April 2025

Ecological Impact Assessment

Proposed Large-Scale Residential Development at LDA Wilton, Sarsfield Road, Cork

On behalf of

The Land Development Agency (LDA)

MALONE O'REGAN ENVIRONMENTAL

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Approved By: Dyfrig Hubble **Signed:**

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05	14/04/25	Updated Landscaping	Final	AC	HT	DH

Ecological Impact Assessment

Proposed Large-Scale Residential Development at LDA Wilton, Sarsfield Road, Cork

The Land Development Agency (LDA)

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1 INTRODUCTION

1.1 Background and Purpose of Report

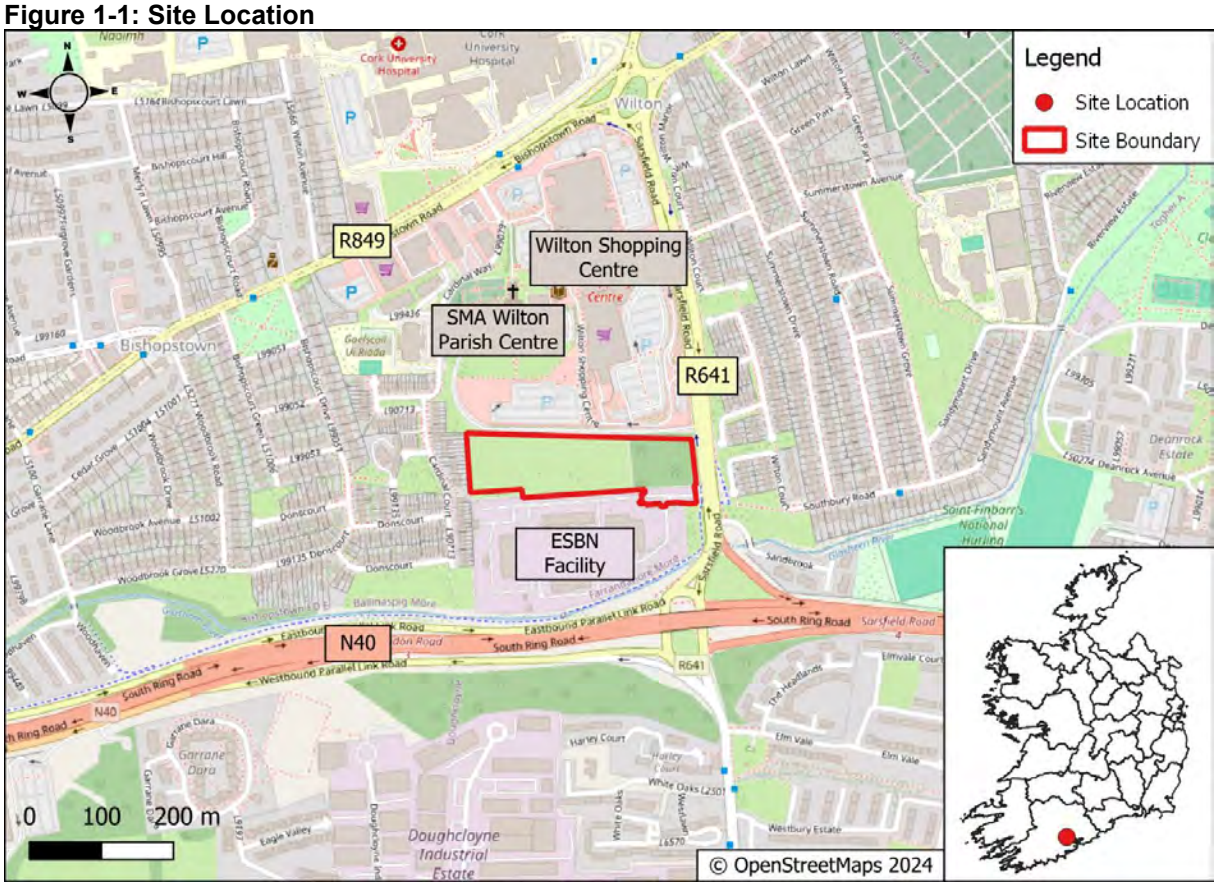
Malone O'Regan Environmental ('MOR Environmental') was commissioned by Reddy Architecture + Urbanism to undertake an Ecological Impact Assessment ('EcIA') on behalf of the Land Development Agency ('LDA') ('the Applicant') for the proposed Large Residential Development ('the Proposed Development) at Farrandahadore More, Sarsfield Road, Wilton, Cork (OS ITM Reference X: 564999 Y: 569684).

