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ECOLOGICAL IMPACT ASSESSMENT

For

PROPOSED RESIDENTIAL DEVELOPMENT BY THE LAND DEVELOPMENT AGENCY ON THE FORMER TEAGASC LANDS, KINSEALY, CO DUBLIN

Report Ref. 32152-5

05 February 2025

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Contents

EXECUTIVE SUMMARY

This report presents an Ecological Impact Assessment (EcIA) of the potential effects of a proposed residential development in Kinsealy, Co Dublin on habitats and species, particularly those protected by National and International legislation or considered to be of particular nature conservation importance. The report describes the ecology of the proposed development area, with emphasis on habitats, flora and fauna, and assesses the potential effects of the proposed development on ecological receptors. The report was prepared by TMS Environment Ltd and also considers specialist reports prepared by Openfield Ecological Services and by Wildlife Surveys Ireland as referenced in the report.

This report concludes that the proposed development is unlikely to have any significant impact on protected species. With the proper implementation of bat protection measures and appropriate lighting during both construction and operational phases, the impact on local bat populations will be minimal. Measures such as tree root protection for flora and safeguarding mature/semi-mature trees for fauna as well as retention of as much vegetation as feasible will ensure no significant effects occur.

The lighting plan will be designed to minimize disturbance to nocturnal species, using directional lighting away from trees and hedgerows. It is recommended that the project proceed as planned, incorporating the biodiversity enhancement measures outlined in this report and accompanying documents.

1.0 INTRODUCTION

This report presents an Ecological Impact Assessment (EcIA) of the potential effects of a proposed residential development in Kinsealy, Co Dublin on habitats and species, particularly those protected by National and International legislation or considered to be of particular nature conservation importance. The report describes the ecology of the proposed development area, with emphasis on habitats, flora and fauna, and will assess the potential effects of the proposed development on ecological receptors.

The report was prepared by Nathaniel Blue (Environmental Consultant) of TMS Environment Ltd. Nathaniel Blue has a BSc in Environmental Science from the University of Seattle (2020) and an MSc in Environmental Science from Trinity College Dublin. Nathan has three years post-qualification experience in the completion of environmental assessments for a range of project types in Ireland.

2.0 LEGISLATION AND GUIDANCE

2.1 Introduction

The report follows the Guidelines for Ecological Impact Assessment in the UK and Ireland, by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018). Relevant National and International legislation relating to protection of habitats and species is discussed in the following sections of this report.

2.2 National legislation

2.2.1 Wildlife Act (1976) and amendments

The Wildlife Act 1976 was enacted to provide protection to birds, animals, and plants in Ireland and to control activities which may have an adverse impact on the conservation of wildlife. It is the principal national legislation providing for the protection of wildlife. Currently all bird species, 23 other animal species or groups of species and 157 species of flora are afforded protected status under the Act. Protected species include all birds, badgers, bats, otter, red squirrel, the common frog and a range of other species. The list of flora species protected under the Act are set out in the Flora Protection Order 2022. The protection afforded by the Wildlife Act applies to the species wherever they are found.

2.2.2 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 regards to the listed species, "*Deliberately captures or kills any specimen of these species in the wild, deliberately disturbs these species particularly during the period of breeding, rearing, hibernation and migration, deliberately takes or destroys eggs from the wild or damages or destroys a breeding site or resting place of such an animal shall be guilty of an offence*."

2.2.3 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. The European Union (Invasive Alien Species) Regulations 2024 (SI 475 of 2024) provide a comprehensive list of designated alien species and vector materials and sets out the controls applicable and power of the Authorities to exercise control.

2.3 International Legislation

2.3.1 EU Birds Directive

The Birds Directive constitutes a level of general protection for all wild birds throughout the European Union. Annex I of the Birds Directive includes a total of 194 bird species that are considered rare, vulnerable to habitat changes or in danger of extinction within the European Union. The Directive requires the designation of Special Protection Areas (SPAs) for: listed and rare species, regularly occurring migratory species and for wetlands which attract large numbers of birds. There are 25 Annex I species that regularly occur in Ireland and a total of 165 Special Protection Areas have been designated.

2.3.2 EU Habitats Directive

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

2.3.3 Water Framework Directive

The EU Water Framework Directive (WFD) 2000/60/EC is a significant piece of environmental legislation which aims to protect and improve water quality. It applies to all waters including rivers, lakes, groundwater, estuaries, and coastal waters. 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' status, through River Basin Management Plans (RBMP), by 2027.

2.3.4 Bern and Bonn Convention

The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1982) was enacted to conserve all species and their habitats. The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979, enacted 1983) was introduced to give protection to migratory species across borders in Europe.

2.3.5 Ramsar Convention

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

2.4 Fingal Development Plan 2023 - 2029

The Fingal Development Plan sets a number of objectives in relation to protection and enhancement of biodiversity. For all developments the following Strategic Objectives, Policies

and Objectives apply and where relevant have been considered in this assessment.

Strategic Objective 11

Protect, enhance and connect areas of natural heritage, green infrastructure and open space for the benefits of quality of life, biodiversity, protected species and habitats, while having the potential to facilitate climate change adaptation and flood risk measures.

HER POL 27

To protect, conserve and enhance the County's biodiversity where appropriate.

HER POL 28

To integrate in the development management process the protection and enhancement of biodiversity and landscape features wherever possible, by minimising adverse impacts on existing habitats (whether designated or not) and by including mitigation and/or compensation measures, as appropriate.

HER POL 31

To ensure that the ecological impact of all development proposals on habitats and species are appropriately assessed by suitably qualified professional(s) in accordance with best practice guidelines – e.g. the preparation of an Ecological Impact Assessment (EcIA), Screening Statement for Appropriate Assessment, Environmental Impact Assessment, Natura Impact Statement (NIS), species surveys etc. (as appropriate).

HER POL 35

To ensure, where appropriate, the protection and conservation of areas, sites, species and ecological/networks of biodiversity value outside designated sites and to require an appropriate level of ecological assessment by suitably qualified professional(s) to accompany development proposals likely to impact on such areas or species.

HER POL 36

To consult with the National Parks and Wildlife Service and take account of their views and any licensing requirements, when undertaking, approving or authorising development which is likely to affect plant, animal or bird species protected by law.

HER OBJ 30

To implement, in partnership with the Department of Culture, Heritage and the Gaeltacht, relevant stakeholders and the community, the objectives and actions of

Ireland's National Biodiversity Action Plan 2017 - 2021 which relate to the remit and functions of Meath County Council.

Objective CSO25

*Require that new development in the urban settlements of the Dublin City and Suburbs area optimises existing local heritage resources and public amenities, while protecting the character and biodiversity of the villages.**HER OBJ 32***

To actively support the implementation of the All Ireland Pollinator Plan 2021-2025 and any revisions thereof.

HER OBJ 35

To ensure that development does not have a significant adverse impact, incapable of satisfactory avoidance or mitigation, on plant, animal or bird species protected by law.

***DM OBJ 11:** Existing trees and hedgerows of biodiversity and/or amenity value shall be retained, where possible.*

HER POL 37

To encourage the retention of hedgerows and other distinctive boundary treatments in rural areas and prevent loss and fragmentation, where practically possible. Where removal of a hedgerow, stone wall or other distinctive boundary treatment is unavoidable, mitigation by provision of the same type of boundary will be required.

HER POL 38

To promote and encourage planting of native hedgerow species in new developments and as part of the Council's own landscaping works.

Objective GI 3

Maximise the opportunities for enhancing the green infrastructure resource through the provision of urban landscape features such as green corridor routes and links, swales, green roofs, trees and shrubs within the new development and public realm.

Objective GI 4

Provide for the protection, conservation and enhancement of wildlife habitats and natural resources, including the existing watercourses on site and features such as ecologically important hedgerows and mature trees within the area.

Objective GI 9

Protect existing trees, hedgerows, townland boundaries and watercourses which are of

amenity, historic or biodiversity value and ensure that proper provision is made for their protection and management in future development proposals in accordance with a Green Infrastructure and Landscape Strategy.

Objective GI 19

Protect, preserve and ensure the effective management of trees and groups of trees.

Objective GI 20

Implement a scheme of tree and hedgerow protection measures, in compliance with British Standard 5837 (2012), Trees in Relation to Design, Demolition and Construction to Construction – Recommendations' and in agreement with Fingal County Council, prior to commencement of development. The scheme of protection measures to be maintained in place until effective completion of all construction works.

Objective GI 24

Require that SuDS corridors alongside roads and green corridors incorporate wildlife habitat, pedestrian links and structural planting where appropriate.

Objective GI 29

Ensure that any new hedgerows and tree species within the site are planted with non-invasive species which will provide alternative habitat for displaced wildlife, be compatible with local landscape values and help maintain connectivity for species which rely on such features for movement or feeding.

Objective CIOSO52

Protect, preserve and ensure the effective management of trees and groups of trees.

Objective CIOSO54

Ensure that all animals including pets and wildlife are adequately catered for and protected in parks and open spaces.

Objective GINHO46

Ensure adequate justification for tree removal in new developments and open space management and require documentation and recording of the reasons where tree felling is proposed and avoid removal of trees without justification.

Objective DMSO131

Street tree planting plans shall accompany developments over 50 units. Constructed tree pits will be required where trees are planted in hard surfaces and grass verges less

than 1.2m wide. These plans will include the location of each constructed tree pit of a minimum rooting volume of 16 cubic metres, lamp standards and underground services. The location of tree planting in proximity to built features including footpaths must refer to BS5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations. The width of grass verges where tree planting is proposed must be labelled on landscape plans.

Objective DMSO139

Ensure that an ecological study is carried out of the development site covering habitats and flora, breeding birds, bats and amphibians to identify existing ecological valuable features and the species composition of the site.

Objective DMSO140

Protect existing landscape features such as scrub, woodland, large trees, hedgerows, meadows, ponds and wetlands which are of biodiversity or amenity value and/or contribute to landscape character and ensure that proper provision is made for their protection and management.

Objective DMSO141

Incorporate habitat features (new or existing) and other conservation measures for species of conservation interest (e.g. legally protected species or Amber and Red listed bird species) in the Integrated Green Infrastructure Plan.

Objective DMSO142

Where invasive plant species such as Japanese Knotweed, Giant Hogweed, Himalayan Balsam, Rhododendron Ponticum and three-cornered leek are present on a development site, the developer shall submit an invasive species control plan as part of the planning process. This control plan will describe what and where invasive species are present and what control measures will be implemented, who will implement these and when they will be implemented. Annual monitoring reports on the control program are to be submitted to the Planning Authority until the invasive species is eradicated.

Objective DMSO143

Require all new developments to incorporate habitat facilities for wildlife species as appropriate including Kestrel, Peregrine, Swifts, House Sparrows, Swallow, Starling, Bats and insects in or on buildings facades.

Policy IUP44

Promote appropriate lighting installations, availing of best practice as published by the relevant authority, designed to minimise light pollution / unwanted environmental effects while maximising the light reaching the public realm.

Objective IUO64

Require that the design of lighting schemes minimises the incidence of light spillage or pollution into the surrounding environment and new schemes shall ensure that there is no unacceptable adverse impact on neighbouring development, visual amenity and biodiversity in the surrounding areas.

3.0 METHODOLOGY

3.1 Introduction

The objectives of this study were as follows:

- To carry out baseline ecological surveys and evaluate the current status and importance of the site of the proposed development;
- To assess the potential significance of effects of the proposed development on habitats, protected and other species;
- To propose suitable mitigation measures where appropriate.

