, 50% cloud cover.	Moderate breeze, dry, 18°C, 50% cloud cover.

The surveyor was equipped with a Elekon Batlogger M2 detector and powerful L.E.D. torch and head torches. Surveys started at sunset and continued for 2 hours.

Surveyors initially positioned themselves along the canal corridor, a feature identified as a potential bat commuting and foraging route, and close to roost features. Surveyors remained stationary at this location until 30 minutes after sunset. Following this initial period, the survey approach became dynamic and responsive, with surveyors walking transects across the Site. Movement was guided by live observations and acoustic detections, in order to maximise data collection on bat activity.

3.4.3.5 Bat Emergence Surveys

The surveys were conducted by experienced surveyors who were situated in locations that gave good views of the PRFs identified within the Site. The methodology of the emergence/re-entry surveys followed best practice guidelines (Collins, 2023; Marnell *et al*., 2022) with dusk surveys commencing 15 minutes before sunset and lasting until approximately 1.5 – 2 hours after sunset. Details of the date, times and weather conditions are presented in Table 3. The location of assessed roost features is presented in Figure 4.

Table 3. Bat emergence survey details.

Date	Sunset	Start time	End time	Weather conditions	
				Start	End
17/09/2025	19:35	19:20	21:10	Moderate breeze, dry, 18ºC, 50-75% cloud cover.	Gentle breeze, dry, 16ºC, 25-50% cloud cover.

Figure 4. Bat emergence survey roost features and VP locations.

3.4.3.6 Data Analysis

Species were identified from recordings using Elekon's BatExplorer software (Version 2.1.10.1). Bat data was analysed and species assigned to each record with reference to species identification guides such as Russ (2012).

Each record (i.e., a sequence of bat calls/pulses) is noted as a bat pass; to indicate the level of bat activity for each species recorded. Each bat pass does not correlate to an individual bat but is representative of bat activity levels. Some bats such as *Pipistrelle* species may continuously fly around a habitat or feature, therefore, it is possible that a series of bat passes within a similar time frame is representative of an individual bat. On the other hand, Leisler's bats (*Nyctalus leisleri*) tend to travel through an area quickly, and as such, an individual sequence or bat pass is more likely to be indicative of individual bats.

3.4.4 Bird Surveys

A bird scoping survey was carried out on 13th August 2025 to scope out the breeding and non-breeding bird potential, as well as the potential for the Site to be utilised by wintering birds based on the habitats present. Additionally, all bird species encountered during the survey were recorded and activity noted where possible.

The survey methodology employed was based on that recommended in standard literature used by for example the British Trust for Ornithology (BTO) (Gillings *et al,* 2007; Bibby *et al,* 1992; Gilbert *et al*, 1998), which has subsequently been adapted into guidelines for ecological consultants by the Bird Survey & Assessment Steering Group (2022). During the surveys, the Site was walked slowly, approaching all habitat within and adjacent to the Proposed Development and scanning and listening for birds. A final zig-zag walk through the Site was done at the end of the survey to ensure no additional species were missed. The locations of birds seen and heard were mapped using standard BTO codes and activity symbols.

3.4.5 Non-Volant Mammals

A survey for non-volant mammals at the Site was carried out in conjunction with the other field surveys on 24th June 2025. The habitat types recorded throughout the survey were used to assist in identifying the likelihood of specific mammals to utilise the Site. Species searched for focused on terrestrial species, but those that may utilise aquatic habitats such as otter (*Lutra lutra*) were also searched for where possible.

The survey looked for indications of species using the Site such as tracks, fur, prints, droppings, and potential resting places of any species as per guidelines (Bang and Dahlstrom, 2001; NRA, 2005; 2009). This survey considered protected, invasive, or notable fauna that may occur within the Site and the adjacent lands. The surrounding landscape was also assessed for its potential to support mammals where possible, including badger (*Meles meles*) and otter within 50m and 150m boundary buffers respectively (NRA, 2005).

In addition to the walkover survey, a single camera trap was deployed at the Site between 20th August and 11th September 2025, with the camera relocated once during this period to target different areas of likely mammal activity. Placement focused on features such as dense scrub and the canal habitat.

3.4.6 Amphibians

During the ecological assessment on 24th June 2025, the Site was checked for signs of amphibians.

Only three amphibian species are considered native to Ireland, smooth newt (*Lissotriton vulgaris*), common frog (*Rana temporaria*) and the natterjack toad (*Bufo calamatia*). Considering the scarcity of amphibians on the island, these species can be considered indicator species.

Natterjack toad (*Bufo calamita)* is more restricted in its distribution (Counties Kerry and Wexford) and is unlikely to be present in the vicinity of the Site. The Site was also surveyed for potential amphibian breeding habitat (i.e., areas of pooling, wet ditches), and signs of breeding activity (amphibian adults, spawn, and juveniles).

Any survey methodology will take into consideration of the Transport Infrastructure Ireland (TII) '*Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes*', The Irish Wildlife Trust '*National Smooth Newt Survey 2013 Report*' (Meehan, 2013) and the '*National Frog Survey of Ireland 2010/11'* (Reid *et al*., 2013).

3.4.7 Terrestrial Invertebrates

The Site was searched for protected terrestrial invertebrates and habitats which may support these species. Particular attention was given to invertebrates listed on the Habitats directive such as the marsh fritillary (*Euphydryas aurinia*), Kerry slug (*Geomalacus maculosus*), desmoulin's whorl snail (*Vertigo moulinsiana*), narrow-mouthed whorl snail (*Vertigo angustior*) and geyer's whorl snail (*Vertigo geyeri*). Any devil's bit scabious (*Succisa pratensis*) if present on Site was also recorded owing to its importance in supporting the larval stage of the marsh fritillary.

3.5 Ecological Assessment

This EcIA has been undertaken following the methodology set out in 'Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine' (CIEEM, 2018); and with reference to the 'Guidelines for Assessment of Ecological Impacts of National Road Schemes' (NRA, 2009), the 'Guidelines on the information to be contained in Environmental Impact Assessment Reports' (EPA, 2022), and 'BS 42020:2013 Biodiversity: Code of practice for planning and development' (BSI, 2013).

The evaluation of significant effects should be based on available scientific evidence. Based on the precautionary principle, if the available information is not sufficient, then a significant effect may be assumed likely to occur.

3.5.1 Evaluation of Ecological Features

The value of the ecological features (i.e., the habitats and species present or potentially present) was determined using the ecological evaluation at different geographical scales (NRA, 2009), presented in Appendix II. 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. Based on best practice (CIEEM, 2018), any features considered to be less than of local value are not assessed within this EcIA.

3.5.2 Impact Assessment

As per the NRA guidelines, impact assessment is only undertaken of KERs. The assessment of the potential impact of the Proposed Development on the identified KERs was carried out with regard to the criteria outlined in the EPA Guidelines (EPA, 2022), presented in Appendix III. These guidelines set out a number of parameters that should be considered when determining which elements of the Proposed Development could constitute impact or sources of impacts. These include;

- Positive, neutral or negative effect;
- Significance;
- Extent;
- Probability;
- Duration;
- Timing;
- Frequency; and
- Reversibility.

The impact assessment process considers both direct and indirect impacts: direct ecological impacts are changes that are directly attributable to a defined action (e.g., the physical loss of habitat). Indirect ecological impacts are attributable to an action, but which affect ecological resources through effects on an intermediary ecosystem, process, or feature (e.g., the creation of roads which cause hydrological changes, which, in the absence of mitigation, could lead to an adverse effect of a sensitive habitat).

3.5.3 Assessment of Cumulative Impacts and Effects

Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location. Cumulative effects can occur where a Proposed Development results in individually insignificant impacts that, when considered in combination with impacts of other proposed or permitted plans and projects, can result in significant effects.

Relevant plans and policies (see section 1.2) were reviewed to identify any potential for negative cumulative impacts with the Proposed Development. Additionally, existing planning permissions from the past five years within the ZoI of the Proposed Development were reviewed, with particular focus on potential cumulative impacts on the identified KERs. Long-term developments were also considered where applicable.

3.5.4 Avoidance, Mitigation, Compensation and Enhancement Measures

Where potentially significant effects have been identified, the mitigation hierarchy has been applied, as recommended in the CIEEM Guidelines. The mitigation hierarchy sets out a sequential approach beginning with the avoidance of impacts where possible, the application of mitigation measures to minimise unavoidable impacts and then compensation for any remaining impacts. Once avoidance and mitigation measures have been applied residual effects are then identified along with any necessary compensation measures, and incorporation of opportunities for enhancement. When seeking mitigation or compensation solutions, efforts should be consistent with the geographical scale at which an effect is significant. For example, mitigation and compensation for effects on a species population significant at a county scale should ensure no net loss of the population at a county scale. The relative geographical scale at which the effect is significant will have a bearing on the required outcome which must be achieved.

It is important for the EcIA to clearly differentiate between avoidance, mitigation, compensation and enhancement and these terms are defined here as follows:

- Avoidance is used where an impact has been avoided (e.g., through changes in scheme design). In practice, avoidance measures are typically implemented during the design stage via discussions and re-design (e.g., avoiding a sensitive habitat by relocating a building). Avoidance measures are therefore rarely reported within an EcIA, which focuses on assessing the final design;
- Mitigation is used to refer to measures to reduce or remedy a specific negative impact in situ;
- Compensation describes measures taken to offset residual effects (i.e., where mitigation in situ is not possible); and
- Enhancement is the provision of new benefits for biodiversity that are additional to those provided as part of mitigation or compensation measures, although they can be complementary.

3.6 Limitations

Every effort has been made to provide a comprehensive description of the Site; however, the following specific limitations apply to this assessment:

- 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.
- No Spring bat activity survey was conducted due to the timing of the planning application. However, this survey is scheduled for April 2026.

4 ECOLOGICAL BASELINE CONDITIONS

This section sets out the baseline conditions for the ecological features within the Site using the findings of the desk study and field surveys.

4.1 Hydrology

The Site of the Proposed Development is located within the Liffey and Dublin Bay (Catchment ID 09), and the Dodder_SC_010 Sub-catchment (Sub-catchment ID 09_16) (EPA, 2025). There are no waterbodies located within the Site; however, the Grand Canal Main Line is located approximately 10m south of the Site. The Grand Canal Main line flows into the Grand Canal Basin approximately 4km downstream of the Site, which ultimately flows into the Liffey Estuary Lower, and then Dublin Bay.

The nearest waterbody is the Grand Canal Main Line (EU Code: IE_09_AWB_GCMLE), also known as the Grand Canal, located approximately 10m south of the Site. This canal flows eastward and discharges into the Grand Canal Basin (Liffey and Dublin Bay) (EU Code: IE_09_AWB_GCB), located approximately 3.4km northeast of the Site. This waterbody then flows into the Liffey Estuary Lower transitional waterbody (EU Code: IE_EA_090_0300) located approximately 4.1km northeast of the Site, and Dublin Bay coastal waterbody (EU Code: IE_EA_090_0000) located approximately 7.4km northeast of the Site. Approximately 2.5 km upstream (westwards), the Grand Canal is crossed by the Camac river waterbody (EU Code: IE_EA_09C020500). Approximately 0.8km downstream (eastwards), the Grand Canal is crossed by the Poddle river waterbody (EU Code: IE_EA_09P030800). Both river crossings are potentially culverted.

The Grand Canal is currently *At Risk* of not meeting its Water Framework Directive (WFD) objectives and was designated a *Poor* ecological status during the most recent 2019-2024 survey period (EPA, 2025). The Grand Canal Basin is currently *Not at risk* of not meeting its WFD objectives and was designated a *Good* ecological status during the most recent 2019-2024 survey period (EPA, 2025). There are no EPA water monitoring stations located along this canal (EPA, 2025).

The Camac river waterbody is currently *At Risk* of not meeting its Water Framework Directive (WFD) objectives and was designated a *Poor* ecological status during the most recent 2019-2024 survey period (EPA, 2025). The Poddle river waterbody is currently *At risk* of not meeting its WFD objectives and was designated a *Poor* ecological status during the most recent 2019-2024 survey period (EPA, 2025).

The Liffey Estuary Lower transitional waterbody is currently *At Risk* of not meeting its WFD objectives and was designated a *Moderate* ecological status during the most recent 2019-2024 survey period (EPA, 2025). The quality status of the Liffey Estuary Lower transitional waterbody was designated as *Intermediate* by the EPA during the most recent 2018-2020 survey period (EPA, 2025). The Dublin Bay coastal waterbody is currently *Not at Risk* of not meeting its WFD objectives and was designated a *Good* ecological status during the most recent 2019-2024 survey period (EPA, 2025). The quality status of the Dublin Bay coastal waterbody was designated as *Unpolluted* by the EPA during the most recent 2018-2020 survey period (EPA, 2025).

The only EPA monitoring station along the River Poddle is located at Kimmage Manor, approximately 2.9km southwest of the Site, and classified this watercourse as Poor (Q-Value: 3) in 2007 (EPA, 2025).

4.2 Geology and Hydrogeology

The Site of the Proposed Development is situated on the Dublin groundwater body (EU Code: IE_EA_G_008). The bedrock aquifer identified beneath the Site is mapped as “Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones” (Ll) (GSI, 2025). The Groundwater Vulnerability Rating assigned to groundwater beneath the Site is mapped as “Moderate” (M) to contamination from human activity (GSI, 2025).

The underlying bedrock is mapped by GSI and is classified as “Dark limestone & shale (`calp)” (New Code: CDLUCN) (GSI, 2025). The quaternary sediments beneath the Site are mapped as Till derived from limestones (GSI, 2025). The subsoil beneath the Site is Made ground (EPA, 2025).

The Dublin groundwater body is currently *Under review* as to whether it is meeting its Water Framework Directive (WFD) objectives and was designated a *Good* ecological status during the most recent 2019-2024 survey period (EPA, 2025).

The waterbody status for river, groundwater, transitional and coastal water bodies relevant to the Site as recorded by the EPA (2025) in accordance with European Communities (Water Policy) Regulations 2003 (SI no. 722/2003) are provided in Table 4.

Table 4. WFD risk and waterbody status.

Waterbody Name	Waterbody EU code	Location from Site	Distance from Site (km)	WFD Waterbody Status (2019-2024)	WFD 3rd Cycle Risk Status	Hydraulic Connection to the Site
Surface waterbodies						
Camac	IE_EA_09C020500	South	2.5	Poor	At risk	Upstream of the Grand Canal
Grand Canal Main Line	IE_09_AWB_GCMLE	West	0.01	Good	Not at risk	
Poddle	IE_EA_09P030800	East	0.8	Poor	At risk	Downstream of the Grand Canal
Grand Canal Basin (Liffey and Dublin Bay)	IE_09_AWB_GCB	Northeast	3.4	Moderate	Not at risk	Downstream of the Grand Canal
Liffey Estuary Lower	IE_EA_090_0300	Northeast	4.1	Moderate	At risk	Downstream of the Grand Canal Basin
Coastal waterbodies						
Dublin Bay	IE_EA_090_0000	Northeast	7.4	Good	Not at risk	Downstream of the Liffey Estuary Lower
Groundwater bodies						
Dublin	IE_EA_G_008	N/A	N/A	Good	Under review	Underlying GWB

4.3 Site Drainage

The existing ground levels across the overall Site are typically graded from southwest to northeast, the highest points are approximately +23.0mOD at the access road from St James Terrace at the southwest boundary, and existing levels at the lowest point are circa of +22.1mOD at the access road from South Circular Road at the northeast boundary.

4.4 Designated Sites

All European sites potentially linked to the Proposed Development have been identified and fully assessed in the AA Screening Report (Stage 1 AA) and subsequent NIS (Stage 2 AA) accompanying this submission under separate cover. A summary of the AA conclusions is given below.

Other nationally or internationally designated sites potentially linked to the Proposed Development are identified in section 4.4.2.

4.4.1 European sites – Appropriate Assessment

The AA Screening identified five European sites to be at risk of potential significant impacts as a result of the Proposed Development; namely:

- North Dublin Bay SAC
- South Dublin Bay SAC
- North Bull Island SPA
- South Dublin Bay and Tolka Estuary SPA
- North West Irish Sea SPA

Accordingly, an NIS was prepared to assess the impacts in detail and to provide suitable mitigation measures. The following conclusion is extracted from the NIS accompanying this application under separate cover:

"*This NIS details the findings of the Stage 2 AA conducted to further examine the potential direct and indirect impacts of the Proposed Development planning application at White Heather Industrial Estate, South Circular Road, Saint James, Dublin 8, on the following European Sites:*

- *North Dublin Bay SAC (000206);*
- *South Dublin Bay SAC (000210);*
- *North Bull Island SPA (004006);*
- *South Dublin Bay and Tolka Estuary SPA (004024); and*
- *North-west Irish Sea SPA (004236).*

The above sites were identified by a screening exercise that assessed likely significant effects of a range of impacts that have the potential to arise from the Proposed Development. The AA investigated the potential direct and indirect effects of the proposed works, both during Construction and Operational Phases, on the integrity and QIs/SCIs of the above European Site, alone and in combination with other plans and projects, taking into account the site's structure, function and conservation objectives.

Where potentially significant effects were identified, a range of mitigation and avoidance measures have been suggested to avoid them. This NIS has concluded that, once the avoidance and mitigation measures are implemented as proposed, the Proposed Development will not have an adverse effect on the integrity of the above European site(s), individually or in combination with other plans and projects. Where applicable, a suite of monitoring surveys have been proposed to confirm the efficacy of said measures in relation to ensuring no adverse impacts on the habitats of the relevant European sites have occurred.

As a result of the complete, precise and definitive findings of this NIS, it has been concluded, beyond reasonable scientific doubt, that the Proposed Development will have no significant adverse effects on the QIs, SCIs and on the integrity and extent of the aforementioned European sites. Accordingly, the Proposed Development will not adversely affect the integrity of any relevant European site."

4.4.2 Other Designated sites – Potential pathways

Potential impact pathways are discussed in the following sections in the context of the Proposed Development as described in section 2.

4.4.2.1 Direct Pathways

Hydrological pathways

There are no waterbodies present within the Site, and the surrounding area is predominantly built-up. The Site is located approximately 10m north of the Grand Canal pNHA, which flows into Liffey Estuary Lower transitional waterbody, approximately 4.1km northeast of the Site, and the Dublin Bay coastal waterbody, approximately 7.4km northeast of the Site, overlapping with the designated sites:

- UNESCO sites: Dublin Bay Biosphere;
- OSPAR Convention: North Dublin Bay MPA (O-IE-0002968);
- Important Bird Areas (IBA) sites: Dublin Bay IBA (IE004);
- Ramsar sites: North Bull Island Ramsar site (406), Sandymount Strand/Tolka Estuary Ramsar site (832);
- pNHAs: Grand Canal pNHA (002104), North Dublin Bay pNHA (000206), South Dublin Bay pNHA (000210), Dolphins, Dublin Docks pNHA (000118);
- Nature Reserves: North Bull Island Nature Reserve;
- Wildfowl Sanctuaries: The North Bull Island (WFS-19); and
- I-WeBS: Grand Canal (OU310), Dubin Bay (OU404).

Given the proximity of the Grand Canal to the Proposed Development and associated works, and its connection to downstream designated sites via the Liffey Estuary Lower, there is some potential for pollutants entering the network via surface water during the Construction and Operational Phases to reach designated sites in the Grand Canal, Liffey Estuary Lower and Dublin Bay. Impacts via surface waters to the designated sites in Dublin Bay are therefore extremely unlikely, but, out of an abundance of caution, are considered in section 5 below.

Thus, it is considered that a hydrological connection exists between the Proposed Development and the Grand Canal pNHA (002104), and a weak hydrological connection exists between the Proposed Development and the following European sites in Dublin Bay:

- UNESCO sites: Dublin Bay Biosphere;
- Ramsar sites: North Bull Island Ramsar site (406), Sandymount Strand/Tolka Estuary Ramsar site (832);
- pNHAs: North Dublin Bay pNHA (000206), South Dublin Bay pNHA (000210), Dolphins, Dublin Docks pNHA (000118);
- Nature Reserves: North Bull Island Nature Reserve;
- Wildfowl Sanctuaries: The North Bull Island (WFS-19),
- I-WeBS: Grand Canal (OU310), Dubin Bay (OU404); and
- Important Bird Areas (IBA) sites: Dublin Bay IBA (IE004).

The hydrological pathway via the marine environment to the next closest designated site is >11km downstream, over which any potential pollutants that may enter the Liffey or Dublin Bay via drainage from the Site would become diluted to indiscernible levels. Additionally, the Proposed Development will incorporate SuDS features, which will remove pollutants and reduce the current run-off rate. Therefore, the hydrological pathway to these designated sites is considered insignificant.

No other designated sites are hydrologically connected to the Proposed Development.