The Proposed Development will be located on a site that is circa ('ca.') 2.61 hectares ('ha') in size and is located on a site adjacent to Sarsfield Rd., Wilton, Cork, ca. 3km southwest of Cork City Centre and is shown in Figure 1-1 ('the Site').

The objective of this EcIA was to survey and assess the land within and adjacent to the Site for the presence of any habitats or species that could present a constraint on the Proposed Development or an opportunity for enhancement.

This report will be submitted as part of a planning application for the Proposed Development to Planning Authority. A Stage 1: Appropriate Assessment has also been submitted in support of the planning application.

Figure 1-1: Site Location



1.2 Statement of Authority

This report was approved by Mr. Dyfrig Hubble, Associate Director - Ecologist. Dyfrig is a full member of the Chartered Institute of Ecology and Environmental Management ('CIEEM'). Dyfrig has over 18 years' of experience working in the ecological consultancy sector, including habitat surveys and appraisals and specialist protected species surveys in support of Appropriate Assessments.

1.3 Consultation

MOR Environmental consulted with the local National Parks and Wildlife Service ('NPWS') officer, Mr. Sam Bayley, on two occasions over the phone and via email regarding the Proposed Development. This was in regard to the presence of a small soprano and common pipistrelle bat roost on the Site and the potential need for a derogation license. The local NPWS officer advised that if no impacts are considered likely to occur on any identified bat roost on the Site, a bat derogation license would not be required for the Proposed Development.

Cork City Council was also consulted and liaised with regard to the lighting plan and lux levels surrounding the soprano, and common pipistrelle roost onsite. Cork City Council advised the following[1]:

> *"……for safety reasons I would not recommend going below 5 lux on the roads. It would be too dark and the pedestrians would be at risk of being hit by motorised vehicles.*
>
> *To reduce back spill into the green area and bat routes, I would look at rear and side louvres, the possibility of another light fitting with a good rear cut off or relocation of columns to reduce light spill.'*

1.4 Legislation and Planning Policy Context

1.4.1 Legislation Policy Context

Within Ireland, a number of sites of international or national importance to nature conservation, as well as many species of animal and plants are afforded a degree of legal protection, as set out in Box 1 below.

A study of biodiversity-related planning policy at both national and local level has been undertaken for the Site and locality in order to highlight any potential conflicts with the relevant legislation and guidance documents.

Box 1 Designated Wildlife Sites and Protected and Otherwise Notable Habitats and Species

The National Parks and Wildlife Service ('NPWS') notifies sites in Ireland that are of international or national importance for nature conservation (although some sites that are of national importance for certain species have not been so designated).

Internationally important sites may also be designated as:

- Special Areas of Conservation ('SACs') and Candidate Special Area of Conservation ('cSACs'): the legal requirements relating to the designation and management of SACs in Ireland are set out in the European Communities (Birds and Natural Habitats) Regulations 2011-2021.
- Special Protection Areas ('SPAs') and candidate Special Protected Areas ('cSPAs'): strictly protected sites classified in accordance with Article 4 of the EC Directive on the Conservation of Wild Birds (209/147/EC), also known as the Birds Directive; and,
- Ramsar sites: wetlands of international importance designated under the Ramsar Convention, to which Ireland is a signatory.

Other statutory site designations relating to nature conservation are:

- Natural Heritage Areas ('NHAs'): these represent examples of some of the most important natural and semi-natural terrestrial and coastal habitats in the country and are afforded protection under the Wildlife (Amendment) Act 2000. NHAs are legally protected from damage and receive protection from the date they are formally proposed for designation; and,
- Proposed Natural Heritage Areas ('pNHAs'): these sites are not afforded the same protection as NHAs. These sites are proposed by the NPWS but are not statutorily proposed or designated. Prior to statutory designation these are subject to a very limited legal protection. They are, however, sites of significance for wildlife and habitats and are important for the purposes of this EcIA report.