The assessment was conducted with reference to relevant sections of the '*Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* (2018)' issued by the Chartered Institute of Ecology and Environmental Management (CIEEM, September 2018). Other relevant Guidance considered includes the following:

- NRA (2009) *Guidelines for Assessment of Ecological Impacts of National Road Schemes* (National Roads Authority)
- *The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads* (National Roads Authority (NRA), 2010);
- *Guidelines for the Treatment of Badgers prior to the Construction of National Road Schemes* (NRA, 2006a);

3.2 Desk Study

A desktop study was carried out to collate information on the ecology of the site and surrounding areas. The study considered the following sources of information:

- Information on species records and distributions, obtained from the National Biodiversity Data Centre (NBDC);
- Information on waterbodies, catchment areas and hydrological connections obtained from the Environmental Protection Agency (EPA);
- Information on bedrock, groundwater, aquifers and their statuses, obtained from Geological Survey Ireland (GSI);
- Information on the network of designated conservation sites, boundaries, qualifying interests and conservation objectives, obtained from the National Parks and Wildlife Service (NPWS);
- Satellite imagery and mapping obtained from various sources and dates including Google, Open Street and Ordnance Survey Ireland;
- Information on the existence of permitted developments, or developments awaiting decision, in the vicinity of the proposed development from Fingal County Council;
- Information on the extent, nature and location of the proposed development, provided by the applicant and/or their design team;
- The current conservation status of birds in Ireland taken from Gilbert et al. (2021).
- The pollinator friendly planting code provided by The All-Ireland Pollinator Plan (2015-2020 and 2021-2025);
- Fingal Biodiversity Action Plan 2023-2030;
- Fingal Development Plan 2023-2029.

3.3 Site Survey

There were multiple field surveys completed by three different ecologists as part of this report. TMS Environment Ltd personnel carried out baseline surveys in August 2023 and in September 2024 to inform the assessment. In addition to data acquired by TMS Environment Ltd, this report also uses the data obtained from both the Appropriate Assessment (AA) screening report produced by Openfield Ecological services and the bat assessment produced by Wildlife Surveys Ireland. The AA survey of the development site was carried out in 2023 in accordance with best practice standards (Smith et al., 2011). The bat survey was completed in September 2023 and in June 2024.

Field surveys were undertaken to establish current baseline conditions in respect of flora and fauna, and to review the surrounding area. This involved a systematic walk-over survey of the

site and boundaries. Habitat classifications were in accordance with Fossitt's "*A Guide to Habitats in Ireland*" (2000). Observations were made on fauna species present or likely to occur on site, including direct observations as well as considering the potential of habitats to support various species.

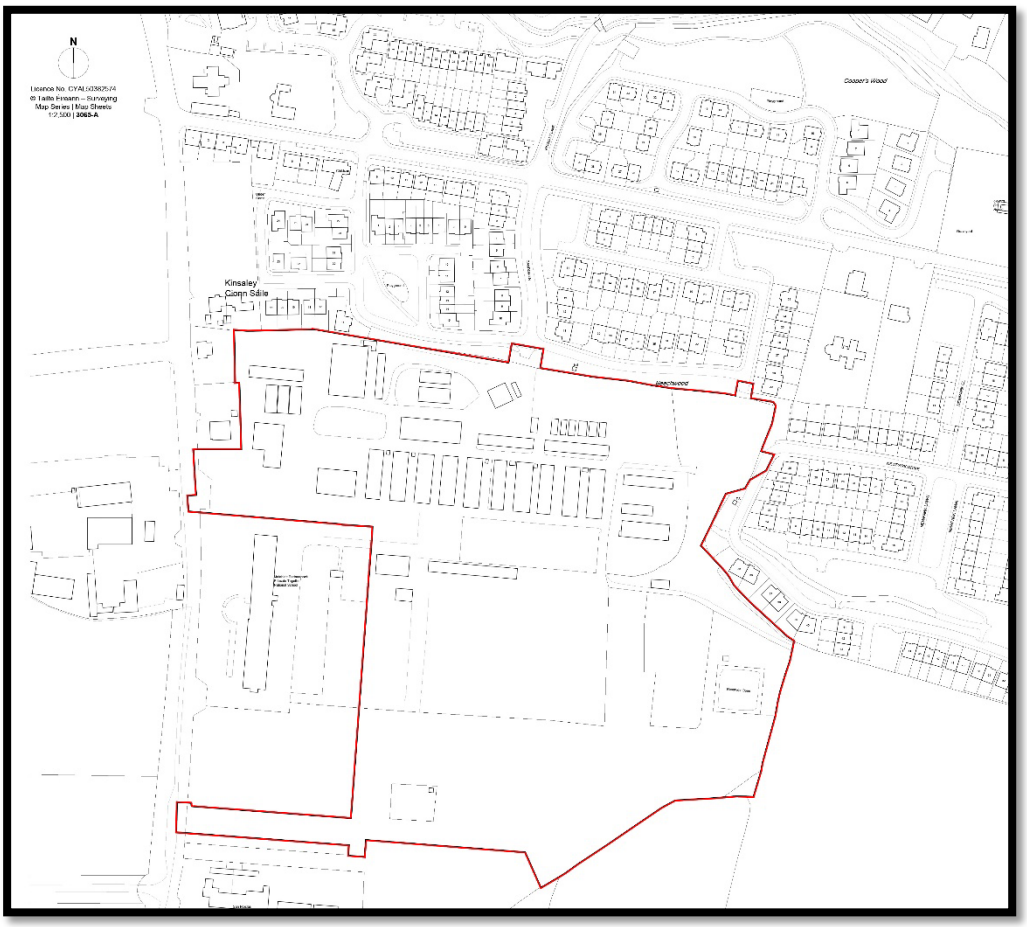
4.0 THE PROPOSED DEVELOPMENT

4.1 Site location and description

The former Teagasc Research Centre is located on the Malahide Road just south of Kinsealy Village as shown in Figure 4.1. The site has been used as an agri-food research and development centre until recent years. An administrative building beside the entrance is in use, and the original Teagasc building, which is a protected structure, is accommodating the Malahide Portmarnock Educate Together National School on a temporary basis.

The development site is bordered to the west by the R107 Malahide Road, to the north by a recently completed residential development called 'Kinsealy Manor' (no. 82 units), to the east by a new development under construction called 'Newpark' (no. 96 units), and to the south by the balance of the Teagasc lands, St. Nicholas of Myra National School and a commercial truck maintenance company, KC Commercials.

Figure 4.1 Site Location



4.2 Description of proposed development

The proposed development consists of the demolition of existing buildings and structures on a site associated with the former Teagasc Research Centre, and the construction of 193 no. residential dwellings comprising 153 no. two storey houses (consisting of 30 no. two-bed; and 123 no. three-bed terraced houses) and 40 no. duplex units (comprising 20 no. two-bed ground floor apartments with 20 no. three-bed duplexes above) arranged in three storey blocks.

The proposed development includes a single storey childcare facility (approx. 283 sqm gross floor area) with the capacity for approximately 50 children.

The proposed development incorporates approximately 1.65 ha of dedicated public open space comprising a series of open spaces and a central east-west green route linear park and parklands along the east boundary. In addition, 2.2 ha of green belt lands are included to the south and south-east of the residential development area to accommodate a playing pitch.

Vehicular access to the site will be via a new vehicular entrance at Gandon Lane to the north (providing access to the northern part of the site) and a new vehicular access from the Malahide Road, located to the south of the existing Malahide Portmarnock Educate Together National School (providing access to the southern part of the site).

The proposed development includes 229 no. car parking spaces (comprising 193 no. residential spaces, 4 no. childcare drop off spaces, 3 no. childcare staff spaces, and 29 no. visitor spaces), and 345 no. bicycle parking spaces (201 no. private secure on-curtilage spaces for houses without independent garden access, 100 no. private secure spaces and 20. no. visitor spaces for duplex units, 20 no. childcare drop-off spaces, and 4 no. childcare staff spaces).

The proposed development facilitates pedestrian and cycle links to existing and proposed adjoining developments, including the provision of an east-west greenway connecting residential lands to the east of the site at Newpark to the Malahide Road and the provision of a north-south link connecting Beechwood in the north to the green belt lands in the south, with provision for a future link to the St Nicholas of Myra national school.

The proposed development has an overall site area of 8.2 ha, and includes bin storage, internal roads, boundary treatments, public lighting, 3 no. ESB unit substations, water supply, surface water drainage and foul water drainage infrastructure, and all associated and ancillary site and development works.

4.3 Foul Drainage

The Engineering Services Report prepared by CS Consulting Group provides a detailed description of the foul drainage, discharge and treatment system. It is proposed to discharge a large portion of the foul effluent from the proposed development into a newly constructed foul infrastructure constructed for the neighboring Newpark Estate. The remaining foul effluent from the proposed development is proposed to discharge into the existing foul network serving the Gandon Lane development north of the subject site.

4.4 Surface Water Drainage Network and SuDS Features

The surface water management plan is also detailed in the Engineering Services Report prepared by CS Consulting Group.

All surface water management for proposed developments is required to be designed to comply with the Greater Dublin Strategic Drainage Study (GDSDS). The GDSDS and the Irish Water Regional Code of Practice for Drainage Works require that four main criteria be provided by the developer.

- Criterion 1: River Water Quality Protection
- Criterion 2: River Regime Protection
- Criterion 3: Level of Service (flooding) for the site
- Criterion 4: River Flood Protection

Fingal County Council requires that all storm water is managed in two phases:

- Phase 1: Restrict storm water runoff from the proposed development to greenfield runoff rates.
- Phase 2: To incorporate Sustainable Drainage Systems (SuDS) proposals into the scheme. The SuDS concept requires that storm water quality is improved before disposal and, where applicable, storm water is discharged to ground on site.

It is Fingal County Council Policy to include Sustainable Drainage Systems (SuDS) for all new applications, and SuDS principles have been incorporated into the design of the drainage for the site as shown in the Infrastructure Design Report. The principal SuDS features of the proposed development are as follows:

- Rain gardens - located in a few of the open spaces of the development, these provide

initial interception.

- Permeable paving – carparking bays are to be fitted with a permeable paving surface to allow rainwater to percolate through the pavement and into the strata below.
- Permeable macadam – a portion of the footpath is to be fitted with a permeable paving surface to allow rainwater to percolate through the pavement and into the strata below.
- Swales – strategically placed along several roads within the development, these help alleviate runoff in the initial stages of a storm event.
- Oil Separator – before outfalling to the pond, a suitable oil separator is to be fitted to allow any hydrocarbons which may have built up from onsite traffic to be removed from storm water prior to disposal.

4.5 Landscape plans

The proposed internal planting has been described in the Landscape Design Rationale prepared by Ronan Mac Diarmada & Associates.
It is proposed that the site will incorporate existing mature vegetation into new development proposals where practical and feasible. The plan seeks to plant plants that are included within the All-Ireland Pollinator Plan as to support native Irish plants as opposed to the many non-native plants on the site currently. In total, it is proposed to plant 543 new trees which is slightly more than double the 262 trees that are currently on site. The removal of 190 of the 262 trees currently on site is also proposed.

One of the main features of the landscape of the site is the green corridor accommodating cycle and footpath facilities through both sites, connecting to the Malahide Road. The route will provide for high quality pedestrian and cycle facilities, will be tree lined, appropriately lit and afforded high levels of passive surveillance. This green corridor will provide an area of unfragmented open habitat which is beneficial to terrestrial mammals as it provides them uninhibited access to various potential habitats in the surrounding areas. In total 3.79 ha. out of 8.12 ha. or 47% of the lands will provide open habitats. Of this 3.79 ha. of open habitat, approximately 3.4 ha. will be unfragmented.

4.6 Construction Programme and Construction Works

The construction works will be managed in accordance with the Construction Environmental Management Plan (CEMP) and will include the following major works:

- Site establishment and set up, hoarding, site security, access control;
- Removal of services / utilities;
- Site clearance;
- Site excavation;
- Foundation works;
- Superstructure;
- Infrastructure, landscaping and completion.