Hydrogeological pathways

The Site is located within the Dublin GWB.

During groundworks and other construction activities, the ground will be exposed and any potential accidental discharges to ground could potentially migrate vertically downward to the underlying bedrock aquifer and laterally within the aquifer to the downgradient:

- UNESCO sites: Dublin Bay Biosphere;
- Ramsar sites: North Bull Island Ramsar site (406), Sandymount Strand/Tolka Estuary Ramsar site (832);
- pNHAs: Grand Canal pNHA (002104), North Dublin Bay pNHA (000206), South Dublin Bay pNHA (000210), Dolphins, Dublin Docks pNHA (000118);
- Nature Reserves: North Bull Island Nature Reserve;
- Wildfowl Sanctuaries: The North Bull Island (WFS-19),
- I-WeBS: Grand Canal (OU310), Dubin Bay (OU404); and
- Important Bird Areas (IBA) sites: Dublin Bay IBA (IE004).

However, there are no QI groundwater dependent habitats within designated sites downstream of the Proposed Development within the Dublin GWB.

The Liffey Valley pNHA (000128) is located approximately 4.6km northwest of the Site within the Dublin GWB. The site synopsis (NPWS, 2009) notes the presence of wet marsh habitat with common hydrophilic species typically associated with wet alluvial soils or shallow groundwater influence. While not all of the Liffey Valley pNHA is groundwater dependent, the marsh habitat fed by seepage is very likely a groundwater-dependent terrestrial ecosystem.

According to the GSI Summary of Initial Characterisation for the Dublin GWB (GSI, 2025), most groundwater flow in the Dublin GWB is close to the surface with additional isolated flow along fractures and fissures located at depths up to 50 m.b.g.l. The general groundwater flow direction in this aquifer is towards the east coast and the River Liffey and Dublin City. Due to the generally low permeability of the aquifers within this GWB, a high proportion of the recharge from rainfall percolating through the soil will discharge rapidly to surface watercourses via the upper layers of the aquifer. This aquifer is therefore not expected to maintain regional groundwater flow paths and groundwater circulation from recharge to discharge points will more commonly take place over <1km. The GSI summary document notes that there will be highly varied groundwater and surface water interactions occurring within the large area of this GWB, and that the nature of these interactions will be determined by local factors (e.g., depths and permeability of subsoil, slope, local permeability of the rock etc). It is noted that the Groundwater Vulnerability Rating assigned to groundwater beneath the Site is moderate across the entire Site (EPA, 2025).

Given the limited flow distance within the Dublin GWB of <1km, the generally eastwards direction of groundwater flow, the presence of numerous watercourses between the Site and Liffey Valley pNHA (000128), and the location of this pNHA c. 4.6km northwest of the Site, there is no potential for groundwater contaminants from the Site to reach this pNHA.

No other designated sites are hydrogeologically connected to the Proposed Development, owing to the significant distance between the Site and the next nearest designated sites, and accounting for the hydrogeological flow pathways of the underlying Dublin GWB.

Therefore, there are no potential hydrogeological pathways from the Proposed Development to any designated sites and therefore no S-P-R connections exist by hydrogeological means.

Air and land pathways

The Construction Phase of the Proposed Development could introduce dust and noise impacts transferable via air and land pathways, as well as increased lighting and human activity at the Site and in the vicinity of the Site during the Construction and Operational Phases.

The likely ZoI via air and land pathways is considered to be limited to surrounding areas within approx. 200-300m from the Site boundary for any noise and dust sources, depending on prevailing weather conditions. Additionally, light spill is considered to be limited to areas within the Site and habitats immediately adjacent to the boundaries.

The Site is located 8m north of the Grand Canal pNHA (002104). As the Proposed Development will involve excavation activities, there is a potential for dust or airborne sediments to deposit within the Grand Canal during these works, which can affect the composition of the waterbody by causing a larger build-up of silt than would naturally occur, and therefore the protected habitats and species within the Grand Canal. Furthermore, there is a potential for displacement or disturbance to protected species present in the Grand Canal. Therefore, direct impact pathways via air and land exist between the Proposed Development and the Grand Canal pNHA (002104).

The next nearest designated site, the Dublin Bay Biosphere, is located 3.4km east of the Site. Due to the nature and localised scale of the works, emissions to air during the Construction Phase will be limited to temporary dust generation within 25m of the construction site (based on TII assessment criteria for moderate sized construction sites), and emissions from construction machinery and vehicles (NRA, 2006). Given the size of the Site, dust generation and deposition during construction has the potential to degrade habitats within 25m of the Site (NRA, 2006). Therefore, the Dublin Bay Biosphere is not at risk from dust generation during Construction given the distance between the Site and the UNESCO site. There is no potential for release of contained material to air during Operation.

No other designated sites are linked to the Site via air and land pathways due to the distance between the Site and the next nearest designated site (c. 3.6km northeast).

4.4.2.2 Indirect Pathways

Discharge from Ringsend WwTP

According to Uisce Éireann, foul water drainage from Dublin City and its surroundings discharges to Ringsend WwTP Therefore, during the Operational Phase there is an indirect hydrological pathway between the Site and the following designated sites via foul water drainage which discharges in Dubin Bay from Ringsend WwTP:

- UNESCO sites: Dublin Bay Biosphere;
- Ramsar sites: North Bull Island Ramsar site (406), Sandymount Strand/Tolka Estuary Ramsar site (832);
- pNHAs: Grand Canal pNHA (002104), North Dublin Bay pNHA (000206), South Dublin Bay pNHA (000210), Dolphins, Dublin Docks pNHA (000118);
- Nature Reserves: North Bull Island Nature Reserve;
- Wildfowl Sanctuaries: The North Bull Island (WFS-19),
- I-WeBS: Grand Canal (OU310), Dubin Bay (OU404); and
- Important Bird Areas (IBA) sites: Dublin Bay IBA (IE004).

However, this pathway is considered weak, and any effects would be insignificant for several reasons outlined below.

- The completion of the first phase of upgrade works to Ringsend WwTP, which increased the capacity of the facility by 400,000 Population Equivalent (P.E) in December 2021 and the further upgrade works proposed which will increase the capacity of the facility to 2.4 million P.E (Uisce Éireann, 2023);

- The increase of the PE load at the facility as a result of the Proposed Development, assuming each PE unit was not previously supported by the WwTP, is considered to be an insignificant increase in terms of the overall scale of the facility. The increased load does not have the capacity to alter the effluent released from the WwTP to such an extent as to result in likely significant effects on European sites in Dublin Bay; and
- It is considered that effects on marine biodiversity and the European sites within Dublin Bay from the current operation of Ringsend WwTP are unlikely.

Furthermore, the Site will be serviced by Uisce Éireann for wastewater disposal. A Pre-Connection Enquiry was submitted to Uisce Éireann to confirm the feasibility of a new connection to the existing network and a confirmation of feasibility was received on 22nd September 2025. The Pre-connection reference number is CDS25003323.

It is therefore not expected that foul waters generated by the Proposed Development will result in the overloading of Ringsend WwTP. Foul waters from the Proposed Development will not result in impacts to the aforementioned European Sites within Dublin Bay and there is no S-P-R pathway of note via Ringsend WwTP between the Proposed Development and European sites in Dublin Bay.

Ex-situ habitat loss

The habitats present within the Site, including buildings, rooftops, masonry walls, and extensive hardstanding such as paved areas and car parks, are not suitable for use as ex-situ supporting habitat by protected bird species associated with designated sites within the Proposed Development's ZoI. The low quality habitats, and high levels of human activity across the Site do not provide the open, low-disturbance foraging or roosting conditions typically required by species from the nearby designated sites. In addition, the Site is small, fragmented, and heavily urbanised, and is surrounded by more extensive, higher-quality grassland habitats (e.g., Templeogue Synge Street GAA Club and Brickfield Park).

Thus, there is no S-P-R connection between the Proposed Development and designated sites via ex-situ habitat loss.

Collision risk with birds and buildings

The physical location of buildings and structures can influence the likelihood of bird collisions, with structures placed on or near areas regularly used by large numbers of feeding, breeding, or roosting birds, or on a local flight path, such as those located between important foraging and roosting areas, can present a higher risk of collision.

The Site itself is located adjacent to an existing housing development and tall treelines and is not deemed to be located in close proximity or adjacent to any sites designated for waterbird populations, with the closest coastal sites located approx. 5km northeast of the Site. As discussed above, there is no significant *ex-situ* feeding/roosting/staging habitat for any protected bird species of wintering birds listed for the relevant designated sites. Attributes of the Proposed Development further reduce the potential for mortality or injury caused by collision risk, as described below.

<u>Building Height</u>

The Proposed Development will be a max height of 7. This does not exceed the height of the adjacent existing housing development. Birds that commute across the city or in order to reach feeding grounds at various locations would tend to fly above this height and once the proposed structures are made of visible materials (i.e., not entirely comprised of reflective materials such as glass), the birds flying in the vicinity of the buildings will simply fly around or over them.

Protected bird species for designated sites within the ZoI of the Proposed Development, which regularly use or travel over inland areas (i.e., geese, gull species, duck species and a number of waders) in Dublin, navigate the urban environment with built structures daily. To put some context on some of their avoidance capabilities, in a

different setting and for use in collision risk modelling for onshore wind turbines, an avoidance rate of 99.5% is applied for large gull species and an avoidance rate of 99.2% is applied for small gull species (Furness, 2019), which essentially means that 99.5% and 99.2% of gull flights, respectively, will avoid collision with a moving turbine. The risk of collision is even less with a static, clearly detectable building.

Building Appearance

The overall façades of the proposed structures are well broken up, with areas of glazing dispersed across a varied material composition. The opaque materials proposed provide important visible cues as to the presence and extent of the proposed structures to any commuting/foraging bird species should they be in the vicinity of the Site. The overall visual heterogeneity of the building façades will be sufficient to further ensure that the risk of bird collisions as a result of the Proposed Development is extremely low. These architectural design features are part of the overall design of the Proposed Development and are not included as specific mitigation measures to prevent collisions, however, they will contribute to the overall effect in this regard.

As such, based on the heights of the proposed structures and their physical appearance, it is deemed that birds, do not face a significant risk of collision with the Proposed Development. While the presence of the Proposed Development might alter flight patterns of bird species in the area slightly to avoid the proposed building structures, the risk of collision is extremely low. Thus, there is no S-P-R pathway for population level effects or change in distribution of any species, including any protected bird species for designated sites within the ZoI of the Proposed Development, resulting from increased collisions.

4.4.2.3 Relevant Designated Sites

A designated site will only be at risk from likely significant effects where an S-P-R link of note exists between the Proposed Development and the designated site. All designated sites considered as part of the S-P-R method (excl. European sites) are listed in Table 5, and illustrated in Figure 5. Those sites with notable S-P-R links to the Proposed Development are assessed further in this report as KERs of 'National Importance' (pNHAs and NHAs) or 'International Importance' (SACs/SPAs, UNESCO sites, Ramsar sites, etc.).

Table 5. Designated sites considered within the S-P-R method.

Site Name & Code	Distance from Site	Designation Rationale/Site Description	Potential Pathway
Internationally Designated Sites			
Dublin Bay UNESCO Biosphere	5km NE	In 1981, UNESCO recognised the importance of Dublin Bay by designating North Bull Island as a Biosphere because of its rare and internationally important habitats and species of wildlife. To support sustainable development, UNESCO's concept of a Biosphere has evolved to include not just areas of ecological value but also the areas around them and the communities that live and work within these areas. There have since been additional international and national designations, covering much of Dublin Bay, to ensure the protection of its water quality and biodiversity. To fulfil these broader management aims for the ecosystem, the Biosphere was expanded in 2015. The Biosphere now covers Dublin Bay, reflecting its significant environmental, economic, cultural and tourism importance, and extends to over 300km². Over 300,000 people live within the newly enlarged Biosphere.	<u>Construction Phase</u> Weak direct hydrological connection via surface water discharge from the Proposed Development to the Grand Canal, Liffey and downstream designated sites. No other S-P-R pathways of note exist between the Proposed Development and this designated site. <u>Operational Phase</u> No S-P-R pathways of note exist between the Proposed Development and this designated site during the Operational Phase.
OSPAR Convention			
North Dublin Bay MPA (O-IE-0002968)	7.8km NE	*None available, assumed to overlap with North Dublin Bay SAC (NPWS, 2013a):* ***Habitats*** • *Mudflats and sandflats not covered by seawater at low tide [1140]* • *Annual vegetation of drift lines [1210]* • *Salicornia and other annuals colonising mud and sand [1310]* • *Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]* • *Mediterranean salt meadows (Juncetalia maritimi) [1410]* • *Embryonic shifting dunes [2110]*	<u>Construction Phase</u> Weak direct hydrological connection via surface water discharge from the Proposed Development to the Grand Canal, Liffey and downstream designated sites. No other S-P-R pathways of note exist between the Proposed Development and this designated site. <u>Operational Phase</u> No S-P-R pathways of note exist between the Proposed Development and this designated site during the Operational Phase.

Site Name & Code	Distance from Site	Designation Rationale/Site Description	Potential Pathway
		• *Shifting dunes along the shoreline with Ammophila arenaria (white dunes) [2120]* • *Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]* • *Humid dune slacks [2190]* ***Species*** • *Petalophyllum ralfsii (Petalwort) [1395]*	
Important Bird Areas (IBA)			
Dublin Bay IBA (IE004)	5km NE	This site encompasses North Bull Island, Sandymount Strand, Tolka estuary, Dalkey Island area (a number of islands and surrounding waters), and part of Dublin docks. This site is of significance for wintering waterbirds and breeding terns.	Construction Phase Weak direct hydrological connection via surface water discharge from the Proposed Development to the Grand Canal, Liffey and downstream designated sites. No other S-P-R pathways of note exist between the Proposed Development and this designated site. Operational Phase No S-P-R pathways of note exist between the Proposed Development and this designated site during the Operational Phase.
Ramsar Sites			
Sandymount Strand/Tolka Estuary Ramsar site (832)	5km E	The sands support the largest stand of seagrass beds (*Zostera noltii*) on Ireland's east coast. South Dublin Bay is the premier site in Ireland for the Mediterranean gull (*Larus melanocephalus*) and is a regular autumn roosting ground for significant numbers of terns. More than 1% of the global population of light-bellied brent goose (*Branta bernicla hrota*), black-tailed godwit (*Limosa limosa*) and bar-tailed godwit (*Limosa lapponica*) are present in the site. The site is subject to natural eutrophication and is threatened by the accumulation of organic material. It is also affected by disturbances from roads, land conversions and urban wastewater.	Construction Phase Weak direct hydrological connection via surface water discharge from the Proposed Development to the Grand Canal, Liffey and downstream designated sites. No other S-P-R pathways of note exist between the Proposed Development and this designated site. Operational Phase No S-P-R pathways of note exist between the Proposed Development and this designated site during the Operational Phase.
North Bull Island Ramsar site (406)	8.1km NE	The dunes and salt marshes support characteristic plant communities and a number of rare plants which are legally protected. The intertidal habitats feature a rich	Construction Phase

Site Name & Code	Distance from Site	Designation Rationale/Site Description	Potential Pathway
		macrofauna, small areas of eel grass and, in the summer months, green algal mats. The wider estuarine complex provides feeding and roosting habitat for more than 1% of the global population of more than 20 wintering birds, including black-tailed godwit (*Limosa limosa*) and light-bellied brent goose (*Branta bernicla hrota*). The site also supports notable invertebrates. Due to its proximity to the Dublin urban area, the site is impacted by urban wastewater, extensive tourism and roads.	Weak direct hydrological connection via surface water discharge from the Proposed Development to the Grand Canal, Liffey and downstream designated sites. No other S-P-R pathways of note exist between the Proposed Development and this designated site. <u>Operational Phase</u> No S-P-R pathways of note exist between the Proposed Development and this designated site during the Operational Phase.
Proposed Natural Heritage Areas			
Grand Canal pNHA (002104)	8m S	A number of different habitats are found within the canal boundaries - hedgerow, tall herbs, calcareous grassland, reed fringe, open water, scrub and woodland. Otter spraints are found along the towpath, particularly where the canal passes over a river or stream. The smooth newt (*Lissotriton vulgaris*) breeds in the ponds on the bank at Gollierstown in Co. Dublin. The rare and legally protected opposite-leaved pondweed (*Groenlandia densa*) (Flora Protection Order 1987) is present at a number of sites in the eastern section of the Main Line, between Lowtown and Ringsend Basin in Dublin. The ecological value of the canal lies more in the diversity of species it supports along its linear habitats than in the presence of rare species. It crosses through agricultural land and therefore provides a refuge for species threatened by modern farming methods.	<u>Construction Phase</u> Direct hydrological connection via surface water discharge from the Proposed Development to the Grand Canal. Air and land pathways exist due to proximity to the Site. No other S-P-R pathways of note exist between the Proposed Development and this designated site. <u>Operational Phase</u> No S-P-R pathways of note exist between the Proposed Development and this designated site during the Operational Phase.
North Dublin Bay pNHA (000206)	4.7km NE	*None available, assumed to overlap with North Dublin Bay SAC (NPWS, 2013a):* ***Habitats*** • *Mudflats and sandflats not covered by seawater at low tide [1140]* • *Annual vegetation of drift lines [1210]* • *Salicornia and other annuals colonising mud and sand [1310]*	<u>Construction Phase</u> Weak direct hydrological connection via surface water discharge from the Proposed Development to the Grand Canal, Liffey and downstream designated sites. No other S-P-R pathways of note exist between the Proposed Development and this designated site. <u>Operational Phase</u>

Site Name & Code	Distance from Site	Designation Rationale/Site Description	Potential Pathway
		• *Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]* • *Mediterranean salt meadows (Juncetalia maritimi) [1410]* • *Embryonic shifting dunes [2110]* • *Shifting dunes along the shoreline with Ammophila arenaria (white dunes) [2120]* • *Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]* • *Humid dune slacks [2190]* ***Species*** • *Petalophyllum ralfsii (Petalwort) [1395]*	No S-P-R pathways of note exist between the Proposed Development and this designated site during the Operational Phase.
South Dublin Bay pNHA (000210)	5km E	*None available, assumed to overlap with South Dublin Bay SAC (NPWS, 2013b):* ***Habitats*** • *Mudflats and sandflats not covered by seawater at low tide [1140]* • *Annual vegetation of drift lines [1210]* • *Salicornia and other annuals colonising mud and sand [1310]* • *Embryonic shifting dunes [2110]*	
Dolphins, Dublin Docks pNHA (000118)	6.2km NE	*Both common tern and Arctic tern breed in Dublin Docks, on a man-made mooring structure known as the E.S.B. dolphin. Small numbers of common tern and Arctic tern were recorded nesting on this dolphin in the 1980s. A survey in 1995 recorded nationally important numbers of common tern nesting here (52 pairs). The breeding population of common tern at this site has increased, with 216 pairs recorded in 2000. This increase was largely due to the ongoing management of the site for breeding terns. More recent data highlights this site as one of the most important common tern sites in the country with over 400 pairs recorded here in 2007.*	
Nature Reserves			

Site Name & Code	Distance from Site	Designation Rationale/Site Description	Potential Pathway
North Bull Island Nature Reserves	5km NE	The island is covered with dune grassland. An extensive salt marsh lies to the northwest and at extreme low tides there are extensive mud flats between the island and the mainland. The reserves are of international scientific importance for Brent Geese and also on botanical, ornithological, zoological and geomorphological grounds.	<u>Construction Phase</u> Weak direct hydrological connection via surface water discharge from the Proposed Development to the Grand Canal, Liffey and downstream designated sites. No other S-P-R pathways of note exist between the Proposed Development and this designated site. <u>Operational Phase</u> No S-P-R pathways of note exist between the Proposed Development and this designated site during the Operational Phase.
Wildfowl Sanctuary			
The North Bull Island (WFS-19)	5km NE	*None available, assumed to overlap with North Bull Island SPA (NPWS, 2015a):* • *Light-bellied brent goose (Branta bernicla hrota) [A046]* • *Shelduck (Tadorna tadorna) [A048]* • *Teal (Anas crecca) [A052]* • *Pintail (Anas acuta) [A054]* • *Shoveler (Anas clypeata) [A056]* • *Oystercatcher (Haematopus ostralegus) [A130]* • *Golden plover (Pluvialis apricaria) [A140]* • *Grey plover (Pluvialis squatarola) [A141]* • *Knot (Calidris canutus) [A143]* • *Sanderling (Calidris alba) [A144]* • *Dunlin (Calidris alpina) [A149]* • *Black-tailed godwit (Limosa limosa) [A156]* • *Bar-tailed godwit (Limosa lapponica) [A157]* • *Curlew (Numenius arquata) [A160]* • *Redshank (Tringa totanus) [A162]* • *Turnstone (Arenaria interpres) [A169]* • *Black-headed gull (Chroicocephalus ridibundus) [A179]* • *Wetland and Waterbirds [A999]*	<u>Construction Phase</u> Weak direct hydrological connection via surface water discharge from the Proposed Development to the Grand Canal, Liffey and downstream designated sites. No other S-P-R pathways of note exist between the Proposed Development and this designated site. <u>Operational Phase</u> No S-P-R pathways of note exist between the Proposed Development and this designated site during the Operational Phase.