Legally protected species

[1] Email correspondence between James Kenneally – Cork City Council and Henry Tennyson ('MOR Environmental') / Michael O'Callaghan (EDC Engineers)

Box 1	**Designated Wildlife Sites and Protected and Otherwise Notable Habitats and Species**

Many species of animal and plant receive some degree of legal protection. For the purposes of this study, legal protection refers to:

- Species included in the Wildlife (Amendment) Act 2000, excluding species that are only protected in relation to their sale, reflecting the fact that the site disposal will not include any proposals relating to the sale of species; and,
- Species afforded protection under the Flora Protection Order 2022 (S.I.No.235/2022).

Other notable habitat/species categories

- Biodiversity Action Plan ('BAP') species: those targeted in local or national BAPs as being of particular conservation concern (priority species);
- Red and Amber List birds: those listed as being of high or medium conservation concern as listed by Birdwatch Ireland on the Birds of Conservation Concern in Ireland 2020-2026 [1]; and,
- Other Irish Red Data Book [2] species and Nationally / Regionally / Locally Notable species where appropriate.

1.4.2 National Planning Context

1.4.2.1 Planning Policy Statement

Project Ireland 2040 was launched by the Government in February 2018 [3] and incorporates two policy documents - the National Planning Framework and the National Development Plan.

National Planning Framework

Under the biodiversity section "*Project Ireland 2040 National Planning Framework*", the National Policy Objective 59 is to:

'Enhance the conservation status and improve the management of protected areas and protected species by:

- *Implementing relevant EU Directives to protect Ireland's environment and wildlife;*
- *Integrating policies and objectives for the protection and restoration of biodiversity in statutory development plans;*
- *Developing and utilising licensing and consent systems to facilitate sustainable activities within Natura 2000 sites; and,*
- *Continued research, survey programmes and monitoring of habitats and species.'*

The National Policy Objective 60 in the same document is to:

> *'Conserve and enhance the rich qualities of natural and cultural heritage of Ireland in a manner appropriate to their significance.'*

The National Development Plan

The National Development Plan [4] also lists the following items as strategic investment priorities in relation to National Heritage and biodiversity:

- *'Implementation of the current and future National Biodiversity Action Plan, delivery of National Parks and Wildlife Service Farm Plans and LIFE projects, enhanced wildlife crime investigation capacity and identification and delivery conservation measures at designated sites as identified in the Prioritised Action Framework for Ireland (2021-2027).'*
- *'Investment in nature and biodiversity, to improve the quality of natural habitats and support native plants and animals, including those under threat, and to bolster broader societal wellness and sustainability goals.'*
- *'Future-proofing obligations under the Biodiversity Strategy 2030, including potential national designations and the preparation and delivery of a National Restoration Plan.'*

1.4.2.2 All-Ireland Pollinator Plan 2021-2025

Irish pollinators are in decline and in response, Ireland joined a small number of countries in Europe that have developed a strategy to address pollinator decline and protect pollination services.

The All-Ireland Pollinator Plan [5] was developed by a fifteen-member All-Ireland steering group, with the aim to build a foundation to bring about a landscape where pollinators can flourish, reverses pollinator losses, helps restore populations to a healthy level and make Ireland pollinator-friendly.

- Increase the area of Council land managed in a pollinator-friendly way;
- Make transport corridors more pollinator-friendly;
- Organisations with site networks on public land to manage these in a pollinator-friendly way;
- Make local communities more pollinator-friendly;
- Make protected land in a pollinator-friendly way where appropriate;
- Manage protected land in a pollinator-friendly way where appropriate;
- Complete policy investigations;
- Strengthen links between the AIPP and other national initiatives;
- Track changes in pollinators on public and private land;
- Increase the number of gardens that are pollinator friendly; and,
- Increase the network of AIPP business supporters.