These works have been considered for assessment of relevance in terms of possible effects on Natura 2000 sites. In particular, the following areas have been highlighted as a specific focus of the assessments:

- Earthworks, excavations, site clearance;
- In stream works within the existing drainage ditch;
- Sediment and hydrocarbon runoff;
- Stormwater and wastewater management;
- Management of invasive species;
- Disturbance to protected species and protected sites;

4.7 Site Habitats Maps

The estimated area of each habitat type identified within the proposed development site is listed below:

- BC4 Flower beds and borders .05 hectares
- GS2 Dry Meadows and Grassy Verges 2.39 hectares
- WS2 Immature woodland 1.37 hectares
- WS1 Scrub 0.39 hectares
- WD1 (Mixed) Broadleaved Woodland 2.02 hectares
- FL8 Other Artificial Lakes and Ponds 0.07 hectares
- BC2 Horticultural land 0.56 hectares
- GA2 Amenity Grassland (Improved) 0.21 hectares
- BL3 Buildings and Artificial Surfaces 0.89 hectares

There are also linear habitats on the site in the form of WL1 Hedgerows and WL2 Treelines. The approximate length of the linear habitats is as follows:

- WL1 Hedgerows (Non-native) 220 meters
- WL1 Hedgerows (Native) 800 meters
- WL2 Treelines 1.1 kilometers

The habitats across the site area provide local value for biodiversity but none is an example of high value habitats listed on Annex I of the Habitats Directive.

There are no natural water courses, land drains or natural bodies of open water.

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Figure 5.2 Current Site Habitat Map for Proposed Development Site

4.8 Habitat types and Flora

The details of the specific species of flora on the site are included below based of the individual habitat types observed during the site surveys. These habitat types were based off the Fossitt Classification.

BL3 Buildings and Artificial Surfaces

This category includes all buildings as well as areas of land that are covered with artificial surfaces of tarmac, cement, pavements, and other such hardstanding. It should be noted that greenhouses and polythene tunnels are excluded from this category.

This habitat type composes 0.89 hectares of the site. The vast majority of this habitat type is located on the northern third of the site. This includes office buildings, car parking areas, hardstandings, and other buildings on the site.

GA2 Amenity Grassland (Improved)

This type of grassland is improved, or species-poor, and is managed for purposes other than grass production. This type of grassland can be categorized as the traditional lawn.

This habitat type composes 0.21 hectares of the site. This area is located on the northern portion of the site near the building on site currently being used as an office space as well as a small portion on the southern portion of the site.

BC2 Horticultural land

This category includes areas of land that are cultivated and managed for the production of vegetables, fruit crops, greenhouses, and polythene tunnels.

This habitat composed 0.56 hectares of the site and contains the greenhouses, as well as the small apple tree (Malus domestica) orchards located on the site. Due to lack of maintenance, the vegetation in and around the greenhouses is overgrown and includes a mix of native and non-native plants such as Brambles Rubus fruticosus agg., Rosebay Willowherb Chamerion angustifolia, Red Valerian Centranthus ruber, Butterfly-bush Buddleja davidii and Giant Viper's-bugloss Echium pininana,

FL8 Other Artificial Lakes and Ponds

In the south east portion of the site, there is an artificial pond which has been used as a reservoir and is lined with impermeable sheeting. It covers an area of approximately 0.07 hectares.

WD1 (Mixed) Broadleaved Woodland and WS2 Immature woodland

Approximately 3.39 hectares of the site contains a combination of mature and immature wood lands. Mixed broadleaved woodlands are characterized by woodland areas with 75-100% cover of broadleaved trees, and 0-25% cover of conifers. Trees may include native and non-native species. A 5 meter height in the canopy is the accepted height in determining mature trees in a non-wetland area. The mature woodlands comprises approximately 2.02 hectares of the area. The remainder of the 3.39 hectares contains the immature woodlands WS2. Immature woodlands are characterized by areas that are dominated by young or sapling trees that have not yet reached the threshold height of 5 meters.

The woodland areas are mainly located in the center of the site and the northern boundary of the site, with pockets of woodlands existing on other portions of the site as well.

Some of the species found in the woodland areas include stands of mature and establishing trees including Rowan Sorbus aucuparia, Field Maple Acer campestris, Hornbeam Carpinus betulus, Eucalyptus Eucalyptus sp, Pine, Alder, Poplar Populus sp., Lime Tilia cordata, Sycamore Acer pseudoplatanus, Field Maple, Alder Alnus sp. with Cherry Prunus sp., Pine Pinus sp. including Brambles, Ivy Hedera helix and New Zealand Broadleaf Grisilinea littoralis.

WS1 Scrub

This category includes areas that are dominated by at least 50% cover of shrubs, stunted trees or brambles. Scrub frequently develops as a precursor to woodland but does not include areas that are dominated by young or sapling trees.

This habitat covers 0.39 hectares of the site and is mainly located in-between the greenhouses and surrounding buildings as well as a larger section located on the eastern border of the site. The scrub areas are mainly dominated by Brambles.

GS2 Dry Meadows and Grassy Verges

Dry meadows are characterized by land that is rarely fertilized or grazed, and are mown only once or twice a year. These grasslands contain a high proportion of tall, coarse and tussocky grasses. This habitat is relatively rare in Ireland as most fields that could be this habitat type are being used for agricultural purposes.

This habitat covers 2.39 hectares of the site and is mainly located on the southern portion of

the site with smaller portions located on the northern borders of the site.

This area contains rough grasses such as Cock's-foot Dactylis glomerata, Creeping Bent Agrostis stolonifera and False Oat Arrhenatherum elatius along with Brambles, Creeping Thistle Cirsium arvense, Hogweed Heracleum sphondylium and Creeping Buttercup Ranunculus repens.

BC4 Flower beds and borders

There is a small area of flower beds located between two of the greenhouses. This area only composes .05 hectares of the site. As the flower beds are in disuse they are mainly sparsely covered in various weeds.

WL1 Hedgerows

Hedgerows are linear strips of shrubs, often with occasional trees, that typically form field or property boundaries.

There are both native and nonnative hedgerows on the site. The native hedgerows cover a length of approximately 800 meters and are comprised of mainly Hawthorn Crataegus monogyna, Brambles and Ivy.

The nonnative hedgerows cover an area of approximately 220 meters and are comprised of Laurel Prunus sp.

WL2 Treelines

Treelines are narrow rows or a single line of trees that is greater than 5 m in height and typically occurs along field or property boundaries. This category includes tree-lined roads or avenues, narrow shelter belts with no more than a single line of trees, and overgrown hedgerows that are dominated by trees.

There are approximately 1.1 kilometers of treelines on the site and they mainly exist along the boundaries of the woodland areas and are made up of the same species included in the section on the woodlands.

5.0 PROTECTED SPECIES

In addition to the site survey undertaken by TMS Environment Ltd, separate site surveys were undertaken by Openfield Ecological services and by Wildlife Surveys Ireland. and the findings of all surveys were considered in formulating the baseline report and from published flora and fauna records.

5.1 Birds

All wild birds and their nests are protected under the Wildlife Acts. Given the nature of the site and existing land uses, common garden and hedgerow birds would be expected for such a site. In addition, species associated with arable lands would also be typical. No species recorded is listed under Annex I of the E.U. Birds Directive.

The previous thirty years of bird records were reviewed on the National Biodiversity Data Centre website for the 10km box in which the proposed development is located. The notable bird species recorded in O24 Tetrad are listed in Table 5.2 below.

There is the potential for listed bird species of terrestrial habitats to occur within the proposed development area. Birds of prey such as the Kestrel and species from the order passerine such as Goldcrest and Swallows are examples of these species.

Bird species associated with coastal habitats and watercourses are unlikely to utilize the proposed development site. If these birds were to utilize the lands within the red line boundary, it would be temporary given the lack of suitable breeding habitat and limited food supply. Lands in proximity to the SPA would offer more suitable habitats.

Table 5.1 Birds Observed at the Proposed Development Site during surveys

Common Name	Scientific Name	E.U. Birds Directive	BoCCI List
Hooded Crow	*Corvus cornix*	-	Green List
Rook	*Corvus frugilegus*	-	Green List
Jackdaw	*Corvus monedula*	-	Green List
Raven	*Corvus corax*	-	Green List
Magpie	*Pica pica*	-	Green List
Bullfinch	*Pyrrhula pyrrhula*	-	Green List
Mistle Thrush	*Turdus viscivorus*	-	Green List
Goldfinch	*Carduelis carduelis*	-	Green List
Pheasant	*Phasianus colchicus*	-	Green List
Red Kite	*Milvus milvus*	-	Green List
Robin	*Erthacus rubecula*	-	Green List
Woodpigeon	*Columba palumbus*	-	Green List
Starling	*Sturnus vulgoris*	-	Green List
Swallow	*Hirundo rustica*	-	Green List
Blackbird	*Turdus merula*	-	Green List
Blue tit	*Cyanistes caeruleus*	-	Green List
Great tit	*Parus major*	-	Green List
Buzzard	*Buteo buteo*	-	Green List
Chaffinch	*Fringilla coelebs*	-	Green List
Song Thrush	*Turdus philomelos*	-	Green List
Wren	*Troglodytes troglodytes*	-	

Table 5.2 NBDC Bird Records

Common Name	Scientific Name	Dataset	Designation
Arctic Tern	*Sterna paradisaea*	Birds of Ireland	Annex I Bird Species Amber List
Atlantic Puffin	*Fratercula arctica*	Birds of Ireland	Amber List
Barn Owl	*Tyto alba*	Bird Atlas 2007 - 2011	Red List
Barn Swallow	*Hirundo rustica*	Birds of Ireland	Amber List
Bar-tailed Godwit	*Limosa lapponica*	Birds of Ireland	Annex I Bird Species Amber List
Black Guillemot	*Cepphus grylle*	Birds of Ireland	Amber List
Black-headed Gull	*Larus ridibundus*	Bird Atlas 2007 - 2011	Red List
Black-legged Kittiwake	*Rissa tridactyla*	Birds of Ireland	Amber List
Black-necked Grebe	*Podiceps nigricollis*	Bird Atlas 2007 - 2011	Red List
Black-tailed Godwit	*Limosa limosa*	Birds of Ireland	Amber List
Black-throated Diver	*Gavia arctica*	Bird Atlas 2007 - 2011	Annex I Bird Species, Amber List
Brent Goose	*Branta bernicla*	Birds of Ireland	Amber List
Canada Goose	*Branta canadensis*	Irish Wetland Birds Survey (I-WeBS) 1994-2001.	High Impact Invasive Species Regulation S.I. 477 (Ireland), Annex II, Section I Bird Species
Common Coot	*Fulica atra*	Bird Atlas 2007 - 2011	Annex II, Section I Bird Species, Annex III, Section II Bird Species, Amber List
Common Eider	*Somateria mollissima*	Irish Wetland Birds Survey (I-WeBS) 1994-2001.	Annex II, Section II Bird Species, Annex III, Section II Bird Species, Amber List
Common Goldeneye	*Bucephala clangula*	Bird Atlas 2007 - 2011	Annex II, Section II Bird Species, Amber List
Common Grasshopper Warbler	*Locustella naevia*	Birds of Ireland	Amber List