Site Name & Code	Distance from Site	Designation Rationale/Site Description	Potential Pathway
Irish Wetland Bird Survey (I-WeBS)			
Grand Canal (OU310)	8m S	*None available, assumed to overlap with Grand Canal pNHA above.*	Construction Phase Direct hydrological connection via surface water discharge from the Proposed Development to the Grand Canal. Air and land pathways exist due to proximity to the Site. No other S-P-R pathways of note exist between the Proposed Development and this designated site. Operational Phase No S-P-R pathways of note exist between the Proposed Development and this designated site during the Operational Phase.
Dubin Bay (OU404)	5km NE	*None available, assumed to overlap with North Bull Island SPA and South Dublin Bay and River Tolka Estuary SPA (NPWS, 2015a; 2015b):* • *Arctic tern (Sterna paradisaea) [A194]* • *Bar-tailed godwit (Limosa lapponica) [A157]* • *Black-headed gull (Chroicocephalus ridibundus) [A179]* • *Black-tailed godwit (Limosa limosa) [A156]* • *Common tern (Sterna hirundo) [A193]* • *Curlew (Numenius arquata) [A160]* • *Dunlin (Calidris alpina) [A149]* • *Golden plover (Pluvialis apricaria) [A140]* • *Grey plover (Pluvialis squatarola) [A141]* • *Knot (Calidris canutus) [A143]* • *Light-bellied brent goose (Branta bernicla hrota) [A046]* • *Oystercatcher (Haematopus ostralegus) [A130]* • *Pintail (Anas acuta) [A054]* • *Redshank (Tringa totanus) [A162]* • *Ringed plover (Charadrius hiaticula) [A137]* • *Roseate tern (Sterna dougallii) [A192]* • *Sanderling (Calidris alba) [A144]*	Construction Phase Weak direct hydrological connection via surface water discharge from the Proposed Development to the Grand Canal, Liffey and downstream designated sites. No other S-P-R pathways of note exist between the Proposed Development and this designated site. Operational Phase No S-P-R pathways of note exist between the Proposed Development and this designated site during the Operational Phase.

Site Name & Code	Distance from Site	Designation Rationale/Site Description	Potential Pathway
		• *Shelduck (Tadorna tadorna) [A048]* • *Shoveler (Anas clypeata) [A056]* • *Teal (Anas crecca) [A052]* • *Turnstone (Arenaria interpres) [A169]* • *Wetland and Waterbirds [A999]*	

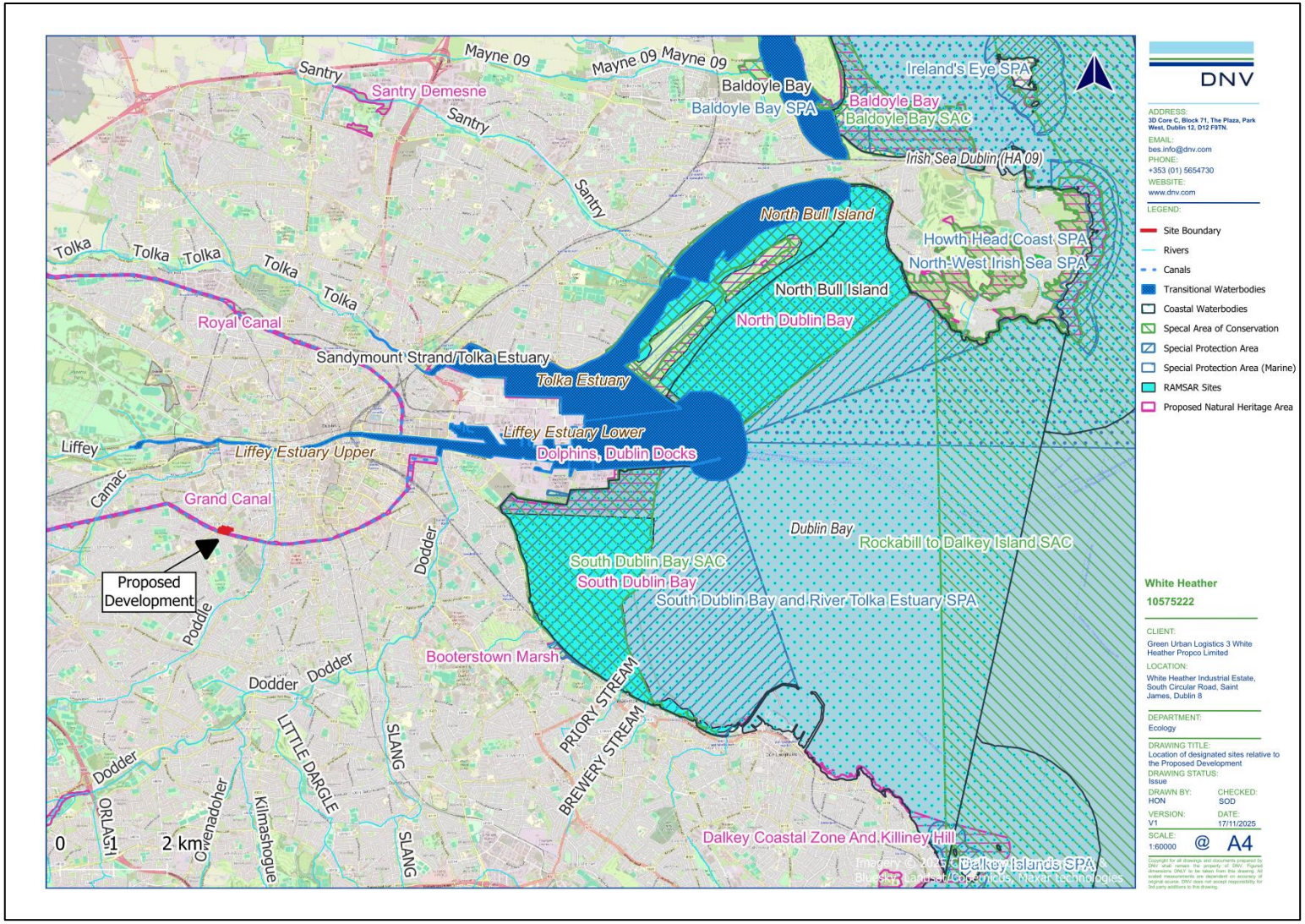


Figure 5. Location of designated sites relative to the Proposed Development.

4.5 Habitats

The habitats present within the Site, as recorded in the survey area during the field survey on 25th June 2025, are described in this section. Where applicable, adjacent and linked habitats surrounding the Site are also described to provide ecological context, including any designated or sensitive habitats.

Site photographs of these habitats are included in Appendix IV, and a habitat map is presented in Figure 6.

The Site was predominantly characterised by industrial infrastructure, including buildings, rooftops, masonry walls, and extensive hardstanding such as paved areas and car parks. Vegetation was generally sparse and restricted to colonising species typical of disturbed urban environments, often growing in cracks, crevices, and unmanaged corners. Small patches of managed amenity grassland and ruderal vegetation were present mainly along the Site boundaries, alongside limited areas of scrub. Scattered mature trees also occurred around the perimeter, providing some additional habitat value.

Immediately to the south of the Site lies the Grand Canal, designated as a pNHA. The canal supports a slow-moving watercourse with associated aquatic and riparian vegetation including reed fringes and emergent species. This linear habitat corridor offers important ecological connectivity within the surrounding urban and agricultural landscape, serving as a refuge for a variety of wildlife including mammals, amphibians, and aquatic plants.

4.5.1 BL1 – Stone walls and other stonework

Stone walls within the Site comprised built structures typical of urban industrial environments. This habitat was limited to the northern boundary of the Site. These walls provide potential roosting and foraging habitats for bats and invertebrates. Vegetation growing on the walls was sparse but included climbing species such as ivy (*Hedera helix*) and occasional butterfly bush (*Buddleja davidii*), which colonise cracks and crevices, providing limited but valuable microhabitats.

Photograph 1, Appendix IV

4.5.2 BL3 – Buildings and artificial surfaces

The majority of the Site was characterised by industrial infrastructure including rooftops, masonry walls, paved surfaces, and other hardstanding areas. Vegetation was restricted mainly to colonising species such as butterfly bush and ivy, establishing in unmanaged corners and cracks. These habitats indicate a low-lying, disturbed urban environment with minimal soil substrate and limited biodiversity value.

Other herbaceous species recorded in small numbers include willowherb spp., herb Robert (*Geranium robertianum*), and common dandelion (*Taraxacum officinale*). Despite the harsh environment, these plants provide some foraging opportunities for urban-adapted invertebrates and birds.

Photograph 2, Appendix IV

4.5.3 BC4 – Flower beds and borders

This habitat type was recorded in a limited area along the northeastern and eastern Site boundary, adjacent to the Site access from South Circular Road and along the interface with the public footpath. It comprised planted ornamental species within small beds and strips. The species composition was not diverse and was largely dominated by non-native, low-structural-value plants typical of urban landscaping, including perennial ryegrass (*Lolium perenne*), plum trees, and Siberian dogwood hedge (*Cornus alba*).

This habitat provides minimal ecological function and is considered to be of low biodiversity value. However, it may occasionally offer potential nesting opportunities for small passerine birds and support various invertebrates.

Photograph 3, Appendix IV

4.5.4 GA2 – Amenity grassland (improved)

Located along the southern boundary between the industrial estate and the canal, the amenity grassland was a managed, species-poor sward dominated by grasses. Noted species include grass spp. (dominant), common dandelion (occasional), creeping buttercup (*Ranunculus repens*) (occasional), and one mature sycamore (*Acer pseudoplatanus*) (rare).

No indicators of species-richness or semi-natural grassland were present. This habitat is of low ecological value due to its limited species diversity and intensive management but forms an important buffer zone adjacent to the canal corridor.

Photograph 4, Appendix IV

4.5.5 ED3 – Recolonising bare ground

The area along the southwest boundary of the Site comprised previously developed and now disused ground that was formerly a carpark and access route to industrial buildings. Vegetation is ruderal and disturbed in nature, with species such as bramble (*Rubus fruticosus agg*.) (dominant), red valerian (*Centranthus ruber*) (frequent), false oat grass (*Arrhenatherum elatius*) (occasional), dock (*Rumex* spp.) (occasional), rosebay willowherb (*Chamerion angustifolium*) (occasional), and sycamore (rare).

The vegetation provides moderate ecological value as early successional habitat with potential for foraging and shelter for invertebrates and small mammals.

Photograph 5, Appendix IV

4.5.6 WS1 – Scrub

A small patch of scrub was recorded along the northwest boundary of the Site, between a building and a stonewall. This area was characterised by a mix of bramble, butterfly bush, ivy, and occasional regenerating sycamore.

The scrub appeared unmanaged and provided some cover and shelter for fauna, including small mammals and foraging birds. However, the dominance of the invasive species butterfly bush reduces the overall ecological value of the habitat. While offering limited habitat function, this scrub patch is considered of low ecological value and will require appropriate management or removal as part of Site clearance and vegetation management plans.

Photograph 6, Appendix IV

4.5.7 Adjacent and Linked Habitats

4.5.7.1 GS2 – Dry meadows and grassy verges/WS1 – Scrub

In the southeast corner outside the RLB, adjacent to the canal, the habitat was dominated by tall grasses and ruderal species with scattered scrub and a mature plum tree. Notable species included false oat grass (abundant), reed canary grass (*Phalaris arundinacea*) (frequent), creeping thistle (*Cirsium arvense*) (frequent), nettle (*Urtica dioica*) (occasional), bindweed (*Convolvulus arvensis*) (occasional), bramble (occasional), winter heliotrope (*Petasites fragrans*) (occasional), Himalayan blackberry (*Rubus armeniacus*) (occasional), orchard grass (*Dactylis glomerata*) (occasional), and a mature plum tree (rare).

Photograph 7, Appendix IV

South of the Site, along the canal, the disturbed riparian corridor supported tall herbaceous vegetation with scattered scrub and invasive species. Dominant and frequent species include nettle (dominant), bindweed (abundant), false oat grass (frequent), reed canary grass (frequent), fringed willowherb (*Epilobium ciliatum*) (frequent), Alexander's (*Smyrnium olusatrum*) (occasional), bramble (occasional), and broad-leaved willowherb (*Epilobium montanum*) (occasional). Several mature dead trees covered in ivy provided valuable habitat features. An extensive cluster of butterfly bush was present, contributing to the structural diversity of the corridor.

Photograph 8, Appendix IV

These habitats form part of the riparian corridor and support structural diversity beneficial for local wildlife, particularly invertebrates and small mammals.

4.5.7.2 FW3 – Canals

The Grand Canal, located 10m south of the Site, is designated as a pNHA. This man-made waterway and its banks support a diverse range of habitats including hedgerow, tall herbs, reed fringes, scrub, woodland, and open water. Notable species observed during field surveys include yellow pond lily (*Nuphar lutea*).

The canal provides important linear connectivity, offering refuge and habitat for a variety of species such as otter, smooth newt, and several protected aquatic plants. Its ecological value lies primarily in this diversity and connectivity, supporting wildlife movement and biodiversity beyond the Site boundary.

Photograph 9, Appendix IV

Figure 6. Map of habitats present at the Site.

4.6 Species and Species Groups

4.6.1 Flora

4.6.1.1 Rare and Protected Flora

The Site of the Proposed Development is located within the Ordnance Survey 10km (O13), 2km (O13G) and 1km (O1332) grid squares. Species records from the NBDC online database show that these grid squares were studied for the presence of rare and/or protected species within the last 20 years.

This database contained records of protected flora within the last 20 years, including FPO listed species; namely, betony (*Stachys officinalis*), great burnet (*Sanguisorba officinalis*), hairy St John's-wort (*Hypericum hirsutum*), hairy violet (*Viola hirta*), meadow barley (*Hordeum secalinum*), meadow crane's-bill (*Geranium pratense*) and purple spurge (*Euphorbia peplis*), the regionally extinct species, purple spurge (*Euphorbia peplis*), and the vulnerable species, meadow crane's-bill (*Geranium pratense*), within the 10km Grid Square (O13). There were no records for rare and/or protected species within the 2km Grid Square (O13G) or 1km Grid Square (O1332).

Table 6 presents details of the rare and protected flora records within the NBDC database.

Table 6. Records of rare or protected flora for the surrounding grid squares from the NBDC.

Name	Grid Square	Date of last record	Database	Designation
Betony (*Stachys officinalis*)	O13	18/05/2012	Ireland's BioBlitz	FPO IUCN Red List 2016: Near threatened
Great burnet (*Sanguisorba officinalis*)	O13	30/09/2016	Ireland's BioBlitz	FPO IUCN Red List 2016: Vulnerable
Hairy St John's-wort (*Hypericum hirsutum*)	O13	23/07/2020	Aras an Uachtaráin Biodiveristy Audit 2019-2020	FPO IUCN Red List 2016: Vulnerable
Hairy violet (*Viola hirta*)	O13	18/05/2012	Ireland's BioBlitz	FPO IUCN Red List 2016: Vulnerable
Meadow barley (*Hordeum secalinum*)	O13	31/12/2007	Irish Crop Wild Relative Database	FPO IUCN Red List 2016: Vulnerable
Meadow crane's-bill (*Geranium pratense*)	O13	20/07/2020	Aras an Uachtaráin Biodiveristy Audit 2019-2020	IUCN Red List 2016: Vulnerable
Purple spurge (*Euphorbia peplis*)	O13	30/09/2016	Ireland's BioBlitz	IUCN Red List 2016: Regionally Extinct

There were no rare or protected flora noted during field surveys.

4.6.1.2 Invasive Species

There were records for 33 species of flora considered to be invasive within the grid squares which encompass the Site. The four invasive plant species that were recorded within the O1332 (1km) grid square were listed under the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011), namely Canadian waterweed (*Elodea canadensis*), Japanese knotweed (*Fallopia japonica*), New Zealand pigmyweed (*Crassula helmsii*) and Nuttall's waterweed (*Elodea nuttallii*).

Details of these records are listed in Table 6.

Table 7. Records of invasive species of flowering plant for the surrounding grid squares from the NBDC.

Species	Grid square	Date of last record	Database	Designation
American skunk-cabbage (*Lysichiton americanus*)	O13	29/03/2019	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Medium Impact Invasive Species Regulation S.I. 477/2011 (Ireland)
Brazilian giant-rhubarb (*Gunnera manicata*)	O13	29/03/2019	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Medium Impact Invasive Species Regulation S.I. 477/2011 (Ireland)
Butterfly-bush (*Buddleja davidii*)	O13 O13G	30/06/2025	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Medium Impact Invasive Species
Canadian fleabane (*Conyza canadensis*)	O13	26/10/2020	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Medium Impact Invasive Species
Canadian waterweed (*Elodea canadensis*)	O13 O13G O1332	25/05/2022	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	High Impact Invasive Species Regulation S.I. 477/2011 (Ireland)
Cherry laurel (*Prunus laurocerasus*)	O13	26/01/2023	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	High Impact Invasive Species
Common broomrape (*Orobanche minor*)	O13	26/06/2021	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Medium Impact Invasive Species
Evergreen oak (*Quercus ilex*)	O13	01/06/2020	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Medium Impact Invasive Species
Fallopia japonica x sachalinensis = F. x bohemica	O13 O13G	17/06/2015	National Invasive Species Database	High Impact Invasive Species Regulation S.I. 477/2011 (Ireland)
False-acacia (*Robinia pseudoacacia*)	O13	20/06/2021	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Medium Impact Invasive Species
Giant hogweed (*Heracleum mantegazzianum*)	O13	07/05/2025	National Invasive Species Database	High Impact Invasive Species Regulation S.I. 477/2011 (Ireland)
Giant knotweed (*Fallopia sachalinensis*)	O13	03/08/2017	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	High Impact Invasive Species Regulation S.I. 477/2011 (Ireland)
Giant-rhubarb (*Gunnera tinctoria*)	O13	28/06/2020	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	High Impact Invasive Species Regulation S.I. 477/2011 (Ireland)

Himalayan balsam (*Impatiens glandulifera*)	O13 O13G	09/05/2025	National Invasive Species Database	High Impact Invasive Species Regulation S.I. 477/2011 (Ireland)
Himalayan honeysuckle (*Leycesteria formosa*)	O13	14/08/2024	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Medium Impact Invasive Species
Japanese knotweed (*Reynoutria japonica*)	O13 O13G O1332	09/05/2025	National Invasive Species Database	High Impact Invasive Species Regulation S.I. 477/2011 (Ireland)
Japanese rose (*Rosa rugosa*)	O13	29/07/2023	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Medium Impact Invasive Species
Narrow-leaved ragwort (*Senecio inaequidens*)	O13 O13G	07/07/2023	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Medium Impact Invasive Species
New Zealand pigmyweed (*Crassula helmsii*)	O13 O13G O1332	31/07/2009	National Invasive Species Database	High Impact Invasive Species Regulation S.I. 477/2011 (Ireland)
Nuttall's waterweed (*Elodea nuttallii*)	O13 O13G O1332	10/05/2023	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	High Impact Invasive Species Regulation S.I. 477/2011 (Ireland)
Pampas-grass (*Cortaderia selloana*)	O13	15/01/2019	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Medium Impact Invasive Species
Parrot's-feather (*Myriophyllum aquaticum*)	O13 O13G	31/07/2009	National Invasive Species Database	High Impact Invasive Species Regulation S.I. 477/2011 (Ireland)
Ragweed (*Ambrosia artemisiifolia*)	O13	06/09/2022	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Medium Impact Invasive Species
Sea-buckthorn (*Hippophae rhamnoides*)	O13	31/08/2022	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Medium Impact Invasive Species Regulation S.I. 477/2011 (Ireland)
Spanish bluebell (*Hyacinthoides hispanica*)	O13	30/03/2021	National Invasive Species Database	Regulation S.I. 477/2011 (Ireland)
Sycamore (*Acer pseudoplatanus*)	O13 O13G	28/11/2024	National Invasive Species Database	Medium Impact Invasive Species
Three-cornered garlic (*Allium triquetrum*)	O13 O13G	19/05/2025	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Medium Impact Invasive Species Regulation S.I. 477/2011 (Ireland)
Traveller's-joy (*Clematis vitalba*)	O13	07/09/2024	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Medium Impact Invasive Species
Tree-of-heaven (*Ailanthus altissima*)	O13	25/10/2009	Heritage Trees of Ireland	Medium Impact Invasive Species

Turkey oak (*Quercus cerris*)	O13	09/05/2019	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Medium Impact Invasive Species
Wall cotoneaster (*Cotoneaster horizontalis*)	O13	30/11/2021	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Medium Impact Invasive Species
Wild parsnip (*Pastinaca sativa*)	O13	09/07/2022	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Medium Impact Invasive Species

During field surveys on 24th June and 20th August 2025, a number of non-native invasive plant species were recorded within the Site and its surrounding habitat, some of which are listed under the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011).