1.4.2.3 Ireland's 4th National Biodiversity Plan, 2023 – 2030

The 4th National Biodiversity Action Plan ('NBAP') was published in January 2024 having been in development since 2021. The NBAP sets out a number of strategic objectives that lay out a clear framework for Ireland's approach to biodiversity and demonstrates Ireland's commitment to protecting biodiversity and halting decline [6].

The NBAP was reviewed as part of this report, and two objectives were considered relevant to the Proposed Development.

Objective 2 of the NBAP aims to:

> '*Meet urgent conservation and restoration needs.*'

One targeted outcome is listed under this objective and is considered relevant to the Proposed Development. This outcome is as follows:

Outcome 2H:

> *'Invasive alien species ('IAS') are controlled and managed on an all-island basis to reduce the harmful impact they have on biodiversity and measures are undertaken to tackle the introduction and spread of new IAS to the environment.'*

Objective 3 of the NBAP aims to:

> '*Secure Nature's Contribution to People'*

Two targeted outcomes are listed under this objective which are considered relevant to the Proposed Development. These outcomes are as follows:

Outcome 3B:

'*The role of biodiversity in supporting wellbeing, livelihoods, enterprise and employment is recognised and enhanced.'*

Outcome 3C:

'*Planning and development will facilitate and secure biodiversity's contributions to people.*

1.4.3 Regional Planning Context

1.4.3.1 Regional Spatial and Economic Strategy for the Southern Region

The Regional Spatial and Economic Strategy for the Southern Region ('RSES') [7] recognises the need to conserve and enhance biodiversity through coordinated spatial planning between the counties within the southern region of Ireland. This strategy came into effect on 31st January 2020.

Under the biodiversity section, Regional Policy Objective 126 states that the Southern Regional Assembly will:

a) '*Promote biodiversity protection and habitat connectivity both within protected areas and in the landscape through promoting the integration of green infrastructure and ecosystem services, including landscape, heritage, biodiversity and management of invasive and alien species in the preparation of statutory and non-statutory land-use plans. The RSES recognises the role of the National Biodiversity Data Centre through its Citizen Science initiatives;*

b) Support local authorities acting together with relevant stakeholders in implementing measures designed to identify, conserve and enhance the biodiversity of the Region; seek and support the implementation of the All-Ireland Pollinator Plan, National Biodiversity Action Plan and National Raised Bog SAC Management Plan;

c) Local Authorities are required to carry out required screening of proposed projects and any draft land-use plan or amendment/ variation to any such plan for any potential ecological impact on areas designated or proposed for inclusion as Natura 2000/ European Sites and shall decide if an Appropriate Assessment is necessary, of the potential impacts of the project or plan on the conservation objectives of any Natura 2000/European Site;

d) Support local authorities to carry out, monitor and review biodiversity plans throughout the Region. Planning authorities should set objectives in their land use plans to implement and monitor the actions as set out in the National and County Biodiversity Plans, as the conservation of biodiversity is an essential component of sustainable development. Local authorities should address the issue of fisheries protection and invasive introduced species and encourage the use of native species for landscape planting in rural areas, in the review of their biodiversity plans; and,

e) Support local authorities to work with all stakeholders to conserve, manage and where possible enhance the Regions natural heritage including all habitats, species, landscapes and geological heritage of conservation interest and to promote increased understanding and awareness of the natural heritage of the Region.'

The RSES also contains policies relating to invasive species. Regional Policy Objective 127 states that it is an objective to:

a) '*Support coordination between the Region's local authorities in terms of their measures to survey invasive species in their counties and coordinate regional responses;*

b) Encourage greater awareness of potential threats caused by invasive species and how they are spread; and,

c) Carefully consider and implement the management of invasive species where there is a corridor, such as hydrological connections to European Sites in order to prevent the spread of invasive to sensitive sites.'

1.4.4 Local Planning Context

1.4.4.1 Cork City Development Plan 2022-2028

The Cork City Development Plan 2022-2028 ('CCDP') contains a number of objectives that relate directly to the protection of biodiversity and natural heritage in the context of proposed developments [8]. These include objectives that involve compliance with the EU Habitats Directives and the Irish Wildlife Acts and that ensure the protection of ecological corridors and habitats [8]:

Strategic Objective 5 – Green and Blue Infrastructure, Open Space and Biodiversity

'Manage and enhance green and blue infrastructure, to protect and promote biodiversity, ecology and habitat connectivity, protect natural areas, enhance landscape character and maritime heritage, and manage access to green and blue spaces that provide recreation, amenity and natural areas.'