Common Name	Scientific Name	Dataset	Designation
Common Greenshank	*Tringa nebularia*	Birds of Ireland	Amber List
Common Guillemot	*Uria aalge*	Birds of Ireland	Amber List
Common Kestrel	*Falco tinnunculus*	Birds of Ireland	Amber List
Common Kingfisher	*Alcedo atthis*	Bird Atlas 2007 - 2011	Annex I Bird Species, Amber List
Common Linnet	*Carduelis cannabina*	Birds of Ireland	Amber List
Common Pheasant	*Phasianus colchicus*	Bird Atlas 2007 - 2011	Annex II, Section I Bird Species, Annex III, Section I Bird Species
Common Pochard	*Aythya ferina*	Bird Atlas 2007 - 2011	Annex II, Section I Bird Species, Annex III, Section II Bird Species, Amber List
Common Redshank	*Tringa totanus*	Birds of Ireland	Red List
Common Sandpiper	*Actitis hypoleucos*	Birds of Ireland	Amber List
Common Scoter	*Melanitta nigra*	Birds of Ireland	Annex II, Section II Bird Species, Annex III, Section III Bird Species, Red List
Common Shelduck	*Tadorna tadorna*	Birds of Ireland	Amber List
Common Snipe	*Gallinago gallinago*	Bird Atlas 2007 - 2011	Annex II Section I Bird Species, Annex III Section III Bird Species, Amber List
Common Starling	*Sturnus vulgaris*	Birds of Ireland	Amber List
Common Swift	*Apus apus*	Swifts of Ireland	Amber List
Common Tern	*Sterna hirundo*	Birds of Ireland	Annex I Bird Species, Amber List
Common Wood Pigeon	*Columba palumbus*	Birds of Ireland	Annex II, Section I Bird Species, Annex III, Section I Bird Species
Corn Crake	*Crex crex*	The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972.	Annex I Bird Species, Red List
Dunlin	*Calidris alpina*	Birds of Ireland	Annex I Bird Species, Amber List
Eurasian Curlew	*Numenius arquata*	Bird Atlas 2007 - 2011	Annex II, Section II Bird Species, Red List
Eurasian	*Haematopus*	Birds of Ireland	Amber List

Common Name	Scientific Name	Dataset	Designation
Oystercatcher	*ostralegus*		
Eurasian Teal	*Anas crecca*	Bird Atlas 2007 - 2011	Annex II Section I Bird Species, Annex III Section II Bird Species, Amber List
Eurasian Tree Sparrow	*Passer montanus*	Birds of Ireland	Amber List
Eurasian Wigeon	*Anas penelope*	Birds of Ireland	Annex II, Section I Bird Species, Annex III, Section II Bird Species, Amber List
Eurasian Woodcock	*Scolopax rusticola*	Bird Atlas 2007 - 2011	Annex II section I, Annex III section III Bird Species, Amber List
European Golden Plover	*Pluvialis apricaria*	Birds of Ireland	Annex I, Annex II section III, Annex III section III Bird Species, Red List
European Shag	*Phalacrocorax aristotelis*	Birds of Ireland	Amber List
Gadwall	*Anas strepera*	Bird Atlas 2007 - 2011	Annex II, Section I Bird Species, Amber List
Great Black-backed Gull	*Larus marinus*	Birds of Ireland	Amber List
Great Cormorant	*Phalacrocorax carbo*	Birds of Ireland	Amber List
Great Crested Grebe	*Podiceps cristatus*	Birds of Ireland	Amber List
Great Northern Diver	*Gavia immer*	Birds of Ireland	Annex I Bird Species
Greater Scaup	*Aythya marila*	Bird Atlas 2007 - 2011	Annex II, Section II Bird Species, Annex III, Section III Bird Species, Amber List
Grey Partridge	*Perdix perdix*	The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972.	Annex III, Section I Bird Species, Red List
Grey Plover	*Pluvialis squatarola*	Bird Atlas 2007 - 2011	Amber List
Greylag Goose	*Anser anser*	Birds of Ireland	Invasive Species Regulation S.I. 477 (Ireland), Annex II, Section I Bird Species, Annex III, Section II Bird Species, Amber List

Common Name	Scientific Name	Dataset	Designation
Herring Gull	*Larus argentatus*	Bird Atlas 2007 - 2011	Red List
House Martin	*Delichon urbicum*	Birds of Ireland	Amber List
House Sparrow	*Passer domesticus*	Birds of Ireland	Amber List
Jack Snipe	*Lymnocryptes minimus*	Bird Atlas 2007 - 2011	Annex II, Section I Bird Species, Annex III, Section III Bird Species
Kentish Plover	*Charadrius alexandrinus*	Rare birds of Ireland	Annex I Bird Species
Lesser Black-backed Gull	*Larus fuscus*	Bird Atlas 2007 - 2011	Amber List
Little Egret	*Egretta garzetta*	Birds of Ireland	Annex I Bird Species
Little Grebe	*Tachybaptus ruficollis*	Birds of Ireland	Amber List
Little Gull	*Larus minutus*	ObSERVE Aerial Surveys for Seabirds and Cetaceans in the Irish Atlantic Margin	Annex I Bird Species
Little Tern	*Sternula albifrons*	The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991	Annex I Bird Species, Amber List
Long-tailed Duck	*Clangula hyemalis*	Bird Atlas 2007 - 2011	Annex II, Section II Bird Species
Mallard	*Anas platyrhynchos*	Birds of Ireland	Annex II Section, Annex III, Section I Bird Species
Manx Shearwater	*Puffinus puffinus*	Birds of Ireland	Amber List
Mediterranean Gull	*Larus melanocephalus*	Bird Atlas 2007 - 2011	Annex I Bird Species, Amber List
Merlin	*Falco columbarius*	Bird Atlas 2007 - 2011	Annex I Bird Species, Amber Listed

Common Name	Scientific Name	Dataset	Designation
Mew Gull	*Larus canus*	Bird Atlas 2007 - 2011	Amber List
Mute Swan	*Cygnus olor*	Bird Atlas 2007 - 2011	Amber List
Northern Gannet	*Morus bassanus*	Birds of Ireland	Amber List
Northern Lapwing	*Vanellus vanellus*	Bird Atlas 2007 - 2011	Annex II Section II Bird Species, Red List
Northern Pintail	*Anas acuta*	Bird Atlas 2007 - 2011	Annex II, Section I Bird Species, Annex III, Section II Bird Species, Red List
Northern Shoveler	*Anas clypeata*	Bird Atlas 2007 - 2011	Annex II, Section I Bird Species, Annex III, Section III Bird Species, Red List
Northern Wheatear	*Oenanthe oenanthe*	Bird Atlas 2007 - 2011	Amber List
Peregrine Falcon	*Falco peregrinus*	Bird Atlas 2007 - 2011	Annex I Bird Species
Pink-footed Goose	*Anser brachyrhynchus*	Birds of Ireland	Annex II, Section II Bird Species
Razorbill	*Alca torda*	Ireland's BioBlitz	Amber List
Red Kite	*Milvus milvus*	Birds of Ireland	Amber List
Red Knot	*Calidris canutus*	Bird Atlas 2007 - 2011	Red List
Red-breasted Merganser	*Mergus serrator*	Bird Atlas 2007 - 2011	Annex II, Section II Bird Species
Ringed Plover	*Charadrius hiaticula*	Birds of Ireland	Amber List
Rock Pigeon	*Columba livia*	Bird Atlas 2007 - 2011	Annex II, Section I Bird Species
Roseate Tern	*Sterna dougallii*	The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991	Annex I Bird Species, Amber List
Rose-ringed Parakeet	*Psittacula krameri*	National Invasive	High Impact Invasive Species

Common Name	Scientific Name	Dataset	Designation
		Species Database	
Ruddy Duck	*Oxyura jamaicensis*	Rare birds of Ireland	High Impact Invasive Species, EU Regulation No. 1143/2014, Regulation S.I. 477 (Ireland)
Ruff	*Philomachus pugnax*	Bird Atlas 2007 - 2011	Annex I Bird Species, Amber List
Sand Martin	*Riparia riparia*	Birds of Ireland	Amber List
Sandwich Tern	*Sterna sandvicensis*	Birds of Ireland	Annex I Bird Species, Amber List
Short-eared Owl	*Asio flammeus*	Bird Atlas 2007 - 2011	Annex I Bird Species, Amber List
Sky Lark	*Alauda arvensis*	Birds of Ireland	Amber List
Slavonian Grebe	*Podiceps auritus*	Irish Wetland Birds Survey (I-WeBS) 1994-2001.	Amber List
Spotted Flycatcher	*Muscicapa striata*	Bird Atlas 2007 - 2011	Amber List
Stock Pigeon	*Columba oenas*	Bird Atlas 2007 - 2011	Amber List
Tufted Duck	*Aythya fuligula*	Bird Atlas 2007 - 2011	Annex II, Section I Bird Species, Annex III, Section II Bird Species, Amber List
Velvet Scoter	*Melanitta fusca*	Irish Wetland Birds Survey (I-WeBS) 1994-2001.	Annex II, Section II Bird Species
Water Rail	*Rallus aquaticus*	Bird Atlas 2007 - 2011	Amber List
Whooper Swan	*Cygnus cygnus*	Birds of Ireland	Annex I Bird Species, Amber List
Yellowhammer	*Emberiza citrinella*	Birds of Ireland	Red List

5.2 Badgers

The NBDC has no records of badger activity directly at the site; however, the Badger Setts of Ireland database, accessible via the NBDC live maps, indicates that badgers have been recorded as close as 2.3 km northeast of the proposed development site.

The site survey found no evidence of badger activity, such as setts or latrines. The proposed development site consists largely of grasslands and woodlands habitats, which are suitable habitats for badgers with no evidence of the badger activity during the survey.

There is the potential for badgers and other fauna are likely to move along the hedgerows and treeline habitats in the site and surrounding area. The grassland habitat, may provide limited foraging opportunities for badgers. A large portion of the vegetation on the site will be removed, however the landscaping plan focuses on retaining as much of the current vegetation as feasible.

5.3 Bats

Bat Assessment

Multiple bat surveys were undertaken by Wildlife Surveys Ireland Ltd on June 10th, 11th and 14th 2024 and from the 27th of September to the 6th of October 2023.

The bat surveys determined that there was evidence of 4 bat species on site. These are as follows:

- Common pipistrelle – Pipistrellus pipistrellus
- Soprano pipistrelle – Pipistrellus pygmaeus
- Leisler's bat – Nyctalus leisleri
- Brown long eared bat – Plecotus auritus

There were no bats, no bat droppings, no staining or any indications of bats emerging from or entering any building within the site. There is no evidence of any bat roosts within the site. Most trees within the site have no bat roost potential. This is due to the absence of cavities, crevices, loose bark and any other obvious roost features.

There is the potential for bat roost loss albeit that no building or tree was noted to be a bat roost during the survey period.

Desk Based Study

According to the NPWS National Lesser Horseshoe Bat Roost Database (September 2024), the

Lesser Horseshoe Bat is predominantly found in the west of Ireland. The nearest recorded roost for this species is approximately 175 km west of the development site, near Tuam.

Table 5.3.1 NBDC records for bats within the 10km square (Tetrads O24) of the proposed development site

NBDC RECORDS FOR BATS	
SPECIES	**TETRAD (10KM)**
Brown Long-eared Bat (Plecotus auritus)	O24
Leisler's Bat/ Lesser Noctule (Nyctalus leisleri)	O24
Soprano Pipistrelle (Pipistrellus pygmaeus)	O24
Pipistrelle (Pipistrellus pipistrellus sensu lato)	O24
Common pipistrelle (Pipistellus pipistrellus)	O24

Table 5.3.2 NBDC records for bats within the 2km square (Tetrads O24B) of the proposed development site.