Japanese knotweed was identified along the western boundary (section 4) with active regrowth observed, including bonsai shoots and crown material (Photograph 10, Appendix IV). A specialist contractor (Japanese Knotweed Company) surveyed the Site and estimated the infestation covers approximately 650m², requiring excavation to a depth of 1.8m (approx. 2,340 tonnes of infested soil). Due to the presence of this high-impact invasive species, a site-specific management plan, including NPWS licensing, biosecurity protocols, and off-site disposal to an authorised facility, will be required. The presence of asbestos within buildings on Site poses a risk of waste reclassification to hazardous if not addressed prior to invasive soil removal.

Other invasive species recorded include:

- Butterfly bush – widespread across several areas (sections 1, 2, 3, 6), known to colonise disturbed urban habitats;
- Cotoneaster spp. – present in Sections 1 and 2, some species within this genus are listed under the Third Schedule;
- Sycamore – observed in Sections 1 and 6, naturalised and considered invasive in woodland and scrub contexts;
- Winter heliotrope (*Petasites fragrans*) – extensive in canal-side areas (Sections 5 and 6), while not legally regulated, it is recognised as locally invasive and capable of displacing native ground flora; and
- Himalayan blackberry (*Rubus armeniacus*) and large bindweed (*Calystegia silvatica*) – both present along the canal boundary, not regulated but known to aggressively spread in disturbed habitats.

Site photographs of these invasive plant species are included in Appendix IV (Photographs 10-15), and a map showing their locations is presented in Figure 7.

Figure 7. Location of invasive species recorded on Site.

4.6.2 Bats

4.6.2.1 NBDC Database

There were records for 11 bat species within the grid squares which encompass the Site.

Details of these records are listed in Table 8.

Table 8. Records of bat species for the surrounding grid squares from the NBDC.

Species	Grid square	Date of last record	Database	Designation
Brown long-eared bat (*Plecotus auritus*)	O13	08/07/2021	National Bat Database of Ireland	EU Habitats Directive - Annex IV Wildlife Act 1976 (as amended)
Common pipistrelle (*Pipistrellus pipistrellus sensu stricto*)	O13 O13G	08/08/2023	National Bat Database of Ireland	
Daubenton's bat (*Myotis daubentonii*)	O13 O13G O1332	08/08/2023	National Bat Database of Ireland	
Leisler's bat (*Nyctalus leisleri*)	O13 O13G	08/08/2023	National Bat Database of Ireland	
Myotis bat species (*Myotis*)	O13	25/05/2020	Aras an Uachtaráin Biodiveristy Audit 2019-2020	
Nathusius's pipistrelle (*Pipistrellus nathusii*)	O13	15/09/2020	National Bat Database of Ireland	
Natterer's bat (*Myotis nattereri*)	O13	06/06/2021	National Bat Database of Ireland	
Pipistrelle (*Pipistrellus pipistrellus sensu lato*)	O13 O13G	21/11/2022	National Bat Database of Ireland	
Soprano pipistrelle (*Pipistrellus pygmaeus*)	O13	08/08/2023	National Bat Database of Ireland	
Whiskered bat (*Myotis mystacinus*)	O13	13/08/2007	National Bat Database of Ireland	

4.6.2.2 Bat Landscape Suitability

The Site (indicated in the black box in Figure 8) is located in an area with an overall Low-Medium (18.33) suitability for bats in general. The suitability index for specific bat species is presented in Table 9. The landscape suitability index is high for one species of bat; Leisler's Bat (*Nyctalus leislerii*). Species that have been recorded in the NBDC database within the 10km (O13) grid square are highlighted in green.

Table 9. Landscape suitability index for individual bat species within the 2km (O13G) grid square (Source: NBDC).

Bat Species	Suitability Index (2km Grid Square)
Soprano pipistrelle *(Pipistrellus pygmaeus)*	33 (Medium-High)
Brown Longed-eared bat *(Plecotus auritus)*	23 (Medium)
Common pipistrelle *(Pipistrellus pipistrellus)*	31 (Medium-High)
Lesser horseshoe bat *(Rhinolophus hipposideros)*	0 (Low)
Leisler's bat *(Nyctalus leisleri)*	37 (High)
Whiskered bat *(Myotis mystacinus)*	13 (Low)
Daubenton's bat *(Myotis daubentonii)*	11 (Low)
Nathusius' pipistrelle (*Pipistrellus nathusii*)	10 (Low)
Natterer's bat *(Myotis nattereri)*	7 (Low)

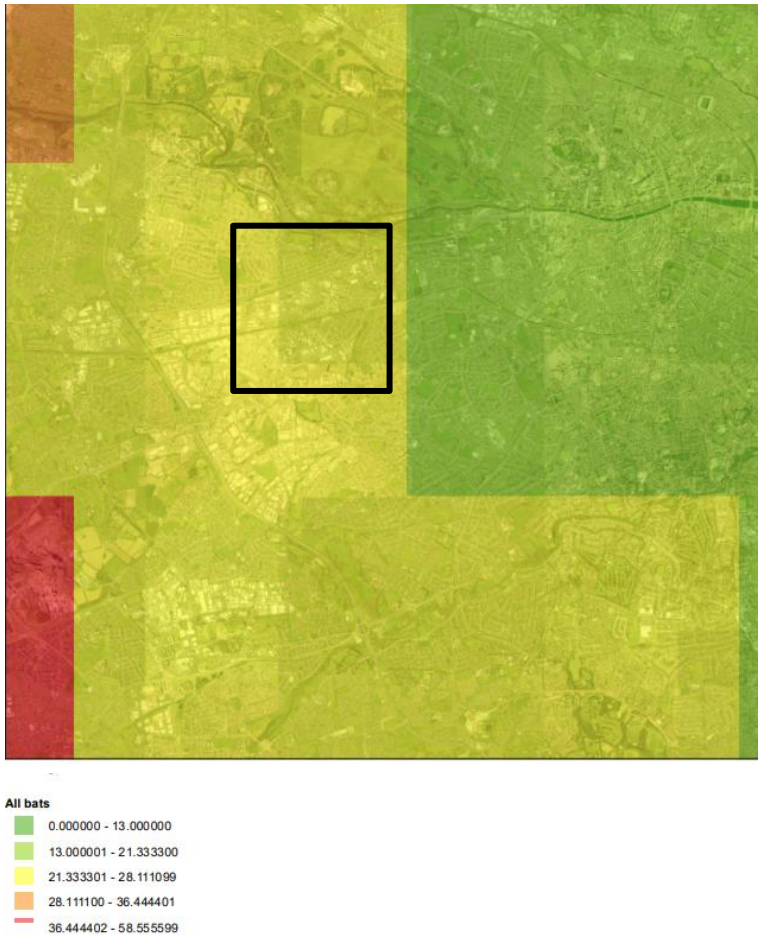


Figure 8. Bat landscape suitability model (all bats) surrounding the Site (Source: NBDC).

4.6.2.3 Preliminary Bat Roost and Habitat Suitability Assessment

A Preliminary Bat Roost Assessment and Bat Habitat Suitability Assessment were undertaken during site visits on 24th June and 26th August 2025.

Roost Potential – Structures

The Site comprised a number of industrial buildings of varying ages and condition. These structures were assessed for bat roost potential using exterior inspections and, where safe and accessible, internal inspections. No evidence of current or historic bat roosts (e.g., droppings, staining or feeding remains) was recorded during the surveys.

However, several buildings were noted to contain features of potential interest, including lifted flashing, gaps at roof edges, and access to internal cavities (Photographs 16-17, Appendix IV). Based on these observations, the buildings on Site were considered to be of 'Low to Moderate' suitability for roosting bats. These features may support individual opportunistic bats or small groups, particularly during transitional periods (e.g., spring or autumn).

It was recommended that emergence surveys be undertaken prior to any demolition or renovation works affecting these structures.

Roost Potential – Trees

All mature and semi-mature trees within the Site were assessed from the ground using binoculars and torches. The few trees within the Site were either immature or lacked suitable structural features. No PRFs were identified during the assessment, and as such, all trees were classified as having 'NONE' suitability for roosting bats (Collins, 2023). No further surveys of trees are required.

Habitat Suitability – Foraging and Commuting

The majority of the Site consists of built infrastructure, hardstanding, and disturbed ground with minimal vegetation cover. On-site habitat was therefore assessed as having 'Low' suitability for commuting and foraging bats, with limited potential provided by boundary scrub, colonising species, and occasional small trees. These features may attract low levels of insect prey but are largely isolated and poorly connected within the urban context.

However, the Grand Canal, located immediately south of the Site, was identified as a feature of 'High' suitability for commuting and foraging bats. The canal provides a linear, insect-rich corridor, with riparian vegetation and a sheltered flight path, increasing the likelihood of regular bat activity. This corridor enhances the ecological value of the wider area and increases connectivity between fragmented urban green spaces.

4.6.2.4 Bat Activity Surveys

Two bat activity transects were carried out, which recorded low levels of bat activity within the Site itself, with notably higher activity concentrated along the canal corridor, just south of the Site.

Common pipistrelle and soprano pipistrelle were the dominant species recorded across both transects. Leisler's bat and Nathusius' pipistrelle were also recorded occasionally.

A third bat activity survey is scheduled for next spring to supplement the existing dataset and confirm seasonal patterns of bat use.

The combined results from the two transects are presented in Figure 9.

4.6.2.5 Bat Emergence Surveys

A bat emergence survey was undertaken on 17th September 2025. No bat emergences were recorded from any of the four vantage points surveyed, indicating an absence of roosting bats within the assessed structures at that time.

Incidental observations noted commuting and foraging activity along the canal, consistent with the patterns identified during the bat activity transects. Species recorded included common pipistrelle, soprano pipistrelle and Leisler's bat.

The incidental evidence from this survey is presented in Figure 10.

4.6.2.6 Evaluation

Although a range of bat species were recorded within the wider 10 km and 2 km grid squares, the Site itself supports only low-quality roosting, foraging and commuting habitat, with no confirmed roosts identified during surveys.

Buildings on-site offer Low–Moderate roost potential but showed no evidence of current or historic use, while trees present no roosting opportunities. Bat activity within the Site was consistently low, with higher levels concentrated along the Grand Canal corridor. Overall, bats are considered to be of Local Importance (Higher Value) due to the presence of several species in the wider area and the proximity of the high-value canal corridor, but the Site itself is of Low suitability and supports limited bat activity

Figure 9. Bat activity survey results.

Figure 10. Bat emergence survey results.

4.6.3 Birds

4.6.3.1 NBDC Database

There were records for 72 bird species that were amber or red listed, as identified on the Birds of Conservational Concern in Ireland (BoCCI) (Gilbert *et al*., 2021), within the grid squares which encompass the Site.

Details of amber and red listed species are listed in Table A5.1, Appendix V.

4.6.3.2 Bird Scoping Survey

During the bird scoping survey on 13th August 2025, a total of nine species of birds were recorded. Of these, three species are currently listed as Amber on the BoCCI list; namely, herring gull (*Larus argentatus*), house sparrow (*Passer domesticus*), and starling (*Sturnus vulgaris*) (Gilbert *et al.,* 2021). The remaining species included five Green-listed species, with one species unclassified.

Details of these records are listed in Table 10.

Table 10. Bird species recorded during bird scoping survey.

Species	BoCCI Status	Date recorded	Activity
Feral Pigeon (*Columba livia domestica*)	Unclassified	13th Aug 2025	Non-breeder. Flyovers.
Goldfinch (*Carduelis carduelis*)	Green	13th Aug 2025	Landed on trees at the back of the Site.
Herring Gull (*Larus argentatus*)	Amber	13th Aug 2025	One on the canal (outside RLB). Many flyovers.
Hooded Crow (*Corvus cornix*)	Green	13th Aug 2025	Flyovers only.
House Sparrow (*Passer domesticus*)	Amber	13th Aug 2025	Flyover.
Magpie (*Pica pica*)	Green	13th Aug 2025	One flyover.
Starling (*Sturnus vulgaris*)	Amber	13th Aug 2025	Three vocal birds in trees.
Woodpigeon (*Columba palumbus*)	Green	13th Aug 2025	One feeding on Site, many more flyovers.
Wren (*Troglodytes troglodytes*)	Green	13th Aug 2025	Singing individual.

4.6.3.3 Evaluation

Bird activity across the Site was low, reflecting both the time of year (being post-breeding season) and the limited availability of suitable habitat. The Site is largely comprised of built infrastructure and hardstanding with minimal vegetation, offering little in terms of nesting, foraging, or sheltering opportunities for birds.

Based on the available habitats and field observations, the Site is considered to be of low local ornithological value. The adjacent Grand Canal provides a more suitable linear habitat for birds, but no significant bird usage was observed within the Site boundary.

4.6.4 Mammals (excl. bats)

4.6.4.1 NBDC Database

There were records for 18 terrestrial mammals (ten native and eight non-native or invasive) within the grid squares which encompass the Site.

Details of these records are listed in Table 11.

Table 11. Records of terrestrial mammals for the surrounding grid squares from the NBDC.

Species	Grid Square	Date of last record	Database	Designation
Native Species				
Badger (*Meles meles*)	O13	01/09/2020	Aras an Uachtaráin Biodiversity Audit 2019-2020	Wildlife Act 1976 (as amended)
Hedgehog (*Erinaceus europaeus*)	O13	17/08/2023	Hedgehogs of Ireland	Wildlife Act 1976 (as amended)
Otter (*Lutra lutra*)	O13 O13G O1332	16/07/2018	Mammals of Ireland 2016-2025	Wildlife Act 1976 (as amended) EU Habitats Directive – Annex II & IV
Pine marten (*Martes martes*)	O13	13/12/2021	Mammals of Ireland 2016-2025	Wildlife Act 1976 (as amended) EU Habitats Directive – Annex V
Pygmy shrew (*Sorex minutus*)	O13	06/01/2023	Mammals of Ireland 2016-2025	Wildlife Act 1976 (as amended)
Red squirrel (*Sciurus vulgaris*)	O13	28/06/2022	Mammals of Ireland 2016-2025	Wildlife Act 1976 (as amended)
Irish hare (*Lepus timidus subsp. hibernicus*)	O13	06/12/2022	Mammals of Ireland 2016-2025	Wildlife Act 1976 (as amended)
Irish stoat (*Mustela erminea subsp. hibernica*)	O13	16/08/2024	Irish Stoats of Ireland	Wildlife Act 1976 (as amended)
Red fox (*Vulpes vulpes*)	O13 O13G O1332	26/03/2023	Mammals of Ireland 2016-2025	Not legally protected
Non-native Species				
American mink (*Neovison vison*)	O13	05/10/2024	National Invasive Species Database	High Impact Invasive Species Regulation S.I. 477/2011 (Ireland)
Brown rat (*Rattus norvegicus*)	O13 O13G O1332	14/04/2023	Mammals of Ireland 2016-2025	High Impact Invasive Species Regulation S.I. 477/2011 (Ireland) – Offshore Islands Only
Fallow deer (*Dama dama*)	O13	04/12/2022	Mammals of Ireland 2016-2025	High Impact Invasive Species Regulation S.I. 477/2011 (Ireland)

Ferret (*Mustela putorius subsp. furo*)	O13	12/08/2018	Mammals of Ireland 2016-2025	High Impact Invasive Species
Greater white-toothed shrew (*Crocidura russula*)	O13	19/06/2017	National Invasive Species Database	Medium Impact Invasive Species
Grey squirrel (*Sciurus carolinensis*)	O13 O13G O1332	29/03/2025	National Invasive Species Database	High Impact Invasive Species Regulation S.I. 477/2011 (Ireland)
House mouse (*Mus musculus*)	O13	25/07/2018	Mammals of Ireland 2016-2025	High Impact Invasive Species
Rabbit (*Oryctolagus cuniculus*)	O13	15/06/2020	Aras an Uachtaráin Biodiversity Audit 2019-2020	Medium Impact Invasive Species

There were records for four marine mammals within the grid squares which encompass the Site. There were no waterbodies recorded within the Site, however, the Grand Canal, located 10m south of the Site, flows into the Liffey Estuaries, and into Dublin Bay, where these species could occur.

Details of these records are listed in Table 11.

Table 12. Records of marine mammals for the surrounding grid squares from the NBDC.

Species	Grid Square	Date of last record	Database	Designation
Common dolphin (*Delphinus delphis*)	O13	16/05/2019	IWDG Cetacean Strandings Database	Wildlife Act 1976 (as amended) EU Habitats Directive – Annex IV
Common porpoise (*Phocoena phocoena*)	O13	14/03/2023	IWDG Cetacean Strandings Database	Wildlife Act 1976 (as amended) EU Habitats Directive – Annex II & IV
Fin whale (*Balaenoptera physalus*)	O13	04/10/2019	IWDG Cetacean Strandings Database	Wildlife Act 1976 (as amended) EU Habitats Directive – Annex IV
Grey seal (*Halichoerus grypus*)	O13	29/06/2022	Explore Your Shore	Wildlife Act 1976 (as amended) EU Habitats Directive – Annex V

4.6.4.2 Field Surveys

The Site provides low suitability for terrestrial mammals, primarily due to the absence of significant vegetation or shelter features such as woodland, hedgerows, or undisturbed grassland. The limited cover and sparse foraging resources reduce its ability to support a diverse or abundant mammal assemblage. Open or disturbed ground conditions dominate much of the area, further limiting the potential for most mammal species.

Several small burrows and signs of digging were observed along the canal banks during the walkover survey on 24th June 2025, which may indicate the presence of otter, or other small mammals, although there was no evidence such as spraint, tracks, or feeding remains recorded.

Site photographs of potential mammal activity are included in Appendix IV (Photographs 18-20).

To supplement the walkover assessment, a single camera trap was deployed on-site from 20th August to 11th September 2025. The camera was repositioned once during this period to target features likely to be used by mammals, including dense scrub and canal-side vegetation. Each location was monitored for a minimum of two weeks to maximise the chances of detecting nocturnal or cryptic species.

Camera trap data confirmed the presence of:

- Red fox (*Vulpes vulpes*) – recorded occasionally (Photograph 21, Appendix IV), consistent with transient use of the Site for movement and opportunistic foraging;
- Domestic cat (*Felis catus*) – frequent, likely from adjacent residential areas; and
- Bird species (e.g., blackbird (*Turdus merula*), wren (*Troglodytes troglodytes*), magpie (*Pica pica*) and grey heron (*Ardea cinerea*)).

No other mammal species were detected, and no evidence of protected or priority mammal species was recorded during the deployment period.

4.6.4.3 Evaluation

The Site is assessed as being of low ecological value for mammals at the local level. Habitat suitability is limited by sparse cover and poor foraging resources, and both walkover and camera trap surveys confirmed the presence of only common, urban-adapted species such as red fox and domestic cat. While minor signs of digging were observed along the canal banks, no definitive evidence of protected or notable species (e.g., otter or badger) was recorded. The Site likely functions as a transient or foraging area for a small number of generalist species, with no indication of significant breeding or resting activity. As such, mammals are not considered to represent a significant ecological receptor in relation to the proposed development.

4.6.5 Amphibians

There were records for common frog and smooth newt within the grid squares which encompass the Site from the NBDC database. Common frog and smooth newt are protected under the Wildlife Act 1976 (as amended).

Amphibian habitat noted across the Site was highly limited. The canal provided some aquatic habitat, but its depth, flow, and frequent disturbance significantly reduce its suitability for breeding amphibians. No amphibians were observed during the walkover survey on 24th June 2025, and no field signs such as spawn, tadpoles, or adult individuals were recorded. The adjacent scrub and grassland habitats along the canal banks may offer occasional shelter or foraging opportunities for species such as common frog, however, the absence of suitable breeding habitat makes regular or sustained use unlikely. Smooth newt is considered unlikely to occur due to its preference for clean, still water bodies and its relative scarcity in urban environments. Natterjack toad does not occur in the Dublin area and is limited to coastal habitats in the southwest of Ireland.