NBDC RECORD FOR BATS	
SPECIES	**TETRAD (2KM)**
Brown Long-eared Bat (Plecotus auritus)	O24B
Common Pipistrelle (Pipistrellus pipistrellus sensu stricto)	O24B
Lesser Noctule (Nyctalus leisleri)	O24B
Pipistrelle (Pipistrellus pipistrellus sensu lato)	O24B
Soprano Pipistrelle (Pipistrellus pygmaeus)	O24B

The NBDC mapping portal has the Bat Conservation Ireland's habitat suitability index on its website. This index classifies the landscape of the site as having a score of 24.22 for the proposed development site and surrounding areas, this is a medium habitat suitability for bats. The index ranges from 0 to 100 with 0 being least favourable and 100 being most favourable for bats. The spatial units of the OSI National Grid are used to construct the maps. Table 5.4 below shows the index for each individual species (Lundy et al., 2011).

Table 5.4 Bat habitat suitability index for the proposed development site.

BAT HABITAT SUITABILITY INDEX	
SPECIES	**INDEX**
All Bats	24.22
Soprano Pipistrelle (Pipistrellus pygmaeus)	40
Brown Long-eared Bat (Plecotus auritus)	25
Common Pipistrelle (Pipistrellus pipistrellus)	38
Lesser Horseshoe Bat Rhinolophus hipposideros	0
Lesser Noctule (Nyctalus leisleri)	40
Whiskered bat (Myotis mystacinus)	28
Daubenton's bat (Myotis daubentoniid)	20
Nathusius's pipistrelle (Pipistrellus nathusii)	4

5.4 Invertebrates

The site hosted various bumblebee species, including the White-tailed Bumblebee (*Bombus lucorum*), Common Carder Bee (*Bombus pascuorum*), and Red-tailed Bee (*Bombus lapidarius*), as well as wasps (Vespidae) and flies (Diptera). Other invertebrates observed included spiders (Arachnids). The hedgerows and grasslands provide suitable habitats for these invertebrates, while the artificial pond could support common freshwater species. No protected invertebrates associated with watercourses or wetlands were identified within the site. There are no records from the NBDC of protected Whorl snail species (*Vertigo spp.*) within or near the site boundary, and the proposed development does not offer suitable habitats for these species. A review of NBDC records for the past thirty years within the 2 km square (tetrad O24B) where the site is located shows no protected or threatened invertebrates.

5.5 Amphibians and reptiles

The majority of the site, comprising spoil provides limited suitable habitat for frogs or newts. The artificial pond in the south east portion of the site which has been used as a reservoir has the potential to provide habitat for amphibians; however, as the pond is lined with impermeable sheeting, it is not the most valuable to these species.

According to the NBDC website for tetrad O24, species such as the Common Frog, Smooth Newt, Common Lizard (*Zootoca vivipara*), and Leathery Turtle (*Dermochelys coriacea*) have been recorded, though there are no records specifically within tetrad O24B (2 km radius). Evidence of these species was not observed during the site surveys; however, there remains potential that the species inhabit the site and the surrounding areas.

5.6 Otters

There were no sightings of otters (Lutra lutra), or evidence of otters (including holts, slides, spraints and tracks) recorded during the site walkover. Otters may be within the wider area given the distance to the nearest mapped watercourse.

5.7 Aquatic Habitats Overview

The are no water courses identified by the Environmental Protection Agency (EPA) flowing through the site or along the site boundary. The proposed development site lies within the catchment of the River Sluice, a relatively short water course that discharges to Baldoyle Bay at Portmarnock. The river flows c.200m to the north at its nearest point while the intervening land is occupied by roads and suburban residential development.

In the south east portion of the site, there is an artificial pond which has been used as a reservoir and is lined with impermeable sheeting. It covers an area of approximately 0.07 hectares.

5.8 Other species

Fauna typical of that found throughout the rest of Ireland which would be expected to be found in the area includes; Mink (*Mustela vison*) Red Fox (*Vulpes vulpes*), Pine Marten (*Martes martes*), Stoat (*Mustela erminea hibernica*), Rabbit (*Oryctalagus cuniculus*), Irish Hare (*Lepus timidus hibernicus*), Mountain Hare (*Lepus timidus*), Hedgehog (*Erinus europaeus*), Red Squirrel (*Sciurus vulgaris*), Grey Squirrel (*Sciurus carolinensis*), Wood Mouse (*Apodemus sylvaticus*), Pygmy Shrew (*Sorex minutus*) and Brown Rat (*Rattus norvegicus*).

During the site survey direct evidence of Red Fox (*Vulpes vulpes*), Rabbit (*Oryctalagus cuniculus*), and Brown Rat (*Rattus norvegicus*) was observed through scat dropping found on the site during the survey. A direct sighting of Grey Squirrel (*Sciurus carolinensis*) was noted during the site surveys.

Protected fauna species of note recorded within the NBDC 10km square (Tetrad – O24) include the protected species for the most recent 30 years:

- West European Hedgehog (*Erinaceus europaeus*),
- Pine Marten (*Martes martes*),
- Mountain Hare (*Lepus timidus*), and;
- Eurasian Pygmy Shrew (*Sorex minutus*)

High impact invasive species listed in the Third Schedule of the European Communities Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011) include:

- Rose-ringed Parakeet (*Psittacula krameri*),
- *Arthurdendyus triangulates,*
- Cherry Laurel (*Prunus laurocerasus*),
- Portuguese Oyster (*Crassostrea gigas),*
- Canada Goose (*Branta canadensis*),
- Ruddy Duck (*Oxyura jamaicensis*),
- Eastern Grey Squirrel (*Sciurus carolinensis*),
- Wireweed (*Sargassum muticum*),

- Canadian Waterweed (*Elodea canadensis*),
- Common Cord-grass (*Spartina anglica*),
- Giant Hogweed (*Heracleum mantegazzianum*),
- Indian Balsam (*Impatiens glandulifera*),
- Japanese Knotweed (*Fallopia japonica*),
- *Rhododendron ponticum,*
- Harlequin Ladybird (*Harmonia axyridis*),
- Brown Rat (*Rattus norvegicus*), and;
- *Didemnum vexillum.*

Mitigation measures have been proposed to ensure high impact invasive species are not introduced or spread to the site.

5.9 Ecological Value

The importance of an ecological feature should be considered within a defined geographical context. The following frame of reference has been used in this case following NRA 2009:

- International / European
- National (Ireland)
- County (County Dublin)
- Local (higher value)
- Local (lower value)

If receptors are considered to be of less value than Local lower value, they are considered to be of negligible importance. CIEEM guidance indicates that features of less than Local importance are generally considered unlikely to trigger a mitigation or policy response in EcIA terms.

Table 5.5 below lists the ecological value of the groups of species that have the potential to occur on the area that is being used for the proposed development. It also determines if a specific species group is likely to be already living on or using the site.

Table 5.5 Ecological Value of Species at the Proposed Development Site

Species	Rating	Rationale for Rating
Bats	Local importance, higher value	Yes. The treelines, hedgerows, and buildings within the proposed development have the potential of being utilised by bats for foraging, commuting, and roosting.
Breeding Birds	Local importance, higher value	Yes. The Wildlife Act protects all birds, their nests, eggs and young.
Aquatic Fauna	Local importance, lower value	No. There are no suitable aquatic habitats on site aside from the artificial pond which is lined and not that ecologically valuable.
Other	Local importance, low to high value	Yes. The surveys determined fauna sightings and evidence of protected mammals. No evidence of badger was found within the site boundary.

6.0 PROTECTED SITES

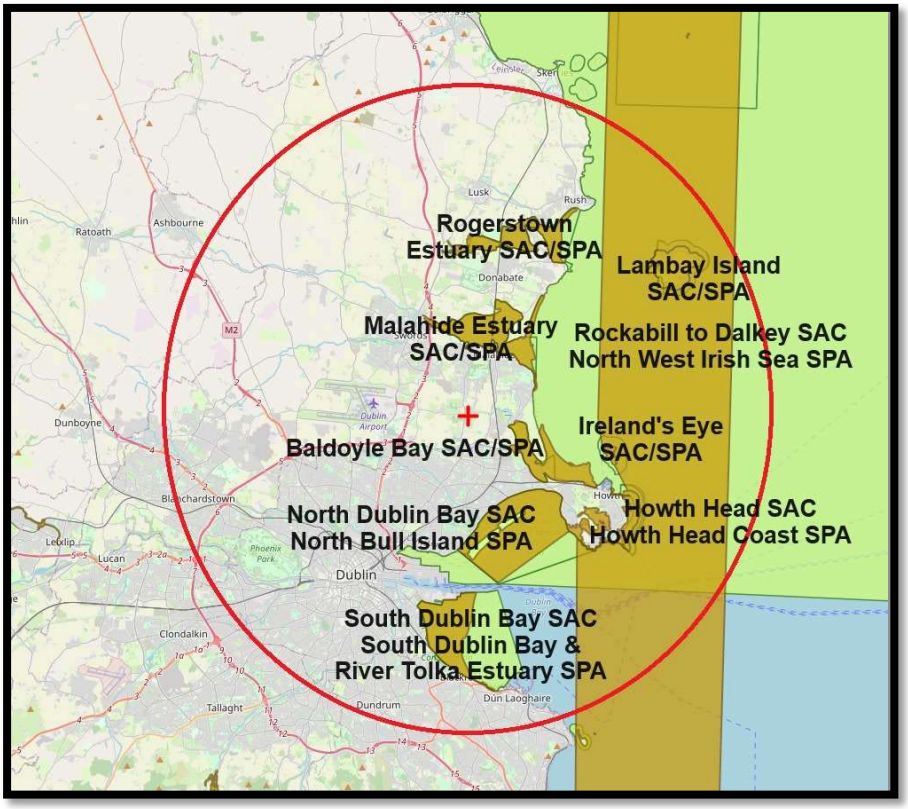
6.1 Natura 2000 sites

The development site is not located within or directly adjacent to any Natura 2000 site (SAC or SPA). For projects of this nature an initial 15km radius is normally examined to assess potential impacts. There are multiple factors that help determine the zone of influence upon these sites, these include:

- the potential pathways between the proposed development and the European sites;
- the nature and location of the Natura 2000 sites; and,
- the potential impacts that could arise from the proposed development.

There are a number of Natura 2000 sites within this 15km radius as shown in Figure 6.1. An AA Screening Assessment was carried out together with an assessment of ecology and biodiversity on the site.

Figure 6.1 Site location relative to Natura 2000 sites



There is no direct surface, hydrological, or terrestrial pathway from the development site to any Natura 2000 site. The Sluice River provides an indirect surface hydrological connection to

Natura 2000 sites in Baldoyle Bay however this water course is c.200m from the proposed development site boundary. There may be an indirect pathway to the river via surface run-off during both the construction and operational phases. There is also an indirect pathway through the foul sewer to Dublin Bay via the Ringsend WWTP which would continue to treat water from north Dublin until the proposed new Waste Water Treatment Plant at Clonshagh is permitted and developed.

There are indirect hydrological links to the Baldoyle Bay SAC (site code: 0199) and SPA (site code: 4016), South Dublin Bay and River Tolka Estuary SPA (site code: 4024), the South Dublin Bay SAC (site code: 0210), the North Bull Island SPA (site code: 4006), the North Dublin Bay SAC (site code: 0206) and the North West Irish Sea SPA (site code: 4236). In order for an effect to occur there must be a pathway between the source (the proposed development site) and the receptor (the SAC or SPA). As shown in the previous paragraph, there is an indirect pathway to the Natura 2000 sites through the Ringsend WWTP and surface run-off to the nearby water course.

The AA Screening assessment determined that no significant effects will arise from the proposed development to Natura 2000 sites.

6.2 Natural Heritage Areas

There is no Natural Heritage Area within the potential zone of influence. A reduced zone of influence of 5km was used for the proposed Natural Heritage Areas (pNHA) surrounding the site due to the relatively limited potential impact the proposed development could have on these sites. The reduced 5km range was used due to the size and nature of the development. It is unlikely that significant effects could occur on a site that is greater than 5km from the proposed development site. Six pNHAs occur within the zone of influence of the proposed development. They are shown in Figure 6.2 and listed in Table 6.6.

Figure 6.2 Site location relative to natural heritage areas

Table 6.1 Site location relative to natural heritage areas

Site Name	Designation	Site Code	Distance to Proposed Development
Santry Demesne	pNHA	000178	4.7km SW
Malahide Estuary	pNHA	000205	3.3km N
Feltrim Hill	pNHA	001208	1.2 km NW
North Dublin Bay	pNHA	000206	4.5km S
Baldoyle Bay	pNHA	000199	1.8 km E
Sluice River Marsh	pNHA	001763	1.2 km E

The AA screening report concluded that no significant effects on European Sites are likely to occur as a result of the proposed development. Baldoyle Bay, North Dublin Bay, and Malahide Estuary overlap with these European Sites and have been screened out of this assessment.

There is no direct hydrological connection to any other of the above pNHA. They have therefore been screened out of this assessment.

7.0 ECOLOGICAL IMPACT ASSESSMENT

7.1 Determining importance

The importance of an ecological feature should be considered within a defined geographical context. The following frame of reference has been used in this case following NRA 2009:

- International / European
- National (Ireland)
- County (County Dublin)
- Local (higher value)
- Local (lower value)

If receptors are considered to be of less value than Local lower value, they are considered to be of negligible importance. CIEEM guidance indicates that features of less than Local importance are generally considered unlikely to trigger a mitigation or policy response in EcIA terms.

7.2 Characterising and quantifying impacts and assessing the significance of effects

The terms impact and effect are defined by CIEEM (2018) as:

- Impact – Actions resulting in changes to an ecological feature. For example, the construction activities of a development removing a hedgerow (CIEEM, 2018).
- Effect – Outcome to an ecological feature from an impact. For example, the effects on a dormouse population from loss of a hedgerow (CIEEM, 2018).

CIEEM (2018) guidelines state that when describing ecological impacts and effects, reference should be made to the following characteristics as required: positive or negative; extent; magnitude; duration; frequency and timing and reversibility.

After characterizing the impacts, an assessment is conducted to determine the ecological significance of their effects. The guidelines advocate for a transparent approach, where the significance of a beneficial or adverse effect is evaluated in ecological terms, based on the integrity of the defined site or ecosystem(s) and/or the conservation status of habitats or species within a specific geographical area, corresponding to the level at which it has been

valued. The determination of whether an effect is significant is made independently of the ecological feature's value; the value of any feature that will be significantly affected is then used to determine the implications in terms of legislation and/or policy (CIEEM, 2018).

Significance refers to the importance attached to effects when making decisions. For this assessment, a 'significant effect' is one that either supports or undermines biodiversity conservation objectives for 'important ecological features.' A significant effect is simply an impact that is important enough to require assessment and reporting, ensuring the decision-maker is fully informed of the environmental consequences of approving a project. The EcIA guidelines (CIEEM, 2018) clarify that "A significant effect does not necessarily equate to an effect so severe that consent for the project should be refused planning permission. For example, many projects with significant negative ecological effects can be lawfully permitted following EIA procedures as long as the mitigation hierarchy has been applied effectively as part of the decision-making process." The assessment of significance relies on professional judgment.

The Environmental Protection Agency's (EPA's) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (2022) take account of Directive 2014/52/EU on the assessment of the effects of certain public and private projects on the environment and have been considered in this assessment. Impacts are described in the Guidelines under various headings which are summarised as follows:

- Probability – likely, possible, unlikely;
- Quality – positive, neutral, negative;
- Significance – e.g. Imperceptible, Moderate, Profound; and
- Magnitude – duration, frequency, extent, context.

A description of the significance of effects is presented in Table 7.1, which shows the approach taken towards quantifying the significance and magnitude of potential biodiversity impacts in this assessment.

Table 7.1 Describing the Significance and Magnitude of Environmental Effects (EPA 2022)

Aspect	Description
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 trends.
Significant	An effect which, by its character, magnitude, duration or intensity, alters most of a sensitive aspect of the environment.
Very Significant	An effect which, by its character, magnitude, duration or intensity, significantly alters most of a sensitive aspect of the environment.
Profound	An effect which obliterates sensitive characteristics
Magnitude of Effects	
Extent	This is described by the size of the area, the number of sites and the proportion of the population affected by the effect.
Duration	**Momentary** effects last seconds to minutes.
	Brief effects last less than a day.
	Temporary effects last less than one year.
	Short-term effects last from one to seven years.
	Medium-term effects last from seven to 15 years.
	Long-term effects last from 15 to 60 years.
	Permanent effects last over 60 years.
	Reversible effects are effects that can be undone for example through remediation or restoration
Frequency	How often the effect will occur
Context	The contextual relationship between the effect and the existing baseline; it is important to establish if the effect is unique or commonly or increasingly experienced.

7.3 Assessment Overview

The proposed development can impact terrestrial and aquatic biodiversity through habitat destruction, noise and dust disturbance, introduction of invasive species, and light pollution.

All impacts are described without mitigation measures. An impact is considered to be significant ecologically if it is likely to affect the conservation status or integrity of a sensitive ecological receptor. A sensitive ecological receptor refers to an ecological entity that is particularly vulnerable to the adverse effects of exposure to stressors. This term can refer to plants, animals, habitats, or ecosystems.

Construction Phase Impacts

The construction phase of the proposed development is not expected to cause significant ecological loss. The loss of higher value habitats of local importance such as WD1 (Mixed) Broadleaved Woodland, WS2 Immature woodland, WL1 Hedgerows and WL2 Treelines, through the removal of vegetation from the site and construction activities, is considered to be a permanent, moderate negative impact on the local level. The loss of the habitats considered to be of lower value local importance such as GS2 Dry Meadows and Grassy Verges and WS1 Scrub, through the removal of vegetation from the site and construction activities, is considered to be a permanent, slightly negative impact at the local level.

Dust emissions during construction, particularly from earth-moving activities, could affect plant processes such as photosynthesis, respiration, and transpiration by blocking leaf stomata and could also impact fauna through impacting their ability to breathe. However, the temporary nature of construction work means these impacts are unlikely to be significant, provided environmental protection measures, such as mitigation measures explained in the following sections, are implemented.

The spread of high impact invasive species as a result of construction activities has the potential to result in significant negative impact over a long term time scale at a local level. These impacts are potentially reversable through mitigation measures.

Operational Phase

In the operational phase, stormwater from roofs and hard surfaces will be directed to swales, rain gardens, and permeable paving and macadam before going through the drainage network before being discharged from the site. The drainage system will include an oil/silt interceptor,

and foul water will connect to existing sewer line that leads to the Ringsend WWTP which would continue to treat waste water from north Dublin until the proposed new Waste Water Treatment Plant at Clonshagh is permitted and developed. Therefore, significant water quality impacts during the operational phase are not expected.

A lighting plan will be designed to minimize impacts on nocturnal species and high-value ecological habitats like hedgerows and trees. Lighting impacts nocturnal species by disrupting the natural day and night cycles of these species as well as fragmenting the habitats in which these species live. No significant impact on light sensitive species is anticipated due to lighting during the operational phase with proper implantation of the lighting plan.

7.4 Terrestrial biodiversity protection protocol

Potential Impacts

There is the potential that the proposed development could have an impact on the wider ecological environment through the removal and disruption to the vegetation on the site during the construction phase due to the construction activities and disturbance of the environment.

The operational phase of the development is not predicted to add any additional impacts as there will be no significant changes to the environment during the operational phase as the surrounding area is largely residential already.

Monitoring and Mitigation Measures

The development will follow the best standard construction practice with regard to the following guidance and methodology:

- Construction activities will be limited to the development footprint as much as possible.
- Vegetation removal will be scheduled outside the nesting season (March 1st to August 31st) whenever feasible to avoid disturbing nesting birds and bats. If tree removal is required during this period, a qualified ecologist will inspect the area for breeding birds before clearance. Should active nests be found, the ecologist will determine if a licence from the National Parks and Wildlife Service (NPWS) is needed or if a buffer zone can be established around the nest, with removal postponed until the chicks have fledged.
- If work occurs near trees that are to be retained, a buffer zone will be established.
- Tree protection measures will follow BS5837:2012 standards, including creating root protection zones, using protective fencing or hoarding, keeping exposed roots or soil containing tree roots moist during dry conditions, and utilizing ground protection mats or cellular confinement systems capable of supporting tree weight. A qualified arborist will oversee these trees protection measures onsite.
- The construction contractor will follow the NRA's "Guidelines for the Protection and Preservation of Trees, Hedgerows and Scrub Prior to, During and Post Construction of National Road Schemes" (2006), with particular attention to swales, sewage systems, drainage networks, and determining root protection areas for trees along the boundary.
- As many trees and vegetation within the site boundary will be preserved as deemed feasible.

Residual Impacts

With the implementation of the proposed mitigation measures , it is not anticipated that there would be any significant residual impacts to the terrestrial ecology as a result of construction of the proposed development.

7.5 Impacts on protected species

7.5.1 Badgers & Terrestrial Mammals

No badger setts were recorded during the ecological surveys within the site boundaries of the proposed development. Other small mammals such as Hedgehog and Pygmy Shrew are likely to occur in grassland, hedges, scrub, and woodland habitat on the site. Site clearance will result in a short term not significant impact to the local population.

Potential Impacts

Site clearance has the potential to result in the death, injury, or displacement of these species. Impacts would be the greatest during the breeding season when the young are in their nests during April to October. There is the potential that badgers and other mammals could enter into the active construction site while foraging for food.

Monitoring and Mitigation Measures

- Control measures will be implemented in accordance with the *Guidelines for the Treatment of Badgers Prior to the Construction of National Road Schemes* (NRA 2006).
- The construction site will be made safe for mammals by covering open holes/excavations or providing ramps to allow animals to escape. If a badger sett is discovered during site clearance, guidelines for both active and inactive setts will be followed.
- A metal fence or hoarding may be installed along the site boundary to restrict access for larger mammals like badgers.
- Construction activities will, where possible, be limited to normal working hours to minimize noise disturbances to nocturnal species.
- If a badger is encountered during the construction phase, the NPWS (National Parks

and Wildlife Service) will be notified before resuming work.

- Bat friendly lightly will be implemented to reduce artificial lighting impact on bats and other species that are sensitive to light pollution.

Residual Impacts

The proposed development is not envisioned to significantly reduce foraging habitats for badgers and other mammals in the vicinity of the site. As there was no sett or evidence of badger activity noted during the site surveys, it is unlikely that the operation phase of the proposed development would significantly disturb badgers and other mammals in the surrounding area. There is a long term increase of lighting in the area due to the development, the lighting measures will be implemented to reduce impacts of nocturnal species.

7.5.2 Bats

Potential Impacts

The construction of the development will require the removal of a substantial amount of vegetation cover and the removal of the artificial pond on site. A few of the trees on site were determined to be potential bat roosts. The loss of the pond and vegetation on the site suitable for bats to forage and commute along is potentially a permanent, moderate negative impact on bat species locally.

Artificial lighting during both the construction and operational phases could potentially impact bat species by disturbing roosting sites, commuting paths, and foraging grounds. Illumination may cause bats to avoid certain areas, particularly impacting commuting routes and foraging behavior in species like *Myotis*. The presence of buildings and lighting in the proposed development is likely to result in an impact to bat species. In the absence of mitigation this is potentially a long term, significantly negative impact on the local level.