Based on the lack of suitable aquatic breeding habitat and absence of field evidence, the Site is assessed as being of negligible ecological value for amphibians. While common frog may occasionally use terrestrial features for refuge or foraging, the Site does not support key habitat features required for amphibian lifecycle completion. No protected or notable amphibian species are expected to be present, and therefore, amphibians are not considered a significant ecological receptor in relation to the proposed development.

4.6.6 Invertebrates

There were records for protected terrestrial invertebrates within the grid squares which encompass the Site from the NBDC database. Marsh fritillary (*Euphydryas aurinia*), protected under the Habitats Directive – Annex II, tawny mining bee (*Andrena fulva*), listed as 'Regional Extinct', gooden's nomad bee (*Nomada goodeniana*), forester (*Adscita statices*), listed as 'Endangered', scarce blue-tailed damselfly (*Ischnura pumilio*), buffish mining bee (*Andrena nigroaenea*), and narrow-bordered five-spot burnet (*Zygaena lonicerae*), listed as 'Vulnerable', were recorded.

Survey results indicate that the bankside vegetation along the southern boundary of the Site, adjacent to the Grand Canal, supports a moderate diversity of invertebrate species. Observations included dragonflies, bees, and a small tortoiseshell butterfly (*Aglais urticae*), suggesting the presence of suitable nectar sources and foraging habitat for

pollinators and other flying insects. Vegetation such as bramble and various herbaceous flowering plants provide essential resources including nectar, pollen, and shelter, attracting common, urban-tolerant species such as hoverflies and butterflies. No rare, notable, or protected invertebrate species were recorded during the survey. Although marsh fritillary was recorded in the O13 grid square, no individuals of this species or it's associated food plant (devil's bit scabious (*Succisa pratensis*)), were recorded during the field surveys.

The invertebrate assemblage is assessed as being of low to moderate ecological value at the site level, typical of urban canal environments. While the presence of flowering vegetation supports generalist pollinators and contributes to urban biodiversity, the habitat is relatively limited in extent and species richness. No habitats of particular value to specialist or conservation-priority invertebrates are present, and no rare or protected species were identified. Therefore, invertebrates are not considered a KER in the context of the Proposed Development, although retention or enhancement of flowering vegetation could provide minor biodiversity benefits.

4.6.7 Fish

No aquatic habitats suitable for fish were identified within the Site boundary itself. However, the adjacent Grand Canal, located immediately south of the Site, is a designated pNHA and supports aquatic habitats that may include protected fish species such as European eel (*Anguilla anguilla*), which was recorded within grid squares encompassing the Site on the NBDC database, and is listed as 'Critically Endangered'. While salmonids and lampreys are not expected given the canal's characteristics, the canal serves as an important aquatic corridor within the urban environment.

Given the limited extent of suitable fish habitat adjacent to the Site and the absence of more sensitive species, fish are assessed as being of local importance at a lower value within the context of the Site and its immediate surroundings.

4.6.8 Protected and/or Notable Species unlikely to occur at the Site

Other notable and/or rare species and species listed on Annex IV of the Habitats Directive that were considered but that are unlikely to occur at the Site include:

- **Flora**
    - Marsh saxifrage (*Saxifraga hirculus*) – Known populations only in Co. Mayo;
    - Killarney fern (*Vandenboschia speciosa*) – Nearest known populations in Co. Wicklow, not recorded at the Site, no suitably sheltered and moist habitats available; and
    - Slender naiad (*Najas flexilis*) – A clear water, lowland lake species. No suitable habitat available at the Site.
- **Fauna**
    - White-clawed crayfish (*Austropotamobius pallipes*) – Not present in the Grand Canal and Liffey, adjacent ditches and streams not considered suitable for this species due to low quality;
    - Freshwater pearl mussel (*Margaritifera margaritifera*) – Nearest known records from the Barrow catchment to the west of the Site, no hydrological connection to this catchment. Grand Canal and Liffey are not listed as a M. margaritifera sensitive area;
    - Natterjack toad (*Epidalea calamita*) – Distribution restricted to few coastal sites; and
    - Kerry slug (*Geomalacus maculosus*) – Distribution restricted to south and west of Ireland.

4.7 Evaluation of Ecological Features

Habitats have been evaluated for their conservation importance, based on the NRA evaluation scheme (NRA, 2009). Those selected as KERs are those which are evaluated to be of at least local importance (higher value).

Fauna that has the potential to utilise the Site and immediate area, or for which records exist in the wider area, have been evaluated for their conservation importance. This evaluation follows the '*Guidelines for Assessment of Ecological Impacts of National Road Schemes*' (NRA, 2009).

The impacts of the Proposed Development on the identified KERs are assessed in section 5. Table 13 summarises the evaluation rating assigned to each ecological feature and the rationale behind these evaluations is also provided. Those identified as KERs are highlighted in green.

Table 13. Evaluation of designated sites, habitats, flora and fauna recorded within the Site and the surrounding area.

Species/ Species Group	Evaluation	Rationale	KER
Designated sites			
European sites	International Importance	A weak hydrological connection exists between the Proposed Development and downstream Dublin Bay internationally designated sites. However, due to the distance (>7 km), attenuation, and dilution of any potential contaminants, these sites are not considered KERs.	No
UNESCO sites • Dublin Bay Biosphere			
OSPAR Convention • North Dublin Bay MPA (O-IE-0002968)			
IBAs • Dublin Bay IBA (IE004)			
Ramsar Sites • North Bull Island Ramsar site (406) • Sandymount Strand/Tolka Estuary Ramsar site (832)			
pNHAs • Grand Canal pNHA (002104) **I-WeBS** • Grand Canal (OU310)	National Importance	A hydrological connection exists between the Proposed Development and these adjacent designated sites within the Grand Canal. Only the Grand Canal pNHA and associated Grand Canal I-WeBS site are considered KERs, due to their close proximity to the Site (8m).	**Yes**
pNHAs • North Dublin Bay pNHA (000206) • South Dublin Bay pNHA (000210) • Dolphins, Dublin Docks	National Importance	A weak hydrological connection exists between the Proposed Development and downstream Dublin Bay internationally designated sites. However, due to the distance (>7 km), attenuation, and dilution of any potential contaminants, these sites are not considered KERs.	No

Species/ Species Group	Evaluation	Rationale	KER
pNHA (000118)			
Nature Reserves • North Bull Island Nature Reserve			
Wildfowl Sanctuaries • The North Bull Island (WFS-19)			
I-WeBS • Dubin Bay (OU404)			
Habitats			
BL1 – Stone walls and other stonework BL3 – Buildings and artificial surfaces	Local Importance (Lower Value)	Stone walls within the Site provide limited but notable microhabitats. Cracks, crevices, and colonising vegetation (e.g., ivy and butterfly bush) may support invertebrates and offer roosting potential for bats. However, the extent is small, the walls are not old or species-rich, and they are typical of urban environments. These features support limited ecological functions.	No
BL3 – Buildings and artificial surfaces	Local Importance (Lower Value)	Hardstanding, rooftops, and masonry walls dominate the Site and provide minimal opportunities for biodiversity. While they may support colonising plants, nesting birds, or roosting bats in some contexts, there is no specific evidence from the Site to suggest important use by protected species. Given their widespread and disturbed nature, the habitat holds low value but is not entirely negligible.	No
BC4 – Flower beds and borders	Local Importance (Lower Value)	This habitat consists mostly of ornamental, non-native plantings with low species diversity and limited structural complexity. They provide some resources for urban pollinators and occasional bird foraging, but are artificial and maintained, reducing their ecological value.	No
GA2 – Amenity grassland (improved)	Less than Local Importance	Species-poor, frequently mown grassland. This habitat offers very limited foraging or refuge value for wildlife.	No
ED3 – Recolonising bare ground	Local Importance (Lower Value)	This ruderal, disturbed habitat supports early-succession vegetation with moderate floral diversity. It can support invertebrates, pollinators, and occasional small mammals and birds. While not rare, these habitats can add ecological function in urban settings. However, the habitat is of low ecological value, is widespread, and no features of conservation concern are present.	No
WS1 – Scrub	Local Importance (Lower Value)	Scrub provides cover, nesting opportunities, and foraging resources for birds and small mammals, especially in urban contexts	No

Species/ Species Group	Evaluation	Rationale	KER
		where such features are fragmented. However, the extent here is small, and the scrub is dominated by invasive species (e.g., butterfly bush), which reduces its overall value.	
Adjacent and Linked Habitats			
GS2 – Dry meadows and grassy verges/WS1 – Scrub	Local Importance (Higher Value)	This area, located adjacent to the Grand Canal but outside the RLB, supports a diverse mosaic of tall grasses, ruderal vegetation, and scattered scrub, including native and non-native species. The mix of species provides foraging, nesting, and cover opportunities for a variety of species, including invertebrates, birds, and small mammals. Despite some presence of invasive species, the area contributes to connectivity to the riparian corridor and is of greater ecological function than the habitats within the Site.	**Yes**
FW3 – Canals	Local Importance (Higher Value)	The canal supports aquatic vegetation, reed fringes, riparian scrub, and features such as deadwood and mature trees. Species potentially supported include otter, pollinators, and possibly amphibians and fish in the slower-flowing sections. Its value is enhanced by its role as a wildlife corridor through an urban landscape, supporting species movement and ecological processes.	**Yes**
Flora			
Rare & Protected Flora	Local Importance (Lower Value)	Although several protected and rare plant species are recorded within the grid squares on the NBDC database, no such species were recorded during the field surveys. The Site is heavily urbanised and largely composed of disturbed, artificial, or managed habitats, which lack the structural or soil characteristics typically associated with rare or semi-natural flora.	No
Invasive Species	Negligible value	Several non-native invasive plant species were recorded across the Site. Japanese knotweed, in particular, represents a high-risk ecological and management issue, requiring regulated removal and off-site disposal. While invasive species can alter native plant communities and reduce biodiversity, their presence does not provide positive ecological value. Instead, they indicate ecological degradation and a need for remediation.	**Yes**
Native Fauna			
Bat Assemblage	Local Importance (Higher Value)	Potentially suitable habitat adjacent to Site of the Proposed Development. Limited access to these habitats and low transect survey	**Yes**

Species/ Species Group	Evaluation	Rationale	KER
		effort accounted for by considering bats as potentially higher value receptor.	
Bird Assemblage	Local Importance (Lower Value)	Bird activity recorded within the Site was limited, both in terms of species diversity and abundance, which reflects the lack of suitable habitat. The timing of the survey (post-breeding season) may have influenced detectability, but overall, the Site offers low ecological value for birds. Although the adjacent Grand Canal corridor offers higher habitat value for generalist and riparian species, no significant bird activity was observed within the Site boundary.	No
Mammal Assemblage	Local Importance (Lower Value)	The Site provides limited habitat suitability for terrestrial mammals due to the dominance of hardstanding, built structures, and sparse vegetation. Key mammal-supporting features such as woodland, hedgerows, or species-rich grassland are absent. Field surveys and extended camera trap monitoring recorded only widespread, urban-adapted species, with no evidence of protected or notable mammals such as otter, badger, or pine marten. While possible digging or burrows were observed along the canal bank, no field signs (e.g., tracks, spraint, holts) were found to confirm the presence of protected species. The Site may be used occasionally by generalist species for transient movement or opportunistic foraging, particularly along the canal corridor, but it does not provide suitable conditions for breeding, resting, or regular occupation.	No
Amphibians	Negligible value	Although amphibian species are recorded within grid squares encompassing the Site on the NBDC database, there were no live observations or field signs during the walkover survey. The Site lacks suitable aquatic breeding habitat, with the adjacent canal offering deep, flowing, and frequently disturbed conditions that are generally unsuitable for breeding amphibians. While the canal-side scrub and grassland may occasionally provide terrestrial refuge or foraging for common frog, the absence of breeding features and urban context significantly limits the Site's potential to support a sustainable amphibian population.	No
Invertebrates	Local Importance (Lower Value)	While records exist for protected invertebrate species within grid squares encompassing the Site on the NBDC database, none of these species or their key habitats were identified during the field surveys. The bankside vegetation along the Grand Canal supports a moderate diversity of common, urban-tolerant invertebrates. The flowering plants and scrub provide nectar, pollen, and shelter resources suitable	No

Species/ Species Group	Evaluation	Rationale	KER
		for generalist pollinators, but the extent and species richness of habitats remain limited and typical of disturbed urban canal environments. However, the enhancement of flowering vegetation could offer minor biodiversity gains by supporting common pollinator populations.	
Fish	Local Importance (Lower Value)	Fish presence is restricted to the adjacent canal, which provides some suitable aquatic habitat, including for protected species such as European eel. However, the fish community is expected to be of low diversity and typical of urban canal environments. No significant or sensitive fish habitats occur within the Site boundary.	No

5 ECOLOGICAL IMPACT ASSESSMENT

5.1 Avoidance and Mitigation Embedded in Project Design

The Proposed Development includes several embedded design features that may act to avoid or mitigate negative impacts that would likely occur in the absence of these features. However, as opposed to typical mitigation measures, the implementation of these features is integral to the design and completion of the Proposed Development, and as such the impact assessments are performed with consideration of these features as integrated parts of the Proposed Development. All considered embedded design features that may act to mitigate negative impacts on local ecology and environment are listed in Table 14.

Table 14. Embedded design features and their avoidance/mitigation potential.

Embedded Design Feature	Avoidance/Mitigation Potential
SuDS: • Permeable parking; • Green roofs; • Blue roofs; and • Attenuation systems.	The SuDS features included in the Project Design will ensure the surface water discharge from the Proposed Development is reduced to greenfield runoff rates. These features will be implemented as part of the surface water drainage design.
Landscape Design: • Retention of mature trees; • Native planting; • Green roofs; • Stone walls maintained; and repaired.	Retention of mature trees, enhancement of green/blue infrastructure connectivity, use of layered native and pollinator-friendly planting, incorporation of green roofs and microhabitats, and maintenance of a permeable canal-side nature corridor.
Lighting Design: • Low-level, warm-white LED lighting with careful spacing.	Maintains dark corridors, reduces disturbance to nocturnal wildlife.

5.2 Construction Phase

5.2.1 Impacts on Designated Sites

There is the potential for dust deposition, sediment run-off, and disturbance from noise, vibration, and human activity to affect habitats and species within the Grand Canal pNHA (002104) and the associated Grand Canal I-WeBS site (OU310). Excavation and ground disturbance within the Site could result in increased silt entering the canal, potentially affecting water quality, aquatic vegetation, and species using the riparian corridor.

In the absence of mitigation, potential impact is considered *negative, short-term, moderate* at a local significance.

5.2.2 Impacts on Habitats and Flora

5.2.2.1 Adjacent and Linked Habitats – GS2 / WS1

Physical disturbance from machinery, trampling, and dust deposition could temporarily degrade vegetation structure and quality. In the absence of mitigation, this could lead to localised, temporary loss of habitat quality, reduced connectivity, and displacement of species using the area.

The potential impact is considered *negative, short-term, moderate* at a local scale.

5.2.2.2 Adjacent and Linked Habitats – FW3 Canals

Construction activities could result in sediment runoff, and disturbance to marginal vegetation. Without mitigation, these impacts could lead to temporary degradation of habitat quality and reduced ecological connectivity.

The potential impact is considered *negative, short-term, moderate* impact at a local scale.

5.2.2.3 Spread of Invasive Species

Several non-native invasive species were recorded within and adjacent to the Site during field surveys, including Third Schedule species. Additional non-regulated invasive species were also noted, along with a range of ornamental non-native species typical of hedgerow and garden-edge environments.

If not appropriately managed, ground disturbance during construction could facilitate the spread of invasive plant material via soil movement and vehicle tracking.

In the absence of mitigation, the risk of spread represents a potential *negative, long-term, significant* impact at a local scale.

5.2.3 Impacts on Native Fauna

5.2.3.1 Bat Assemblage

During the Construction Phase, there is potential for temporary disturbance to foraging and commuting bats from noise, vibration, and artificial lighting, particularly during evening works.

This could have a *negative, short-term, slight* impact on local bats in the area.

5.3 Operational Phase

5.3.1 Impacts on Designated Sites

No Operational Phase impacts on any designated sites are anticipated as a result of the Proposed Development.

5.3.2 Impacts on Habitats and Flora

No Operational Phase impacts on habitats and flora are anticipated as a result of the Proposed Development.

5.3.3 Impacts on Native Fauna

5.3.3.1 Bats

During the Operational Phase, light pollution associated with the Proposed Development has the potential to affect bat foraging and commuting activity along retained hedgerows and scattered trees. However, the proposed lighting design will follow bat-sensitive principles, including the use of low-spill, warm-spectrum lighting (≤2700 K), directional fittings, and the maintenance of unlit corridors along key vegetated boundaries. The retention of existing hedgerows and the establishment of new native planting and species-rich grassland within the Landscape Plan will preserve and enhance local foraging opportunities.

Given the suburban context of the Site, this could have a *negative, permanent, slight* impact on bats in the locality.

5.4 Do Nothing Impact

If the Proposed Development were not to go ahead, the Site would remain in its current condition as a predominantly hardstanding industrial estate with limited ecological value. Existing habitats, including the scattered ruderal vegetation and invasive species, would persist without enhancement or management. No additional impacts on adjacent habitats or designated sites, including the Grand Canal pNHA (002104) and Grand Canal I-WeBS area (OU310), would occur, although the potential for further spread of invasive species would remain.

Overall, under a Do Nothing scenario, the Site would retain its current ecological value, with potential minor negative trends associated with invasive species spread, but no large-scale changes to the local biodiversity baseline are expected.

5.5 Potential for In-Combination Effects

5.5.1 Relevant Plans and Policies

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

- Dublin City Development Plan 2022-2028;
- Dublin City Biodiversity Action Plan 2021-2025; and
- All Ireland Pollinator Plan 2021-2025 (NBDC, 2021).

5.5.2 Existing Planning Permissions

A search of planning applications located within a 500m radius of the Site of the Proposed Development was conducted using online planning resources such as the National Planning Application Database (NPAD) (MyPlan.ie) and Dublin City Council Planning Applications online map (DCC, 2025). Any planning applications listed as granted or decision pending from within the last five years were assessed for their potential to act in-combination with the Proposed Development and cause likely significant effects on the relevant European sites. Long-term developments granted outside of this time period were also considered where applicable.

It is noted that the majority of the developments within the vicinity of the Site of the Proposed Development are applications granted for residential developments. The larger developments in the vicinity of the Proposed Development are outlined in Table 15.

Table 15. Granted and pending development applications within 500m of the Proposed Development.

Planning Reference	Planning Authority	Status	Location
319532	**Dublin City Council**	**Granted with conditions**	**Dolphin Park, Crumlin Road, Dublin 12**
Development Description Demolition of the existing clubhouse for the construction of a new two-storey clubhouse, realignment and resurfacing of pitch no. 1. The development proposes the provision of a shed building with an immediate use as a gym to be changed to maintenance and storage use upon completion of the development and all associated site works. A Natura Impact Statement has been prepared in respect of the proposed development. **Potential for In-combination effects** NIS sets out avoidance, design requirements and mitigation measures to ensure no impacts on European sites/biodiversity. Therefore, no in-combination effects are not anticipated.			
316828	**Dublin City Council**	**Granted with conditions**	**Tallaght/Clondalkin to Dublin City**
Development Description Tallaght/Clondalkin to City Centre BusConnect Core Bus Corridor Scheme. Potential for In-combination effects **Potential for In-combination effects** NIS and EIAR set out avoidance, design requirements and mitigation measures to ensure no impacts on European sites/biodiversity. Therefore, no in-combination effects are not anticipated.			
315314	**Dublin City Council**	**Granted with conditions**	**Site at lands known as Bright Ford Rialto, Herberton Road, Dublin 12, D12 HT99**
Development Description			

Demolition of buildings on site (1,316 sq. m. gross floor area) and the construction of a mixed use retail/commercial and residential development totalling 9,177 sq. m. gross floor area. Residential development will consist of 60 apartments.

Potential for In-combination effects
No NIS/EIAR completed for this development. Due to the small nature of this development, and the urban buffer between the it and the Proposed Development, in-combination effects are not anticipated.

307221	**Dublin City Council**	**Granted with conditions**	**Former Bailey Gibson Site, 326-328 South Circular Road, Dublin 8**

Development Description
Demolition of all structures, construction of 416 no. residential units (4 no. houses, 412 no. apartments) and associated site works.

Potential for In-combination effects
NIS and EIAR set out avoidance, design requirements and mitigation measures to ensure no impacts on European sites/biodiversity. Therefore, no in-combination effects are not anticipated.

308917	**Dublin City Council**	**Granted with conditions**	**Former Player Wills site and undeveloped Land in Ownership of Dublin CIty Council, South Circular Road, Dublin 8**

Development Description
Demolition of all buildings excluding the original fabric of the former Player Wills Factory, construction of 492 no. Build to Rent apartments, 240 no. Build to Rent shared accommodation along, creche and associated site works.