Monitoring and Mitigation Measures

Vegetation Measures

- All buildings will be checked by a bat specialist for the presence of bats prior to demolition. Should a bat be discovered, the structure concerned is a bat roost and the NPWS will be advised of the presence of the bat immediately. Additionally, a

derogation will be acquired from NPWS following the provision of a bat conservation plan to ensure that any bat is afforded full protection from injury, that alternative roosts are provided to compensate for roost loss and that bats are removed under licence by a suitably qualified bat specialist to facilitate work on the roost.

- If mature or ivy clad trees are to be felled, they must be checked by a bat specialist with a hoist for bat presence, immediately prior to felling. Felling must not take place in the bird nesting season.
- The existing reservoir will be replaced by a waterbody (pond or other water feature with standing water) with flanking vegetation.
- 12 x 2F Schwegler bat boxes will be installed on site. These will be placed on trees, buildings, or poles, at least 3 metres high, with a clear drop below them as bats must drop to fly. They will be placed in a dark area.
- If bats or nesting birds are discovered at any stage of construction, all work will cease and a bat specialist and the Conservation Ranger will be contacted.
- Planting with native species will enhance the area for bats and birds. Plant species from the All-Ireland Pollinator Plan will be included. Consideration will be given to providing a range of vegetation heights, by the use of ivy and climbers on walls, and the retention and planting of trees and hedgerows.

Artificial Lighting Measures

- A dark sky area will be designated. This will provide suitable commuting opportunities for all bats through the site into neighbouring lands.
- Other lighting must be in accordance with:
    - Bats and Lighting – Guidance Notes for Planners, Engineers, Architects, and Developers (Bat Conservation Ireland, 2010).
    - Bats and Lighting in the UK – Bats and the Built Environment Series (Institute of Lighting Professionals, September 2018).
    - Guidance Notes for the Reduction of Obtrusive Light GN01 (Institute of Lighting Professionals, 2011).

Residual Impacts

There will be a loss of feeding and roost sites following the construction for a number of years.

With time the roosting opportunities will be taken up by bats. There will be a long-term loss in vegetation and a long-term increase in lighting.

There is the potential for a long-term slightly negative impact on the higher value local level upon bats due to the construction of housing on site.

The installation of bat friendly lighting, replacement of the pond and lost vegetation, and the construction of bat boxes will allow the habitat to be continued to be used by bats.

7.5.3 Birds and other fauna

Significant impacts on birds and other fauna during the construction or operational phases of the development are not expected as, as much vegetation is feasible, especially in regards to native hedgerows and trees, will be preserved. There will be a substantial loss of vegetation on the site as a result of the construction of the proposed development. This impact is deemed to be a moderate negative impact on the local level.

No protected species were observed on-site, so no direct effects are anticipated. The proposed development does not include any significant aquatic habitats, nor does the vegetation support other protected species. However, an existing artificial pond is present in the eastern area of the site. While the pond contains some aquatic vegetation, it is lined and is unlikely to support protected species. Mitigation measures for this will be implemented. In the operational phase, water quality in nearby watercourses is expected to remain unaffected due to the proposed drainage system, including a detention basin and oil interceptor. If the drainage system was not implemented, there is the potential for the nearby water sources to become polluted which would adversely affect the birds and other fauna in the areas in and around the site.

Monitoring and Mitigation Measures

- Stormwater from the proposed development will consist of clean rainwater runoff from the roofs and hard surfaces, which will be directed to the drainage network and detention basin within the site.
- Construction activities will be limited to the development footprint as much as possible.
- Vegetation removal will be scheduled outside the nesting season (March 1st to August 31st) to avoid disturbing nesting birds and bats.
- If work occurs near trees that are to be retained, a buffer zone will be established.
- Tree protection measures will follow BS5837:2012 standards, including creating root protection zones, using protective fencing or hoarding, keeping exposed roots or soil

containing tree roots moist during dry conditions, and utilizing ground protection mats or cellular confinement systems capable of supporting tree weight. A qualified arborist will oversee these trees protection measures onsite.

- The construction contractor will follow the NRA's "Guidelines for the Protection and Preservation of Trees, Hedgerows and Scrub Prior to, During and Post Construction of National Road Schemes" (2006), with particular attention to swales, sewage systems, drainage networks, and determining root protection areas for trees along the boundary.
- As many trees and vegetation within the site boundary will be preserved as deemed feasible.

Residual Impacts

With all mitigation measures in place, no significant residual impacts on any protected fauna are expected from the proposed development. No evidence of protected species was found on the site.

7.5.4 Invasive species

Potential Impacts

Under Regulation 49(2) of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), any person who plants, disperses, allows, or causes to disperse, spreads, or otherwise causes to grow in any specified place any plant included in Part 1 of the Third Schedule shall be guilty of an offence, unless they have a license granted under paragraph (7). Materials containing invasive species, such as Japanese knotweed, are classified as "controlled waste," and there are legal restrictions on their handling and disposal. Additionally, under Regulation 49(7) of the European Communities (Birds and Natural Habitats) Regulations 2011, it is a legal requirement to obtain a license to move "vector materials" listed in Part 3 of the Third Schedule.

The National Biodiversity Data Centre has records of high impact invasive species within a 2km square (Tetrad-O24B) of the proposed development. In this square, invasive Cherry Laurel (*Prunus laurocerasus*), Giant Hogweed (*Heracleum mantegazzianum*), and Japanese Knotweed (*Fallopia japonica*) have been recorded.

The risk of introducing invasive species onto the site during the construction phase of the

project is considered low.

The spread of high impact invasive species as a result of construction activities has the potential to result in significant negative impact over a long term time scale at a local level. Invasive species can be introduced during construction through various means, primarily through construction vehicles. These vehicles can accumulate soil, plant material, and seeds of invasive species from one site and transport them to another site without proper cleaning. There is an unlikely chance that an invasive species could spread to the site during the operational phase although it is far less likely than being spread during the construction phase. These impacts are potentially reversable through mitigation measures.

Monitoring and Mitigation Measures

The following methods will be implemented for the prevention of the introduction of invasive flora species during the construction phase:

- Any additional topsoil will be thoroughly checked and screened before being imported to the site.
- Regular site inspections will be conducted to ensure no invasive species have established.
- The contractor will inspect and thoroughly clean all equipment and machinery for invasive species before entering and leaving the proposed development site.
- Construction personnel will receive training on identifying and managing invasive flora species, focusing on key species of concern.
- If an invasive species listed under the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 is detected onsite, work in the immediate area will be halted until the invasive plant is properly treated and disposed of at a licensed facility, following Regulation 49 of the 2011 Regulations.

Residual Impacts

There no anticipated residual impacts if invasive species are not introduced to the site. If an invasive species is found on site during the development lifecycle, an Invasive Species Management Plan would be implemented.

7.5.5 Aquatic Ecology

Construction activities may impact flora and fauna through potential water quality deterioration. Risks to water quality could arise from the release of suspended solids during soil disturbance, uncured concrete, or hydrocarbons such as fuels and oils. Although the risk is minimal, there remains a chance of indirect impact due to the release of sediments, hydrocarbons, or cement, which could negatively affect downstream protected species and their prey. Standard water quality will be applied to prevent any adverse effects.

There is also an indirect pathway through the foul sewer to Dublin Bay via the Ringsend WWTP which would continue to treat water from north Dublin until the proposed new Waste Water Treatment Plant at Clonshagh is permitted and developed. While the issues at Ringsend wastewater treatment plant are being dealt with in the medium-term evidence suggests that some nutrient enrichment is benefiting wintering birds for which SPAs have been designated in Dublin Bay (Nairn & O'Hallaran eds, 2012). Additional loading to this plant arising from the operation of this project are not significant as there is no evidence that pollution through nutrient input is affecting the conservation objectives of any of the Natura 2000 sites in Dublin Bay.

The integration of SUDS into the project design will ensure that no changes will occur to the quantity or quality of surface water run-off. These are standard measures which are included in all development projects.

Monitoring and Mitigation Measures

The following mitigation measures will be implemented to ensure that there is no significant impact on the aquatic ecology due to a deterioration in water quality:

- The construction contractor will follow standard best practices and comply with the CIRIA guidelines, including "*Control of Water Pollution from Construction Sites: Guidance for Consultants and Contractors*" (2001) and "*Control of Water Pollution from Construction Sites – Guide to Good Practice*" (2002).
- The contractor will also adhere to Inland Fisheries Ireland's 2016 "*Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters*."
- Loose material stockpiles will be kept at least 20m away from drains and watercourses.

- Fuel, oil, and chemicals will be stored in a bunded area, located at least 50m from drains, excavations, and any areas where they could cause pollution.
- Excavation and earth-moving activities will be scheduled outside periods of heavy rainfall to reduce the risk of suspended solids entering surface water runoff.
- The site access road will be regularly inspected to prevent silt-laden runoff from leaving the site and potentially entering nearby drainage systems or road networks.
- Spoil generated onsite will be stored temporarily in a designated area, located away from watercourses or drainage ditches.
- Spoil piles will be covered or graded to prevent ponding and water saturation when possible.
- Manhole covers and stormwater gullies will be protected using silt blankets, and additional measures such as sandbags may be used on steep gradients if necessary.
- If water is encountered during excavation, it will be pumped to a silt control feature like a lagoon or infiltration area for settlement before discharge.
- The lagoon/infiltration area will have sufficient capacity and filtration measures before discharge; direct discharge to a drainage ditch or other water source will be avoided.
- The lagoon/infiltration area will be positioned away from steep slopes.
- Pumping operations will be continuously supervised.
- All machinery and equipment will be well-maintained, inspected regularly, and kept in good working order.
- Construction personnel will receive training in spill control procedures.
- If any construction equipment shows signs of hydrocarbon leakage, it will be removed from service until repairs are completed.
- A designated storage area for hydrocarbons will be established and inspected regularly.
- Spill kits, including booms and absorbent pads, will be readily available on-site and adequately stocked.
- Fuel, oil, and chemical storage will follow EPA guidelines, with materials kept in bunded areas with sufficient capacity (110% of the largest container volume or 25% of the total volume of containers).
- Storage areas will be clearly marked and labeled.
- If a protected species such as Otter (Lutra lutra) or Badger (Meles meles) is discovered during construction, work will cease, and an investigation will be conducted. NPWS

will be contacted before resuming work.

- If weed control is necessary, herbicides will be applied only by qualified contractors/operators, following product labels, local regulations, and health and safety standards. All herbicide use will comply with pesticide regulations under *S.I. No. 155/2012 - European Communities (Sustainable Use of Pesticides) Regulations 2012* or current applicable regulations.
- Integration of SuDs.

Residual Impacts

Assuming all mitigation measures are put in place, there would be no significant residual impacts to the aquatic environment within the nearby watercourses or the Natura 2000 sites that are directly connected with a hydrological link.

8.0 CUMULATIVE IMPACTS

The cumulative impacts of the proposed development in conjunction with current and future developments in the vicinity of the subject site are considered in this section. The proposed development site is subject to the Kinsealy Local Area Plan of May 2019. When assessed cumulatively, existing and proposed projects on the same ecological receptors have the potential to cause impacts of a higher level of significance. The representative sample of planning permissions within the immediate vicinity of the site that are relevant developments are numbered in Figure 8.1 and explained in Table 8.1 below.