Potential for In-combination effects
EIAR sets out avoidance, design requirements and mitigation measures to ensure no impacts on biodiversity. Therefore, no in-combination effects are not anticipated.

302149	**Dublin City Council**	**Granted with conditions**	**43-50, Dolphin's Barn Street, Dublin 8**

Development Description
Demolition of former factory building & construction of a part 4 to part 7 storey residential / retail building, stepping down to 3 storeys to the rear, over basement & ground floor retail & car park with 1 no. retail unit at ground floor & 70 no. apartments from first to sixth floor level. Balconies are provided for the residential apartments on the eastern, western, southern and northern elevations. Provision of 67 no. car parking spaces at basement level & 18 no. car parking spaces with bike store.

Potential for In-combination effects
NIS and EIAR set out avoidance, design requirements and mitigation measures to ensure no impacts on European sites/biodiversity. Therefore, no in-combination effects are not anticipated.

305061	**Dublin City Council**	**Granted with conditions**	**355 South Circular Road, Dublin 8**

Development Description
317 no. student bedspace and associated site works.

Potential for In-combination effects
NIS and EIAR set out avoidance, design requirements and mitigation measures to ensure no impacts on European sites/biodiversity. Therefore, no in-combination effects are not anticipated.

6 AVOIDANCE, MITIGATION, COMPENSATION AND ENHANCEMENT MEASURES

6.1 Avoidance By Design

6.2 Construction Phase

Table 16 gives a summary of the best practice development standards and mitigation measures to be implemented during the Construction Phase of the Proposed Development. The measures listed are outlined in more detail in the Outline Construction and Environmental Management Plan (OCEMP) (DNV, 2025) accompanying this application under separate cover.

Table 16. Summary of best practice standards and mitigation outlined in the OCEMP.

Theme	Best Practice Standards and Mitigation	Ecology Specific Mitigation
Soils and Geology	Appropriate measures to store and handle stripped topsoil and subsoil; consideration of weather conditions to minimise silt/sediment entering surface water network and dust control; and appropriate fill material import, storage and handling away from surface water features.	No.
Water - Hydrogeology	Measures for erosion and sediment control, prevention and control of accidental spills and leaks, concrete handling.	Yes – Mitigation 1 and 2.
Water - Water Supply, Drainage & Utilities	The Main Contractor will carry out a site survey to identify the locations of the water and foul drainage connections to the site. It will be the Main Contractor's responsibility to apply to Uisce Eireann for connections to the water main and foul drain, ideally utilising existing connections.	No.
Site Compound Facilities and Parking	Designated Site compound including car parking facilities will be established prior to the commencement of the construction phase of the Proposed Development.	No.
Construction Waste Management	Managed in accordance with the procedures outlined in the RWMP and appropriate statutory requirements including the Waste Management Act 2006 (as amended). Measures to minimize waste generation, promote re-use and recycling and recovery of wastes will be implemented throughout the construction phase of the Proposed Development.	Yes – Mitigation 6.

Landscape and Visual Impact	Retention of mature trees, enhancement of green/blue infrastructure connectivity, use of layered native and pollinator-friendly planting, incorporation of green roofs and microhabitats, and maintenance of a permeable canal-side nature corridor.	No.
Noise and Vibration	To comply with best practice control measures: • British Standard, 2014. Code of Practice for Noise and Vibration Control on Construction and Open Sites Parts 1 and 2 (BS 5228: 2009 +A1 2014). • National Roads Authority, 2004. Guidelines for the Treatment of Noise & Vibration in National Road Schemes (NRA, 2004). • British Standard, 1993.Evaluation and Measurement for Vibration in Buildings Part 2: Guide to Damage Levels from Ground Borne Vibration (BS 7385: 1993). • European Commission Directive EC 2002/49/EC (S.I. No. 140/2006) - Environmental Noise Regulations 2006. • World Health Organisation (WHO), 1999. Guidelines for Community Noise (WHO, 1999).	Yes – Mitigation 4.
Air Quality	All works undertaken in accordance with the requirements of Dublin City Council, through good design and effective control strategies. Dust Management Plan (DMP) for the duration of the Construction Phase will be implemented. Dust minimisation measures will be reviewed at regular intervals.	No.

In addition, to ensure the OCEMP remains 'fit for purpose' for the duration of the project it should be reviewed and updated by the Project Manager in consultation with the Contractor's Ecologist during the life of the project to ensure that it remains suitable to facilitate efficient and effective delivery of the project's environmental commitments. The Contractor shall also designate a Site Engineer/Manager/Assistant Manager as the Construction Waste Manager and who will have overall responsibility for the implementation of the Project Waste Management Plan (WMP). This Plan will be prepared upon appointment of the Main Contractor.

Additional mitigation measures required for sufficient protection of the KERs identified in this report, and/or details for the specific implementation of the mitigation measures as per the above table are given in the below sections.

6.2.1 Protection of Designated Sites

6.2.1.1 Mitigation 1: Surface Water Protection

These surface water mitigation measures will treat the source (e.g., refuelling of plant to be carried out at designated refuelling station locations on Site) or remove the pathway (e.g., no release of wastewater generated

on-site into nearby waterbodies during the Construction Phase). The following mitigation measures will protect surface waters during the Construction Phase of the Proposed Development.

All works carried out as part of the Proposed Development will comply with all Statutory Legislation including the Local Government (Water Pollution) Acts, 1977 and 1990 and the contractor will cooperate fully with the Environment Section of Dublin City Council in this regard.

Personnel working on the Site will be trained in the implementation of environmental control and emergency procedures. Procedures and relevant documents produced will be formulated in consideration of standard best international practice.

The following standard measures will be implemented by the appointed Contractor (unless otherwise stated) to protect surface water during the Construction Phase of the Proposed Development:

- Run-off from machine service and concrete mixing areas will under no circumstances be allowed to enter the Grand Canal;
- If contaminated soils are encountered during construction works or if material becomes contaminated by, for example, a fuel spill or hydraulic fluid leak, the contaminated materials will be segregated, placed on an impermeable membrane so as to prevent contamination of the underlying ground, and covered to prevent contaminants being mobilised by rainwater run-off. The materials will remain covered until such time as they can be compliantly removed from the site by appropriately authorised waste management contractors;
- A regular review of weather forecasts for heavy rainfall will be conducted, and a contingency plan will be prepared before and after such events to minimise any potential run-off containing silt, sediment, or other pollutants;
- Refuelling of plant during the Construction Phase will only be carried out at designated refuelling station locations on Site. 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;
- Robust and appropriate Spill Response Plan and Environmental Emergency Plans will be implemented for the duration of the works; and
- A register will be kept of all hazardous substances either used on-site or expected to be present. The register shall be available at all times and shall include as a minimum: valid safety sheets; Health & Safety, environmental controls to be implemented when storing, handling, using and in the event of spillage of materials; emergency response procedures/precautions for each material; the Personal Protective Equipment (PPE) required when using the material.

Fuel and Chemical Storage

Appropriate storage facilities will be provided on Site. Areas of high risk include:

- Fuel and chemical storage;
- Refuelling Areas;
- Site Compound; and
- Waste storage areas.

If required, fuel, oils and chemicals will be stored on an impervious base within a bund, however, it is recommended that all fuel, oil and chemical storage will be off Site.

All tank, container and drum storage areas shall be rendered impervious to the materials stored therein. Bunds shall be designed having regard to EPA guidelines 'Storage and Transfer of Materials for Scheduled Activities' (2904). All tank and drum storage areas shall, as a minimum, be bunded to a volume not less than the greater of the following:

- 110% of the capacity of the largest tank or drum within the bunded area; or
- 25% of the total volume of substance that could be stored within the bunded area.

6.2.1.2 Mitigation 2: Silt and Sediment Control

During the Construction Phase, machinery such as diggers have the potential to stir up sediment, especially during rainy periods. This sedimentation has the potential to be transferred to the nearby Grand Canal in the absence of mitigation measures.

The following mitigation measures will prevent silt and sediment originating at the Site from entering the Grand Canal and thus any hydrologically connected European sites.

- Silt curtain will be installed along the southern boundary of the Site between the works area and the Grand Canal, prior to the commencement of works;
- An ECoW will be appointed to ensure best practices are carried out during the works; and
- Once silt curtains become functional, they will be checked regularly and maintained as necessary, in order to ensure continued effectiveness throughout the proposed works.

6.2.2 Protection of Habitats

6.2.2.1 Mitigation 3: Invasive Species Management

Certain plant species and their hybrids are listed as Invasive Alien Plant Species in Part 1 of the Third Schedule of the *European Communities (Birds and Natural Habitats) Regulations* 2011 (SI 477 of 2011, as amended). In addition, soils and other material containing such invasive plant material, are classified in Part 3 of the Third Schedule as vector materials and are subject to the same strict legal controls.

Despite the measures identified in the Construction Management Plan for the importation of only clean materials, there is the potential for the inadvertent import of invasive species to the Site. If established, there is a risk of further spread both within and out of the Site.

To avoid such impacts, a site-specific Invasive Species Management Plan (ISMP) will be implemented prior to commencement of works. This will include:

- Pre-construction identification and clear demarcation of invasive species locations;
- Control and/or removal of IAPS under supervision of a competent ecologist;
- Biosecurity protocols for soil and machinery (clean-down procedures, material handling, and disposal); and
- Post-construction monitoring to ensure no regrowth or secondary spread.

6.2.3 Protection of Fauna

6.2.3.1 Mitigation 4: Reduction of Noise Related 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.

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;
- Minimize drop heights for materials or ensure resilient material underlies;
- 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; and
- 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.

6.2.3.2 Mitigation 5: Timing of Vegetation Clearance

Vegetation removal is proposed to facilitate the development. This will include the removal of low value trees and scrub. While these trees were assessed as negligible for roosting bats and nesting birds, the below mitigations will apply to vegetation clearance, adopting an overall precautionary approach to same.

To ensure compliance with the Wildlife Act 2000 as amended, the removal of areas of vegetation will not take place within the nesting bird season (March 1st to August 31st inclusive) to ensure that no significant impacts (i.e., nest/egg destruction, harm to juvenile birds) occur as a result of the Proposed Development. Where any removal of vegetation within this period is deemed unavoidable, a qualified Ecologist will be instructed to survey the vegetation prior to any removal taking place. Should nesting birds be found, then the area of habitat in question will be noted and suitably protected until the Ecologist confirms the young have fledged.

Table 17 provides guidance for when vegetation clearance is permissible. Information sources include The Herpetological Society of Ireland, the British Hedgehog Preservation Society's Hedgehogs and Development and The Wildlife (Amendment) Act, of 2000. Red boxes indicate periods when clearance/works are not permissible.

The preferred period for vegetation clearance is within the months of September and October. Vegetation will be removed in sections working in a consistent direction to prevent entrapment of protected fauna potentially present (e.g., Hedgehog). Where this seasonal restriction cannot be observed, a check for active roosts and nests, as well as signs of amphibians, will be carried out immediately prior to any Site clearance by an appropriately qualified ecologist and repeated as required to ensure compliance with legislative requirements.

Table 17. Seasonal restrictions on vegetation removal.

<table>
<tr><th>Ecological Feature</th><th>January</th><th>February</th><th>March</th><th>April</th><th>May</th><th>June</th><th>July</th><th>August</th><th>September</th><th>October</th><th>November</th><th>December</th></tr>
<tr><td>Breeding Birds</td><td colspan="2">Vegetation clearance permissible</td><td colspan="5"><u>Nesting bird season</u>
No clearance of vegetation or works permitted unless confirmed to be devoid of nesting birds by an ecologist.</td><td colspan="4">Vegetation clearance permissible.</td></tr>
<tr><td>Hibernating mammals (namely Hedgehog, Pygmy Shrew)</td><td colspan="2"><u>Mammal hibernation season</u>
No clearance of vegetation is permitted unless confirmed to be devoid of hibernating mammals by an ecologist.</td><td colspan="7">Vegetation clearance permissible.</td><td><u>Mammal hibernation season</u>
No clearance of vegetation or works to relevant structures is permitted unless confirmed to be devoid of hibernating mammals by an ecologist.</td></tr>
<tr><td>Bats</td><td colspan="7">Tree felling is to be avoided unless confirmed to be devoid of bats by an ecologist</td><td colspan="2">Preferred period for tree-felling</td><td>Tree felling is to be avoided unless confirmed to be devoid of bats by an ecologist</td></tr>
</table>

6.2.3.3 Mitigation 6: Small Mammal and Fauna Protection

The following general avoidance measures will be incorporated to minimise impacts to mammals during the Construction Phase:

Hours of work

The hours of working will be limited to daylight hours where possible, so as to limit disturbance to nocturnal and crepuscular animals.

Waste Management

As best practice, all construction-related rubbish on Site (e.g., plastic sheeting, waste, wires, bags and netting) in which animals can become entangled, will be kept in a designated area and kept off ground level so as to prevent small mammals such as hedgehogs from entrapment and death.

Excavations & Pipes

Trenches/pits must be either covered when not in use/at the end of each working day with caps (especially at night) or include a means of escape for any animal falling in and getting stuck. If this is not possible, then a strategically placed plank or object should be placed in the corner of an excavation to enable animals to safely escape (Badgers will continue to use established paths across a Site even when construction work has started).

Any temporarily exposed open pipe system will be capped in such a way as to prevent badgers from gaining access as may happen when contractors are off-site.

6.2.3.4 Mitigation 7: Construction Phase Lighting Regime

Where possible, Construction Phase lighting will be switched off during non-working hours. However, during use, directional lighting will be the lighting of choice as this will minimise light spill from the site, into any surrounding areas which may be in use by bats or other nocturnal animals that may be commuting/foraging in the area.

It is recommended that LED luminaires possessing a warm white spectrum (2700k – 3000k) be used so as to reduce the blue light component. LED lights are also ideal due to their sharp cut-off, lower intensity, and dimming capabilities.

6.3 Operational Phase

6.3.1 Protection of Habitats

6.3.1.1 Mitigation 8: Operational Phase Invasive Species Management

Certain plant species and their hybrids are listed as Invasive Alien Plant Species in Part 1 of the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477 of 2011, as amended). In addition, soils and other material containing such invasive plant material, are classified in Part 3 of the Third Schedule as vector materials and are subject to the same strict legal controls.

Despite the measures identified in the Construction Management Plan for the importation of only clean materials, there is the potential for the inadvertent import of invasive species to the Site. If established, there is a risk of further spread both within and out of the Site.

As such, it is recommended that any newly landscaped areas, particularly where infill materials and soils have been imported for soft landscaping, are assessed during the Operational Phase within the next botanical season for the presence of any inadvertently introduced invasive species, with particular focus on those listed on Schedule III of SI 477 of 2011. If invasive species are detected, an ISMP will be prepared, agreed with the Local Authority and implemented at the earliest possibility to limit the potential for further spread by ongoing operations at the Proposed Development.

6.4 Protection of Fauna

6.4.1.1 Mitigation 9: Operational Phase Lighting

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 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 (BCT) & Institute of Lighting Engineers (ILE) *'Bats and Lighting in the UK - Bats and Built Environment Series'* (BCT & ILE, 2009), the BCT '*Artificial Lighting and Wildlife Interim Guidance*' (BCT, 2018) and the BCT *'Statement on the impact and design of artificial light on bats'* (BCT, 2022). 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 (Riparian corridor/pedestrian greenway). 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;
- Lighting along existing treeline will be avoided where possible and bat friendly; using low level bollards, motion sensors where applicable, once health and safety standards are met;
- 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); and
- 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.

6.5 Biodiversity Enhancement Measures

6.5.1 Biodiversity Enhancement by Design

Biodiversity enhancement is embedded in the Landscape Plan (BSLA, 2025) through the expansion of the canal-side green/blue infrastructure, with layered planting, retained mature trees, and permeable habitat corridors that strengthen ecological connectivity. Additional features such as intensive green roofs, microhabitats, and diverse planting structures further increase habitat availability and support a richer range of species across the Site.

6.5.2 Enhancement 1: Swift Box Scheme

A Swift box scheme is proposed to be installed at the Site and should be implemented with the Landscape Plan so as to enhance the potential bird nesting habitat in the area during its Operational Phase.

It is recommended that swift boxes or bricks are incorporated into the Proposed Development where possible. The incorporation of swift boxes or bricks would help recover the declining swift population, which are now Red Listed in Ireland (Gilbert *et al*., 2021). The following recommendations are extracted from “Saving Swifts” by Birdwatch Ireland.

Swift bricks/boxes:

- Will be constructed of long-lasting material and securely fixed in position;
- Will be erected at least five metres above ground level;
- Will be erected in sheltered cool areas out of the sun, or under an overhang and /or under the eaves. Bricks can be placed at any aspect, however, as they tend not to overheat the way that externally fitted boxes can;
- Will have a clear airspace in front for access;
- Will be grouped (side by side in rows) as swifts are colony nesters;
- Will avoid sites which can be accessed by predators- cats, squirrels, magpies, rats;
- Will avoid sites near plate glass windows because they are a known collision hazard for birds;
- Will not be placed directly above ledges or other obstructions. Swifts drop before taking flight and can collide with obstacles below the nest entrance;
- Will not be one above the other; and
- Will not be near spotlights or later fit spotlights near them.

In addition, and as part of this scheme, it is proposed to include 6 No. Swift boxes. These nest bricks will be installed at least 5m above the ground, in safe areas where they will not be disturbed. The location of bird boxes will be advised by a suitably qualified ecologist.

Guidelines for the bird box scheme should also follow guidelines published by Swift Conservation Ireland, and those published by Birdwatch Ireland entitle “Saving Swifts” (2009/2010).

6.5.3 Enhancement 2: Bat Box Scheme

It is proposed to place a total of 6 No. bat boxes within the Site. These will provide an important roost habitat for bat species which may be using the Site. As such, a suitably qualified ecologist will be required to select and oversee the placement of these bat boxes in suitable locations, paying consideration factors such as aspect and height.

These bat boxes, will work in tandem with the following, to ensure that the Proposed Development will not result in a significant adverse impact on bat species:

- The reinstatement of grassland habitat and wildflower meadows along edge habitat (e.g., scrub and hedgerow edges);
- The planting of multiple tree species within the Site;
- The bat friendly lighting plan; and
- The planting of hedgerows and trees to provide connectivity and additional foraging and commuting habitat throughout the Site.

6.5.4 Enhancement 3: Low Intervention Hedgerow Management

The proposed hedgerows will be managed in a way that maximises the ecological value they provide at the Site, with habitat connectivity maintained along the margins of the Site; connecting it in with the wider ecological network in the area.

This connectivity is vital for wildlife such as birds, bats, mammals and insect pollinators in a human landscape such as that which will be provided by the Proposed Development. Additionally, by managing hedgerows and treelines in a more natural way, they will provide more in terms of biodiversity; through increased plant diversity, increase provision of food resources and higher quality shelter to wildlife inhabiting and commuting through the area.

For the hedgerows running along the outer margins of the Site, the following management approach is proposed to maximise their biodiversity value and offset the loss of any sections of existing hedgerows at the Site. Should planning be granted, a **Hedgerow Management Plan** will be prepared by a suitably qualified ecologist; for the hedgerows at the Site. This management plan will include the following, with a focus on maintaining these hedges in as natural a state as possible to maximise their ecological value:

- Hedgerows will be maintained with a **natural meadow strip of 1-2m** at their base wherever possible. Hedges with plenty of naturally occurring flowers and grasses at the base support will provide higher quality habitat for local wildlife using the hedges; and
- The 1-2m strip at the base of the hedgerow will be cut on a reduced mowing regime to encourage wildflower growth and maximise the value of the hedgerow for pollinators. A **two-cut management approach** is ideal for suppressing coarse grasses and encouraging wildflowers. Cut the hedgerow basal strip **once during February and March** (this is before most verge plants flower and it will not disturb ground-nesting birds). Cut the verge **once again during September and October** (this slightly later cutting date allows plants that were cut earlier in the year time to grow and set seed).

N.B. Raising the cutter bar on the back cut will lower the risk to amphibians, reptiles and small mammals.

- Hedgerows, where possible, will be allowed to reach at least 2.5m in height, and should be **trimmed in an A-shape**; maintaining a wider base to compliment the natural meadow strip at their base. Existing hedgerows being retained at the Site that are taller than 2.5m should be retained as is and pruned lightly as required;
- Where hedgerow trimming needs to occur delay trimming as late as possible – until **January and February** as the surviving berry crop will provide valuable food for wildlife. The earlier this is cut; the less food will be available to help birds and other wildlife survive through the winter. Any hedgerow cutting will be done outside of the nesting season and due consideration of the Wildlife Act 1976 (as amended) needs to be taken;
- Where possible, cut these outer boundary hedgerows on a minimum **3-year cycle** (cutting annually stops the hedgerow flowering and fruiting), and cut in rotation rather than all at once - this will ensure some areas of hedgerow will always flower (Blackthorn in March, Hawthorn in May etc.); and
- Where they occur naturally, Bramble and Ivy should be allowed grow in hedgerows, as they provide key nectar and pollen sources in summer and autumn.

Methods to Avoid:

Hedgerows will not be over-managed. Tightly cut hedges mean there are fewer flowers and berries, thus reducing available habitats, feeding sources and suitable nesting sites.

Hedgerows will not be cut between March 1st and August 31st inclusive. It is both prohibited (except under certain exemptions) and very damaging for birds as this is the period they will have vulnerable nests containing eggs and young birds.

DO NOT use pesticide/ herbicide sprays or fertilisers near hedgerows as they can have an extremely negative effect on the variety of plants and animals they support.

7 MONITORING

Table 18 provides a summary of the required monitoring and pre-works inspections during the Construction Phase, as well as any surveys that should be completed during the Operational Phase. The monitoring, inspections and surveys will ensure that the identified mitigation measures are implemented and maintained efficiently and have the desired effect of protecting the local ecology from adverse impacts.

Table 18. Monitoring for the identified mitigation measures during the Construction and Operational Phases.

Measure	Monitoring
Construction Phase	
Mitigation 1: Surface Water Protection	Ongoing monitoring by Contractor/Ecologist.
Mitigation 2: Silt and Sediment Control	Ongoing monitoring by Contractor/Ecologist.
Mitigation 3: Invasive Species Management	Ongoing monitoring by Contractor.
Mitigation 4: Reduction of Noise Related Impacts	Ongoing monitoring by Contractor.
Mitigation 5: Timing of Vegetation Clearance	Any Site vegetation clearance within the scrub, hedgerows or grassland habitats subject to supervision by an Ecologist and a phased approach.
Mitigation 6: Small Mammal and Fauna Protection	Ongoing monitoring by Contractor.

Mitigation 7: Construction Phase Lighting Regime	Ongoing monitoring by Contractor.
Operational Phase	
Mitigation 8: Operational Phase Invasive Species Management	An Invasive Species Survey will be carried out by a qualified Ecologist during the next botanical season after soft landscaping has been completed.
Mitigation 9: Operational Phase Lighting	Contractor.
Enhancement 1: Swift Box Scheme	Contractor/Ecologist.
Enhancement 2: Bat Box Scheme	Contractor/Ecologist.
Enhancement 3: Low Intervention Hedgerow Management	No monitoring required.

8 RESIDUAL IMPACTS

Residual impacts are impacts that remain once mitigation has been implemented or impacts that cannot be mitigated. Table 19 provides a summary of the impact assessment for the identified KERs and details the nature of the impacts identified, the mitigation measures proposed, and the classification of any residual impacts.

Both standard Construction Phase control measures, and specific mitigation measures, have been outlined to ensure that the Proposed Development does not impact on any species, habitats or designated sites of conservation importance. It is essential that these measures are complied with, in order to ensure that the Proposed Development complies with National conservation legislation.

Provided all recommended measures are implemented in full and remain effective throughout the lifetime of the Proposed Development, no significant negative residual impacts on the local ecology, or on any designated nature conservation sites, will occur as a result of the Proposed Development.

Table 19. Summary of potential impacts on KERs, mitigation proposed and residual impacts.

KER	Evaluation	Potential Impact	Impact without Mitigation				Proposed Mitigation	Proposed Enhancements	Residual Impact
			Quality	Magnitude/ Extent	Duration	Significance			
Designated sites									
Grand Canal pNHA (002104); Grand Canal I-WeBS site (OU310)	National Importance	**Construction Phase:** Water pollution Disturbance due to dust, noise, vibration, and lighting. **Operational Phase:** None identified.	*Negative* *Negative*	*Local* *Local*	*Short-term* *Short-term*	*Moderate* *Moderate*	**Mitigation 1:** Ecological Buffer Zone **Mitigation 3:** Reduction of Noise Related Impacts **Mitigation 6:** Construction Phase Lighting Regime	None	**Imperceptible**
Habitats									
GS2 – Dry meadows and grassy verges/WS1 – Scrub	Local Importance (Higher Value)	**Construction Phase:** Disturbance due to dust and machinery. **Operational Phase:** None identified.	*Negative*	*Local*	*Short-term*	*Moderate*	**Mitigation 1:** Ecological Buffer Zone	None	**Imperceptible**
FW3 – Canals	Local Importance (Higher Value)	**Construction Phase:** Water pollution **Operational Phase:** None identified.	*Negative*	*Local*	*Short-term*	*Moderate*	**Mitigation 1:** Ecological Buffer Zone	None	**Imperceptible**

All habitats	Local Importance (Higher Value)	**<u>Operational Phase:</u>** Spread of Invasive Flora	*Negative*	*Local*	*Long-term*	*Significant*	**Mitigation 2:** Invasive Species Management **Mitigation 7:** Operational Phase Invasive Species Management	None	**Imperceptible**
Fauna									
Bats	Local Importance (Higher Value)	**<u>Construction Phase:</u>** Disturbance due to noise, vibration, and lighting. **<u>Operational Phase:</u>** Disturbance due to lighting.	*Negative* *Negative*	*Local* *Local*	*Short-term* *Permanent*	*Slight* *Slight*	**Mitigation 3:** Reduction of Noise Related Impacts **Mitigation 6:** Construction Phase Lighting Regime **Mitigation 8:** Operational Phase Lighting	**Enhancement 2:** Bat Box Scheme **Enhancement 3:** Low Intervention Hedgerow Management	**Imperceptible**

9 CONCLUSION

It is considered that, provided the mitigation measures proposed within this report together with all best practice development standards as outlined in the OCEMP are carried out in full, there will be no significant negative impact to any KER habitat, species group or biodiversity as a result of the Proposed Development.

The targeted ecological surveys allowed for the identification of invasive plant species at the Site, and through careful evaluation of the potential impacts it is considered that a proportionate and effective solution to mitigate the negative impacts from the spread of invasive species from the Site has been achieved.

Additionally, the Landscape Plan for the Proposed Development was designed to offset some of the habitat loss that will result from the Proposed Development.

REFERENCES

Andrews, H. (2018) Bat Roosts in Trees. AEcol, Bridgewater.

Bang, P. and Dahlstrom, P. (2001) Animal Tracks and Signs, Oxford University Press, Oxford.

BCT & ILE (2009) Bats and Lighting in the UK – Bats and the Built Environment Series. London: Bat Conservation Trust & Institute of Lighting Engineers.

BCT (2018) Artificial Lighting and Wildlife: Interim Guidance: Recommendations to Help Minimise the Impact of Artificial Lighting. London: Bat Conservation Trust.

BCT (2022) BCT Statement on the Impact and Design of Artificial Light on Bats. London: Bat Conservation Trust.

Bibby, C. J., Burgess, N. D. & Hill, D. A. (1992) Bird Census Techniques. Academic Press, New York.

Bird Survey & Assessment Steering Group (2022) Bird Survey Guidelines for assessing ecological impacts, v.1.0.0.

BMCE (2025a) Civil Engineering Infrastructure Report for Planning: White Heather, South Circular Road. Barret Mahony Civil and Structural Consulting Engineers.

BMCE (2025b) Site Specific Flood Risk Assessment: White Heather, South Circular Road. Barret Mahony Civil and Structural Consulting Engineers

BSI (2013) BS 42020:2013 Biodiversity: Code of practice for planning and project. British Standards Institution. London.

BSLA (2025) Drawing – Planting Plan: White Heather. Bernard Seymour Landscape Architects.

CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester, UK.

Collins, J. (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edition). The Bat Conservation Trust, London.

DHLGH (2025) Department of Housing, Local Government and Heritage. Available at: https://housinggovie.maps.arcgis.com/home/index.html/. [Accessed November 2025].

DNV (2025) Outline Construction Environmental Management Plan (CEMP): Proposed Development at White Heather Industrial Estate, South Circular Road, Dublin 8.

EPA (2022) Guidelines on the information to be contained in Environmental Impact Assessment Reports. Published by the Environmental Protection Agency, Ireland.

EPA (2025) Environmental Protection Agency Online Mapping [ONLINE] Available at: http://www.epa.ie/ [Accessed November 2025].

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

Furness, R.W. (2019) Avoidance rates of herring gull, great black-backed gull and common gull for use in the assessment of terrestrial wind farms in Scotland. Scottish Natural Heritage Research Report No. 1019.

Gilbert, G., Gibbons, D.W., and Evans, J. (1998) Bird Monitoring Methods: a manual of techniques for key UK species. Sandy: RSPB.

Gillings, S., Wilson, A.M., Conway, G.J., Vickery, J.A., Fuller, R.J., Beavan, P., Newson, S.E., Noble, D.G. & Toms, M.P. (2007) Winter Farmland Bird Survey. BTO Research Report No.494.

GSI (2025) Geological Survey of Ireland website [ONLINE] Available at: http://www.gsi.ie/ accessed [Accessed November 2025].

Lundy M.G., Aughney T., Montgomery W.I., Roche N. (2011) Landscape conservation for Irish bats & species specific roosting characteristics. Bat Conservation Ireland.

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.

Meehan, R. (2013) National Smooth Newt Survey 2013 Report. Irish Wildlife Trust, Dublin.

NBDC (2021) All-Ireland Pollinator Plan 2021 – 2025. National Biodiversity Data Centre.

NBDC (2025) National Biodiversity Data Centre online mapping [ONLINE] Available at: http://maps.biodiversityireland.ie/Map.aspx. [Accessed November 2025].

NPWS (2013a) Conservation Objectives: North Dublin Bay SAC 000206. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2013b) Conservation Objectives: South Dublin Bay SAC 000210. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2015a) Conservation Objectives: North Bull Island SPA 004006. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2015b) Conservation Objectives: South Dublin Bay and River Tolka Estuary SPA 004024. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2025) National Parks and Wildlife Service website [ONLINE] Available at: http://www.npws.ie/en/ [Accessed November 2025].

NRA (2004) Guidelines for the Treatment of Noise and Vibration in National Road Schemes. National Roads Authority (now Transport Infrastructure Ireland), Dublin.

NRA (2005) Guidelines for the Treatment of Badgers Prior to the Construction of National Road Schemes. National Roads Authority (now Transport Infrastructure Ireland), Dublin.

NRA (2008) Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes. National Roads Authority (now Transport Infrastructure Ireland), Dublin.

NRA (2009) Guidelines for Assessment of Ecological Impacts of National Road Schemes. National Roads Authority (now Transport Infrastructure Ireland), Dublin.

OMP (2025) Drawing – Proposed Ground Floor Plan: White Heather Industrial Estate, South Circular Road, Dublin 8. O'Mahony Pike Architecture.

OPR (2021) OPR Practice Note PN01 - Appropriate Assessment Screening for Development Management. Office of the Planning Regulator.

Reid, N., Lundy, M., Nelson, B., McElheron, C., Lynn, D., Marnell, F., Kinsella, A. and Barron, S. (2013) National Frog Survey of Ireland 2010/11. Irish Wildlife Manuals, No. 66. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin.

Russ, J., (2012) British bat calls: a guide to species identification. Pelagic publishing.

Smith, G.F., O'Donoghue, P, O'Hora K., and Delaney, E. (2010) Best Practice Guidance for Habitat Survey and Mapping. Published by the Heritage Council.

Uisce Eireann (2023) Annual Environmental Report 2023: Ringsend D0034-01. Uisce Eireann: Irish Water.

APPENDICES

Appendix I - Legislation and Policy
International Legislation

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.

EU Habitats Directive

The Habitats Directive aims to protect some 220 habitats and approx. 1000 species through-out 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 (SACs) for areas of habitat deemed to be of European interest. The SACs together with the SPAs from the Birds Directive from a network of protected sites called Natura 2000.

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 in order to give protection to migratory species across borders in Europe.

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 66,994ha.

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; the second cycle ran from 2016 – 2021, and the current (third) cycle runs from 2022-2027. 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.

National Legislation

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 provides a mechanism to give statutory protection to Natural Heritage Areas (NHAs). 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.

The current list of plant species protected by Section 21 of the Wildlife Act, 1976 (and amendments) is set out in the Flora (Protection) Order, 2015 (S.I. No. 356/2015). The Flora (Protection) Order 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.

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 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 regard 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."

Invasive Species Legislation

Certain plant species and their hybrids are listed as Invasive Alien Plant Species in Part 1 of the Third Schedule of the *European Communities (Birds and Natural Habitats) Regulations* 2011 (SI 477 of 2011, as amended). In addition, soils and other material containing such invasive plant material, are classified in Part 3 of the Third Schedule as vector materials and are subject to the same strict legal controls.

Failure to comply with the legal requirements set down in this legislation can result in either civil or criminal prosecution, or both, with very severe penalties accruing. Convicted parties under the Act can be fined up to €500,000.00, jailed for up to 3 years, or both.

Extracts from the relevant sections of the regulations are reproduced below.

"49(2) Save in accordance with a licence granted [by the Department of Arts, Heritage and the Gaeltacht]*, any person who plants, disperses, allows or causes to disperse, spreads or otherwise causes to grow in anyplace* [a restricted non-native plant]*, shall be guilty of an offence.*

49(3) … it shall be a defence to a charge of committing an offence under paragraph (1) or (2) to prove that the accused took all reasonable steps and exercised all due diligence to avoid committing the offence.

50(1) Save in accordance with a licence, a person shall be guilty of an offence if he or she […] offers or exposes for sale, transportation, distribution, introduction, or release—

(a) an animal or plant listed in Part 1 or Part 2 of the Third Schedule,

(b) anything from which an animal or plant referred to in subparagraph (a) can be reproduced or propagated, or

(c) a vector material listed in the Third Schedule, in any place in the State specified in the third column of the Third Schedule in relation to such an animal, plant or vector material."

National Biodiversity Action Plan 2023-2030

The National Biodiversity Plan (NBAP) 2023-2030, the fourth such plan for Ireland, captures the objectives, targets and actions for biodiversity that will be undertaken by a wide range of government, civil society and private sectors. Actions required to achieve the strategic objectives as well as the lead and key partners responsible for their implementation are set out for each of the objectives and their outcomes (Table A1).

Table A1: Objectives and outcomes of the National Biodiversity Action Plan 2023-2030.

Objective	Outcome
1: Adopt a Whole-of-Government, Whole-of-Society Approach to Biodiversity	1A. Governance structures and reporting outputs have improved.
	1B. Organisational capacity and resources for biodiversity have increased at all levels of Government.
	1C: Responsibility for biodiversity is shared across the whole of government.
	1D: Biodiversity initiatives are supported across the whole of society.
	1E. The legislative framework for biodiversity conservation is robust, clear and enforceable.
2: Meet Urgent Conservation and Restoration Needs	2A: The protection of existing designated areas and protected species is strengthened and conservation and restoration within the existing protected area network are enhanced.
	2B: Biodiversity and ecosystem services in the wider countryside are conserved and restored – agriculture & forestry.
	2C: Biodiversity and ecosystem services in the wider countryside are conserved and restored – peatlands & climate action.
	2D: Biodiversity and ecosystem services in the marine and freshwater environment are conserved and restored.
	2E: Genetic diversity of wild and domesticated species is safeguarded.
	2F: A National Restoration Plan is in place to contribute to the ambition of the EU Biodiversity Strategy 2030 and global restoration targets.
	2H: Invasive alien species (IAS) are controlled and managed on an all-island basis to reduce the harmful impact they have on biodiversity and measures are undertaken to tackle the introduction and spread of new IAS to the environment.
3. Secure Nature's Contribution to People	3A: Ireland's natural heritage and biocultural diversity is recognised, valued, enhanced and promoted in policy and practice.
	3B: The role of biodiversity in supporting wellbeing, livelihoods, enterprise and employment is recognised and enhanced.
	3C: Planning and development will facilitate and secure biodiversity's contributions to people.
4. Enhance the Evidence Base for Action on Biodiversity	4A: Research funding bodies will have an improved understanding of the research and skills required to address biodiversity research gaps.
	4B: Data relevant to biodiversity and ecosystems, including conservation needs, is widely accessible and standardised.
	4C: Long-term monitoring programmes are in place to guide conservation and restoration goals.
	4D: Ireland has prepared national assessments of ecosystem services.
5. Strengthen Ireland's Contribution to International Biodiversity Initiatives	5A: Science, policy and action on biodiversity conservation and restoration is effectively coordinated in an all-island approach.
	5B: Ireland takes action internationally to cooperate with other countries, sectors, disciplines and communities to address the biodiversity crisis.
	5C: Ireland enhances its contributions to the international biodiversity data drive.

Dublin City Development Plan 2022-2028

While the County Development Plan in its entirety is relevant to the Proposed Development and can be referred to separately, policies, principles and objectives of the Dublin City Development Plan 2022-2028 that are of relevance to this Screening Report are outlined below:

- **Policy GI9:** To conserve, manage, protect and restore the favourable conservation condition of all qualifying interest/special conservation interests of all European sites designated, or proposed to be designated, under the EU Birds and Habitats Directives, as Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) (European / Natura 2000 sites).
- **Policy GI10:** To adequately protect flora and fauna (under the EU Habitats and Birds Directives), the Wildlife Acts 1976 (as amended), the Fisheries Acts 1959 (as amended) and the Flora (Protection) Order 2022 S.I No. 235 of 2022, wherever they occur within Dublin City, or have been identified as supporting the favourable conservation condition of any European sites.
- **Policy GI12:** To protect sites for nature conservation as designated under the Ramsar Treaty for wetland sites, National Special Amenity Areas, National Nature Reserves, Important Bird Areas and Flora Protection Order Sites.
- **Policy GI13:** To ensure the protection, conservation and enhancement of all areas of ecological importance for protected species, and especially those listed in the EU Birds and Habitats Directives, including those identified as supporting the favourable conservation condition of any European sites, in accordance with development standards set out in this plan.

Dublin City Biodiversity Action Plan 2021-2025

Dublin City Biodiversity Action Plan 2021-2025 is set out to protect and improve biodiversity through specific objectives:

- **Objective 1:** Ensure effective implementation of the Dublin City Biodiversity Action Plan.
- **Objective 2:** Protect designated sites for nature conservation in accordance with the Conservation Management objectives for Natura 2000 sites and proposed Natural Heritage Areas in Dublin City.
- **Objective 3:** Identify and protect sites that have conservation value for biodiversity using evidence-based research.
- **Objective 4:** Monitor and conserve legally-protected species within Dublin City, particularly those listed in the annexes of the EU Birds and Habitats Directive using evidence-based research.
- **Objective 5:** Prepare and plan for the impacts of climate change on biodiversity.
- **Objective 6:** Implement measures for species with that have a local biodiversity value or impact local biodiversity.
- **Objective 7:** Prepare and disseminate information on guidance for development and site management for biodiversity conservation.
- **Objective 8:** Devise and implement habitat restoration initiatives across Dublin City.
- **Objective 9:** To use nature-based solutions to restore biodiversity and ecosystem services.
- **Objective 10:** Strengthen measures to control Invasive Alien Species (IAS), improve biosecurity and ecological status of catchments.
- **Objective 11:** Ensure that measures for biodiversity and nature-based solutions are incorporated into new building projects, retrofit and maintenance works.

- **Objective 12:** Promote net biodiversity gain and ensure there is no net loss of biodiversity through strategies, planning, mitigation measures, appropriate offsetting and/or investment in Blue-Green infrastructure.
- **Objective 13:** Pilot initiatives for the creation of habitats using artificial habitat methods.
- **Objective 14:** Minimise and reduce soil degradation in the Dublin City Council administrative area.
- **Objective 15:** Ensure that measures for biodiversity and nature-based solutions are incorporated into new building projects, retrofit and maintenance works.
- **Objective 16:** Empower citizens to connect with, and take positive action for, biodiversity at a local and city-wide level.
- **Objective 17:** Strengthen collaboration for the conservation of biodiversity at a regional, national, and global level.

Appendix II - 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.

Table A2. Description of values for ecological resources based on geographic hierarchy of importance.

Importance	Criteria

International Importance	- '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 fulfils 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:
	  o Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; and/or
	  o 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	- 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:
	  o Species protected under the Wildlife Acts; and/or
	  o Species listed on the relevant Red Data list.
	  o Site containing 'viable areas' of the habitat types listed in Annex I of the Habitats Directive

County Importance	- Area of Special Amenity.
	- Area subject to a Tree Preservation Order.
	- 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:
	  o Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive;
	  o Species of animal and plants listed in Annex II and/or IV of the Habitats Directive;
	  o Species protected under the Wildlife Acts; and/or
	  o Species listed on the relevant Red Data list.
	  o 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; 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.