Figure 8.1 Planning History in the vicinity of the site (Relevant Developments Numbered)

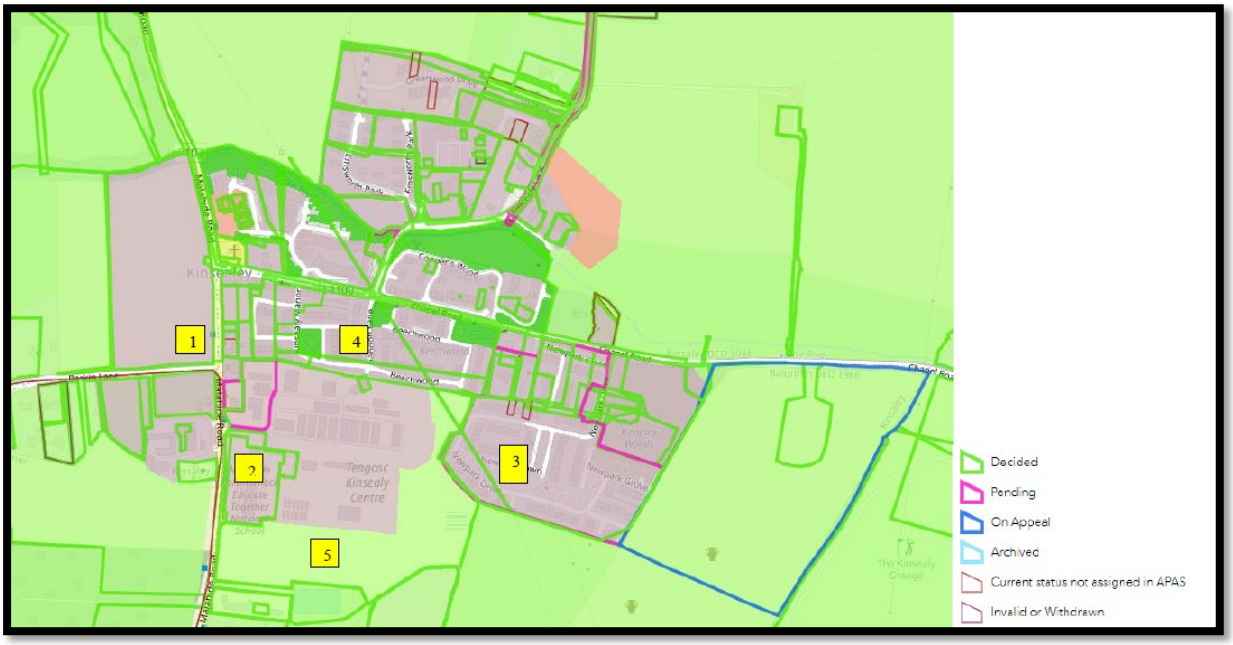


Table 8.1 Planning history in the immediate site vicinity

Map Ref	Planning Ref	Site location	Description of development	Planning Status
1	FCC Reg Ref. F21A/0647 (ABP Ref. 312855-22)	Northwest of site, north of Baskin Lane	Construction of 87 no. residential dwellings (c. 261 sq. m GFA in total), a licenced convenience store (c. 2,347sqm GDA) a civic space (c.1877sqm) together with all associated site and development works	ABP granted permission on 8 April 2024
2	FCC Reg Ref. F20A/0193	The proposed development will be located within the curtilage of Protected Structure RPS No. 0914 on the former Teagasc lands.	The provision of temporary primary school buildings by way of construction of 2 No. prefabricated buildings (c.180 sq. meters) on a defined site areas with all associated site works including hard surface areas. Temporary permission for a period no longer than 5 years is being sought.	FCC granted permission on 02 June 2021.
3	FCC Reg Ref. F16A/0464 (ABP Ref. PL06F.248515). FCC Reg. Ref. F19A/0471	Kinsaley House on lands immediately east of the subject site on lands now comprising the Newpark residential development.	Demolition of buildings and construction of 100 houses and all associated works on a site of 6.5ha. (16.06 acres).	ABP granted permission on 25 October 2017. Revised permission granted 14 January 2020 for amendments to some of the units.
3	FCC Reg Ref. F20A/0102	See Above	Variation to permitted residential development	FCC granted permission on 21 July 2020 to vary permitted residential development F16A/0464 and PL 06F.248515
3	FCC Reg Ref. F20A/0139	See Above	Variation to permitted residential development	FCC granted permission on 13 August 2020 to vary permitted residential development

Map Ref	Planning Ref	Site location	Description of development	Planning Status
				F16A/0464 and PL 06F.248515
3	FCC Reg. Ref. F20A/0303	See Above	Reconfiguration and redesign of the permitted housing units (Fingal County Council Reg. Ref. F16A/0464; An Bord Pleanála Ref. PL06F.248515), to provide for an increase from 74 houses (11 no. two beds, 46 no. three beds, 17 no. four beds) to 96 no. two storey houses including 34 no. semi-detached and 62 no. terraced units (comprising 11 no. two beds, 82 no. three bed and 3 no. four bed units).	FCC granted permission 3 February 2021
3	FCC Reg. Ref. F21A/0527	See Above	Amendments to permitted development	FCC granted permission on 6 January 2022
4	FCC Reg Ref. F16A/0511 (ABP PL.06F.248584)	Lands immediately north of the subject site on lands now comprising the Beechwood residential development.	Demolition of 'Springfield' and construction of 82 no. residential units, childcare facility and all associated site works on a site of 3.65 ha at Chapel Road and Kinsaley Lane	ABP granted permission on 18 October 2017
5	ABP Ref. 301908-18	Uisce Eireann, has reserved both a permanent and a construction wayleave across a significant portion of the southern section of the subject lands facilitate the delivery of the proposed foul drain as part of GDDS project.	The Greater Dublin Drainage Scheme (GDDS) Strategic Infrastructure Development (SID), described in summary as a proposed wastewater treatment plant, orbital sewer, outfall pipeline, sludge hub storage centre and regional biosolids storage facilities	ABP granted permission on 11 November 2019. The application has been remitted to the Board for reconsideration on 7 December 2021 following Order of the High Court. The consideration of the application is ongoing.

8.1 Habitat Loss and Fragmentation

Existing and proposed projects that impact the same ecological receptors has the potential to lead to greater impacts when assessed cumulatively. The loss of the woodland and grassland habitats as well as other vegetation on the site and in other developments in the immediate area. The proposed development is unlikely to cause significant habitat loss in relation to these habitats. The development seeks to mitigate the damage done through the removal of the vegetation. It will mitigate through a robust planting plan that will not immediately offset the damage cause through the removal of the current vegetation, but will enhance the area with native vegetation that is more valuable to native species. Given that this development is not significant in regards to habitat loss and it is unlikely that large scale vegetation removal would happen in the surrounding area, it is unlikely that there will be significant impacts on habitat when assessed cumulatively with other developments.

The proposed development does not directly affect any protected habitats associated with a European site; thus, no in-situ impacts on protected sites through habitat loss, destruction, or fragmentation are expected. Regarding ex-situ effects, the development site does not contain the habitats or species for which Baldoyle Bay SAC/SPA, North Dublin Bay SAC, North Bull Island SPA, South Dublin Bay SAC, South Dublin Bay and Tolka Estuary SPA, and North-West Irish Sea SPA are designated. No protected habitats associated with a Natura 2000 site are present within or adjacent to the red line boundary.

As such, future developments are unlikely to result in the loss or fragmentation of habitats associated with the Baldoyle Bay SAC/SPA, North Dublin Bay SAC, North Bull Island SPA, South Dublin Bay SAC, South Dublin Bay and Tolka Estuary SPA, and North-West Irish Sea SPA, and no in-combination habitat loss or fragmentation effects are anticipated.

8.2 Disturbance to Species

Disturbance to species could arise from noise emissions and human activity. The primary sources of cumulative noise and human activity effects would likely stem from existing commercial and residential activities in the area. Fauna in the vicinity of the development site are already accustomed to human, agricultural, commercial, and vehicular noise. As stated previously in the report, the introduction of more humans and human related activities is no expected to be significant on its own or in combination with any other development.

Vegetation removal within the site will not occur during the bird nesting season (1st March -

31st August). If tree removal is required during this period, a qualified ecologist will inspect the area for breeding birds before clearance. Should active nests be found, the ecologist will determine if a licence from the National Parks and Wildlife Service (NPWS) is needed or if a buffer zone can be established around the nest, with removal postponed until the chicks have fledged. As this is a legal requirement, it is highly unlikely that any other development would significantly disturb nesting birds and no significant impacts are anticipated.

Since no works will take place within the Natura 2000 sites, there is no anticipated direct impact on protected species or qualifying interests of the designated sites. Additionally, waste materials generated during site works, including construction and excavation debris, will be transported to a licensed waste facility. Removing waste materials generated during site works reduces the risk that the proposed development could pollute the surrounding area which would negatively impact the local species and habitats. Given the surrounding rural and urban land use, the proposed development is not expected to significantly increase cumulative noise levels or other disturbance effects from human activity that could pose an adverse risk to designated sites and local species.

8.3 Air Quality

The proposed energy strategy is passive whereby heating, cooling demands are minimized through a fabric-first approach, which reduces over-reliance on technology. The scheme is designed to achieve HPI certification and exceed minimum requirements. In-combination impacts from residential areas would be controlled by national energy policies, grant schemes, and motor fuel emission targets.

Therefore, it is considered that there would be no cumulative air quality impacts that would pose a significant risk or adverse effect on designated sites.

8.4 Water Quality

The continued implementation of the Water Framework Directive is expected to achieve or maintain improvements in water quality within the River Sluice, Liffey and Dublin Bay Catchments. Developments like this could interact with existing environmental pressures on the catchment, including agriculture, anthropogenic sources, domestic and urban wastewater, urban runoff, industry, and forestry. Given the current commercial activities and the proposed new drainage network (both foul and surface water), it is concluded that there would be no

significant cumulative impacts on water quality that could pose a risk to Natura 2000 sites during the operational phase.

The surface water, consisting of clean rainwater runoff from roofs and hard areas, will be directed to a new surface water drainage network. This system will include SuDS (Sustainable Drainage Systems) features such as Rain gardens, Swales, Permeable paving, Permeable macadam, and an Oil Separator to manage and treat the water. All stormwater drainage works will be planned following the Water Manual Code of Practice Water Infrastructure Standard Details (2020) (Document Reference: IW-CDS-5020-03) and all watermain and ancillary works will be planned in accordance with Irish Water Manual Code of Practice Water Infrastructure Standard Details (2020), ensuring compliance and best practice.

Wastewater from the development will connect to the existing private foul water drainage network, which discharges to the Ringsend WWTP which would continue to treat water from north Dublin until the proposed new Waste Water Treatment Plant at Clonshagh is permitted and developed. There is an indirect pathway between the development site and Natura 2000 sites in Dublin Bay. While the issues at Ringsend wastewater treatment plant are being dealt with in the medium-term evidence suggests that some nutrient enrichment is benefiting wintering birds for which SPAs have been designated in Dublin Bay (Nairn & O'Hallaran eds, 2012). Additional loading to this plant arising from the operation of this project are not significant as there is no evidence that pollution through nutrient input is affecting the conservation objectives of any of the Natura 2000 sites in Dublin Bay.

During the construction phase, surface water will either percolate into the ground or be captured within the existing drainage network of. Mitigation measures, such as silt control features (e.g., silt fences), will be implemented to protect watercourses during construction activities, preventing any adverse effects on the drainage network and thereby minimizing any potential impacts on the water quality of the designated sites.

9.0 CONCLUSIONS

This report concludes that the proposed development is unlikely to have any significant impact on protected species. With the proper implementation of bat protection measures and appropriate lighting during both construction and operational phases, the impact on local bat

populations will be minimal. Measures such as tree root protection for flora and safeguarding mature/semi-mature trees for fauna as well as retention of as much vegetation as feasible will ensure no significant effects occur.

The lighting plan will be designed to minimize disturbance to nocturnal species, using directional lighting away from trees and hedgerows. It is recommended that the project proceed as planned, incorporating the biodiversity enhancement measures outlined in this report and accompanying documents.

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