Local Importance (higher value)	- 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:
	  o Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive;
	  o Species of animal and plants listed in Annex II and/or IV of the Habitats Directive;
	  o Species protected under the Wildlife Acts; and/or o
	  o Species listed on the relevant Red Data list.
	  o 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.

Local Importance (lower value)	- Sites containing small areas of semi-natural habitat that are of some local importance for wildlife; - Sites or features containing non-native species that is of some importance in maintaining habitat links.

Appendix III - EPA Impact Assessment Criteria

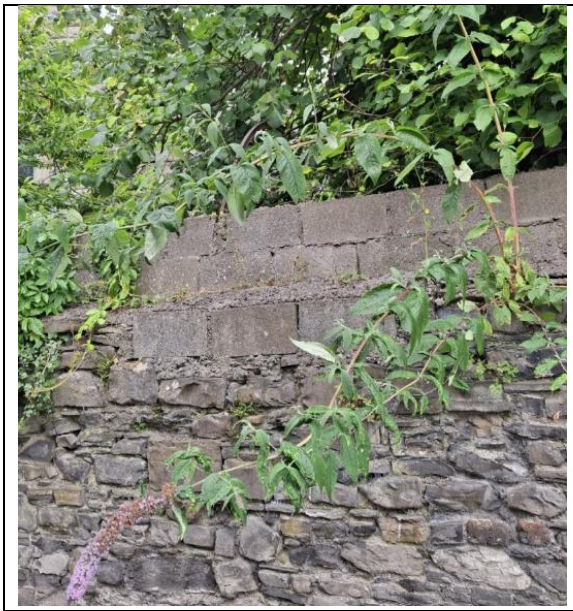
In line with the EPA Guidelines (EPA 2022), the following terms are defined when evaluating and quantifying the quality, significance, extent/context, probability and duration/frequency of effects.

Table A3. Definition of quality, significance, extent/context, probability and duration/frequency of effects.

Term	Definition
Quality of Effects	
Positive	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	No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
Negative/Adverse	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 or by causing nuisance).
Significance of Effects	
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 that 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, alters 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. No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error
Extent and Context of Effects	
Extent	Describe the size of the area, the number of sites and the proportion of a population affected by an effect.
Context	Describe whether the extent, duration or frequency will conform or contrast with established (baseline) conditions (is it the biggest, longest effect ever?)
Probability of Effects	
Likely	The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.
Unlikely	The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.

Duration and Frequency of Effects	
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	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.
Frequency	Describe how often the effect will occur (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually).

Appendix IV - Site Photographs

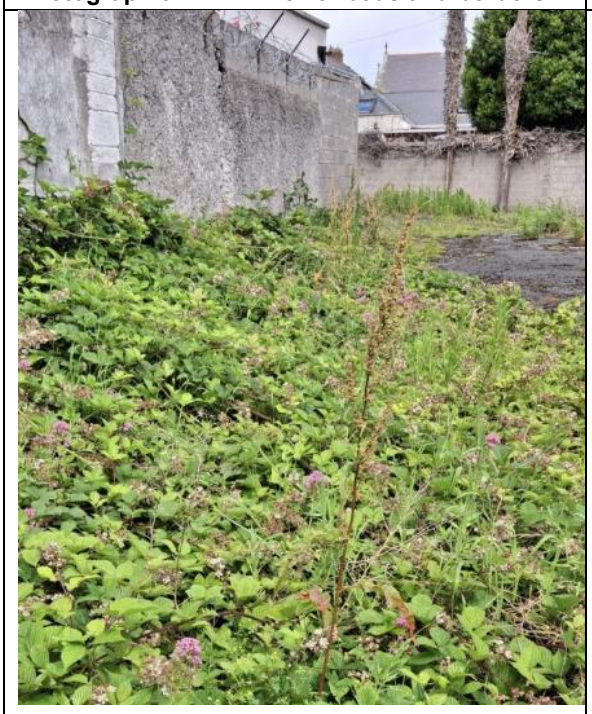


Photograph 1. BL1 – Stone walls and other stonework.

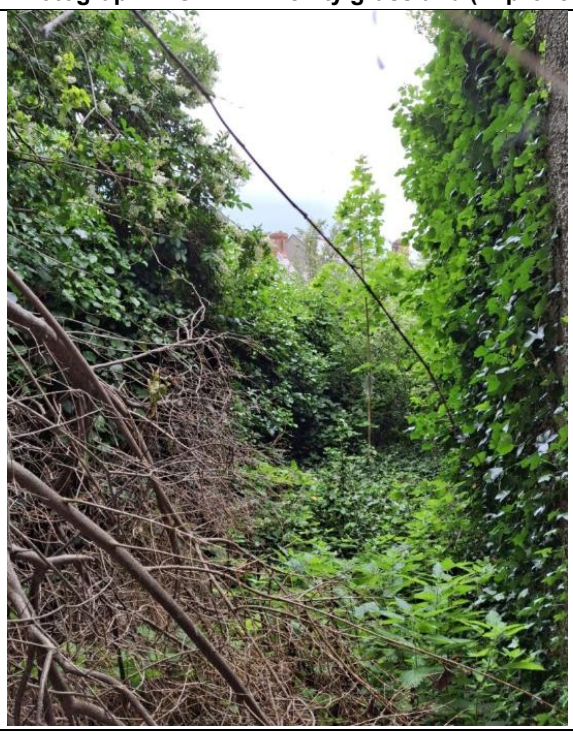
Photograph 2. BL3 – Buildings and artificial surfaces.

Photograph 3. BC4 – Flower beds and borders.

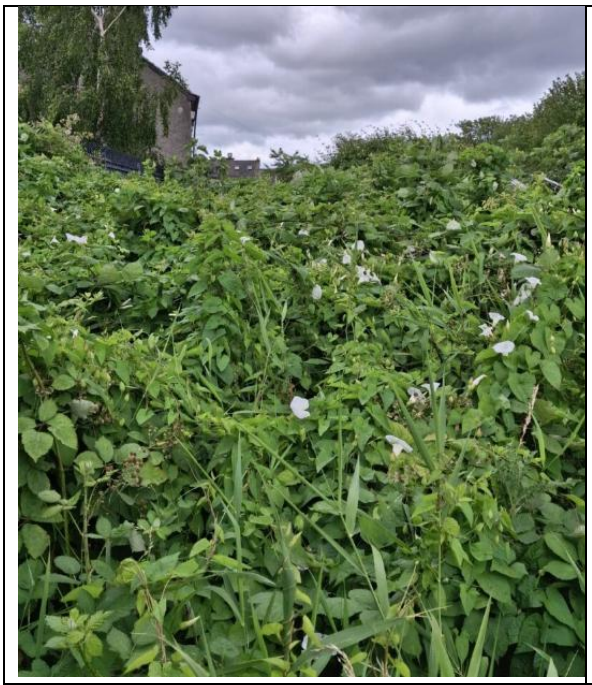
Photograph 4. GA2 – Amenity grassland (improved).



Photograph 5. ED3 – Recolonising bare ground.

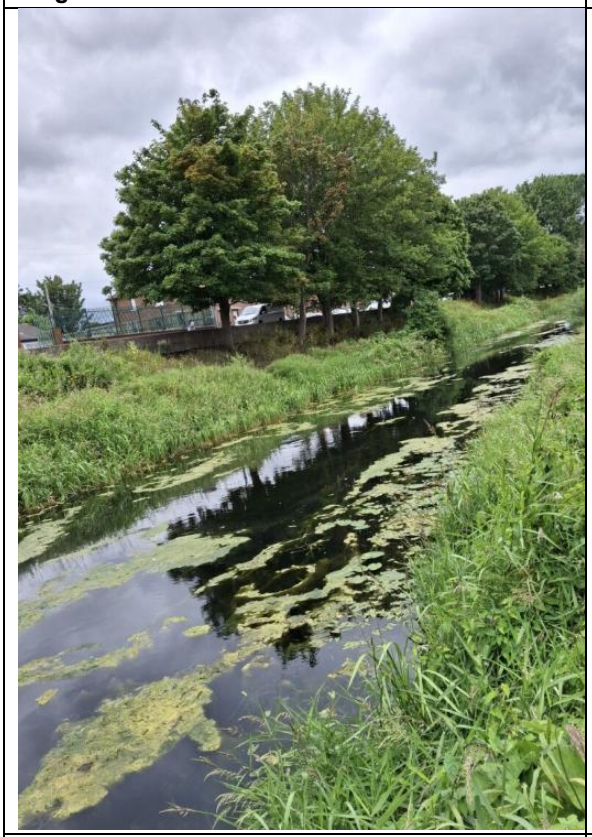


Photograph 6. WS1 – Scrub.



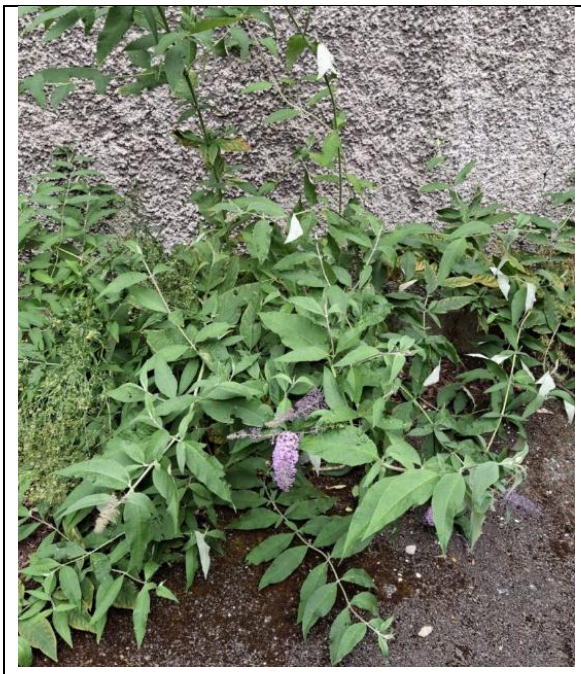
Photograph 7. GS2 – Dry meadows and grassy verges/WS1 – Scrub.

Photograph 8. GS2 – Dry meadows and grassy verges/WS1 – Scrub.



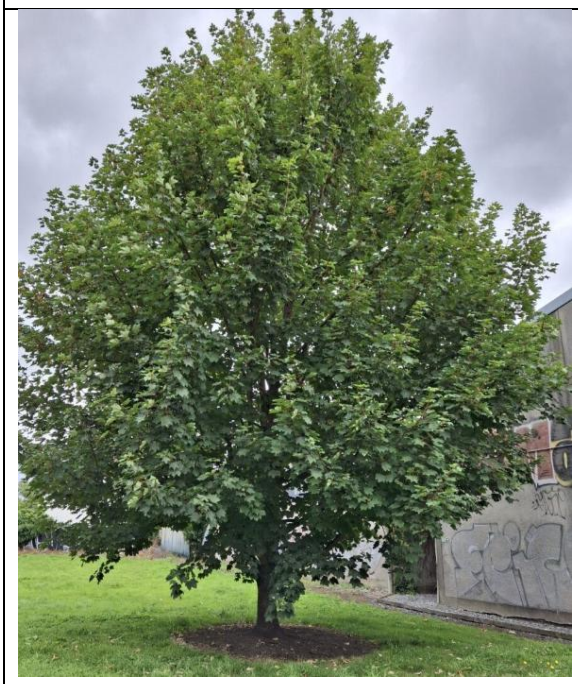
Photograph 9. FW3 – Canals

Photograph 10. Japanese knotweed recorded within the Site.



Photograph 11. Butterfly bush recorded within the Site.

Photograph 12. Cotoneaster spp. recorded within the Site.



Photograph 13. Mature sycamore tree recorded within the Site.

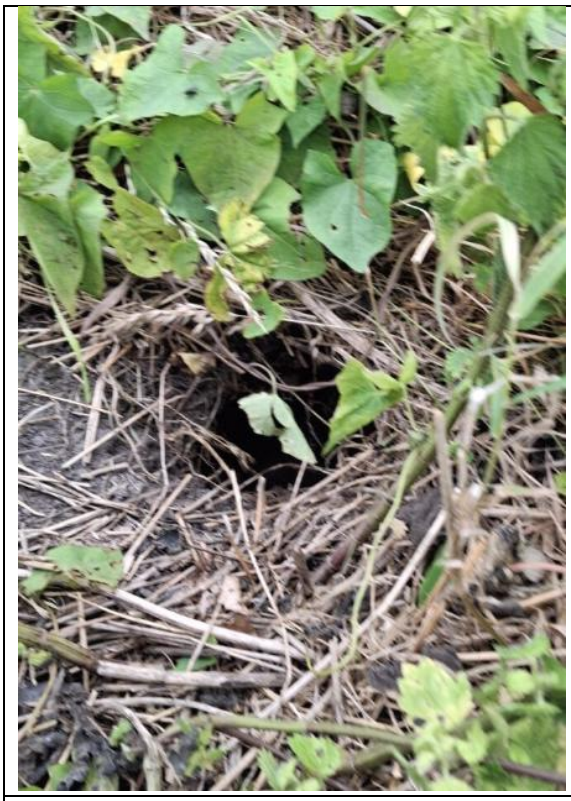
Photograph 14. Winter heliotrope recorded within the Site.

Photograph 15. Himalayan blackberry recorded within the Site.

Photograph 16. Potential features noted during bat roost assessment.

Photograph 17. Potential features noted during bat roost assessment.

Photograph 18. Small burrows/signs of digging along canal bank.



Photograph 19. Small mammal trails recorded within canal bank habitat.

Photograph 20. Potential fox scat recorded within amenity grass habitat.

Photograph 21. Fox recorded on trail camera.

Appendix V – Protected Bird Species

Table A5.1. Records of amber and red listed bird species for the surrounding grid squares from the NBDC.

Species	Grid Square	Date of last record	Designation
Arctic tern (*Sterna paradisaea*)	O13	31/12/2011	Annex I BD SCI Amber
Barn owl (*Tyto alba*)	O13	06/03/2021	Red
Bar-tailed godwit (*Limosa lapponica*)	O13	23/03/2023	Annex I BD SCI Red
Black guillemot (*Cepphus grylle*)	O13	27/08/2024	Amber
Black-headed gull (*Chroicocephalus ridibundus*)	O13 O13G	27/12/2024	SCI Amber
Black-tailed godwit (*Limosa limosa*)	O13	15/03/2023	SCI Red
Brambling (*Fringilla montifringilla*)	O13	18/12/2018	Amber
Guillemot (*Uria aalge*)	O13	09/03/2009	SCI Amber
Common gull (*Larus canus*)	O13	07/06/2024	SCI Amber
Common tern (*Sterna hirundo*)	O13	14/07/2023	Amber
Coot (*Fulica atra*)	O13	17/10/2024	SCI Amber
Cormorant (*Phalacrocorax carbo*)	O13 O13G	18/03/2024	SCI Amber
Curlew (*Numenius arquata*)	O13	06/02/2023	SCI Red
Dunlin (*Calidris alpina*)	O13	31/12/2011	SCI Red

Gadwall (*Mareca strepera*)	O13	31/12/2011	SCI Amber
Goldcrest (*Regulus regulus*)	O13 O13G	18/09/2024	Amber
Golden plover (*Pluvialis apricaria*)	O13	31/12/2011	Annex I BD SCI Red
Goldeneye (*Bucephala clangula*)	O13	31/12/2011	SCI Red
Great crested grebe (*Podiceps cristatus*)	O13	30/07/2020	SCI Amber
Great northern diver (*Gavia immer*)	O13	31/12/2011	Annex I BD SCI Amber
Greenfinch (*Chloris chloris*)	O13 O13G	31/12/2024	Amber
Grey plover (*Pluvialis squatarola*)	O13	31/12/2011	SCI Red
Grey wagtail (*Motacilla cinerea*)	O13 O13G O1332	08/11/2024	Red
Hen harrier (*Circus cyaneus*)	O13	31/12/2011	Annex I BD SCI Amber
Herring gull (*Larus argentatus*)	O13 O13G O1332	30/12/2024	SCI Amber
House martin (*Delichon urbicum*)	O13 O13G	17/06/2024	Amber
House sparrow (*Passer domesticus*)	O13 O13G O1332	31/12/2024	Amber
Kestrel (*Falco tinnunculus*)	O13	27/11/2022	Red
Kingfisher (*Alcedo atthis*)	O13	27/07/2024	Annex I BD SCI Amber
Kittiwake (*Rissa tridactyla*)	O13	01/03/2018	SCI Amber

Knot (*Calidris canutus*)	O13	23/03/2023	SCI Red
Lapwing (*Vanellus vanellus*)	O13	31/12/2011	SCI Red
Lesser black-backed gull (*Larus fuscus*)	O13	21/08/2024	SCI Amber
Light-bellied brent goose (*Branta bernicla hrota*)	O13	31/12/2011	SCI Amber
Linnet (*Linaria cannabina*)	O13 O13G	20/06/2024	Amber
Little egret (*Egretta garzetta*)	O13 O13G	18/10/2024	Annex I BD Green
Mallard (*Anas platyrhynchos*)	O13 O13G O1332	08/12/2024	SCI Amber
Meadow pipit (*Anthus pratensis*)	O13	29/03/2023	Red
Mediterranean gull (*Ichthyaetus melanocephalus*)	O13	15/03/2023	Annex I BD Red
Mute swan (*Cygnus olor*)	O13 O13G	13/12/2024	Amber
Oystercatcher (*Haematopus ostralegus*)	O13	23/03/2023	SCI Red
Peregrine (*Falco peregrinus*)	O13 O13G	30/05/2024	Annex I BD SCI Green
Pochard (*Aythya ferina*)	O13	27/04/2024	SCI Red
Red-breasted merganser (*Mergus serrator*)	O13	02/03/2021	SCI Amber
Redshank (*Tringa totanus*)	O13	16/04/2023	SCI Red
Red-throated diver (*Gavia stellata*)	O13	31/12/2011	Annex I BD SCI Amber
Redwing (*Turdus iliacus*)	O13 O13G	12/03/2023	Red

Ringed plover (*Charadrius hiaticula*)	O13	11/02/2024	SCI Amber
Sand martin (*Riparia riparia*)	O13 O13G	20/06/2024	Amber
Sandwich tern (*Thalasseus sandvicensis*)	O13	30/07/2020	Annex I BD SCI Amber
Scaup (*Aythya marila*)	O13	27/10/2017	SCI Red
Shelduck (*Tadorna tadorna*)	O13	15/03/2023	SCI Amber
Shoveler (*Spatula clypeata*)	O13	25/02/2019	SCI Red
Skylark (*Alauda arvensis*)	O13	29/03/2023	Amber
Smew (*Mergellus albellus*)	O13	08/05/2016	Annex I BD Amber
Snipe (*Gallinago gallinago*)	O13	15/03/2023	Red
Spotted flycatcher (*Muscicapa striata*)	O13	25/05/2023	Amber
Starling (*Sturnus vulgaris*)	O13 O13G O1332	19/12/2024	Amber
Stock dove (*Columba oenas*)	O13	17/08/2021	Red
Swallow (*Hirundo rustica*)	O13 O13G O1332	24/04/2024	Amber
Swift (*Apus apus*)	O13 O13G O1332	30/06/2025	Red
Teal (*Anas crecca*)	O13	11/01/2023	SCI Amber
Tree sparrow (*Passer montanus*)	O13	03/03/2018	Amber

Tufted duck (*Aythya fuligula*)	O13	08/12/2024	SCI Amber
Turnstone (*Arenaria interpres*)	O13	23/03/2023	SCI Amber
Twite (*Linaria flavirostris*)	O13	16/01/2019	Red
Wheatear (*Oenanthe oenanthe*)	O13	06/05/2019	Amber
Whooper swan (*Cygnus cygnus*)	O13	04/03/2020	Annex I BD SCI Amber
Wigeon (*Mareca penelope*)	O13	31/12/2011	SCI Amber
Willow warbler (*Phylloscopus trochilus*)	O13	24/04/2023	Amber
Woodcock (*Scolopax rusticola*)	O13 O13G	22/03/2023	Red
Yellowhammer (Emberiza *citrinella)*	O13	15/03/2023	Red

About DNV

DNV is the independent expert in risk management and assurance, operating in more than 100 countries. Through its broad experience and deep expertise DNV advances safety and sustainable performance, sets industry benchmarks, and inspires and invents solutions.

Whether assessing a new ship design, optimizing the performance of a wind farm, analyzing sensor data from a gas pipeline or certifying a food company's supply chain, DNV enables its customers and their stakeholders to make critical decisions with confidence.

Driven by its purpose, to safeguard life, property, and the environment, DNV helps tackle the challenges and global transformations facing its customers and the world today and is a trusted voice for many of the world's most successful and forward-thinking companies.