Cork City's Green and Blue Infrastructure Objectives – Biodiversity

'The biodiversity of Cork City encompasses all the natural elements in the city and their interaction with each other. New development can create biodiversity-rich green and blue infrastructure by retaining and enhancing existing trees, plants and providing new wildlife corridors, buffer zones, 'stepping stones' or green bridges. This creates connectivity for flora and fauna species and natural movement and migration through the green and blue infrastructure network. The 'Biodiversity and the Natural Environment' section below sets out in more detail how this important consideration will be addressed in Cork City.'

Strategic Biodiversity Goals

1. '*To protect and enhance designated areas of natural heritage and protected species and to adhere to all relevant biodiversity legislation;*
2. *To ensure that sites and species of natural heritage and biodiversity importance in non-designated areas are identified, protected and managed appropriately;*
3. *To create green and blue infrastructure network thereby creating ecological corridors linking areas of biodiversity importance;*
4. *To implement the recommendations of the GBI study and integrate green and blue infrastructure solutions into new developments;*
5. *To ensure all citizens are within 5km of a green and ideally wild space;*
6. *To protect and maintain the integrity and maximise rivers and watercourses within the city;*
7. *To protect and enhance the city's trees and urban woodlands; and,*
8. *To promote best practice guidelines for management, control and eradication of invasive alien species.'*

Objective 6.1 – Cork City Green & Blue Infrastructure Study and Strategy

'To manage, protect and enhance the Green and Blue Infrastructure assets of Cork City in line with the Cork City Green and Blue Infrastructure Strategy set out in the

Development Plan, and to support the actions, opportunities and projects identified in the Cork City Green and Blue Infrastructure Study 2021.'

Objective 6.5 – Trees & Urban Woodland

d) 'To support retaining existing trees and the planting of new trees as part of new developments subject to care on the species of tree and the siting and management of the trees to avoid conflict with transport safety and residential amenity in particular;

e) To promote the planting of pollinator friendly native deciduous trees and mixed forestry to benefit biodiversity.'

Objective 6.9 – Landscape

c) 'Landscape will be an important factor in all development proposals, ensuring that a proactive view of development is undertaken while maintaining respect for the environment and heritage generally in line with the principle of sustainability;

d) To ensure that new development meets the highest standards of placemaking, siting and design;

e) To discourage proposals necessitating the removal of extensive amounts of trees, hedgerows and historic walls or other distinctive boundary treatments.'

Objective 6.22 – Natural Heritage and Biodiversity

a) 'To protect, promote and enhance Cork City's natural heritage and biodiversity;

b) To support the implementation of the National Biodiversity Plan and the All-Ireland Pollinator Plan and successor publications in Cork City;

c) To support and implement the biodiversity actions from the Cork City Heritage and Biodiversity Plan (2021-2026) in partnership with all relevant stakeholders;

e) Cork City Council will work with communities to enhance existing, and the delivery of new, biodiversity-rich areas throughout the City including individual buildings, streets, public and private spaces by supporting the provision of green roofs and walls, rain gardens, biodiversity-rich parklets, rainwater harvesting, natural banks and naturalised SUDS;

f) Cork City Council will seek, where appropriate, to enhance the linear habitat connectivity, including the interconnection and enhancement of:

- *Woodlands, gardens, open spaces, fields and hedgerows.*
- *Coastal habitats, river catchments, lakes, streams, ponds.*
- *Aquatic, marginal and bank side habitats.*
- *Upstream of mapped flood zones.*
- *City transport routes.'*

Objective 6.23 – Designated Sites and Protected Species

'To protect and enhance designated sites and areas of natural heritage and biodiversity and the habitats, flora and fauna for which it is designated, and to protect, enhance and conserve designated species.'

Objective 6.25 – Non-designated Areas of Biodiversity Importance

'Cork City Council will seek to map the City's ecological networks and corridors of local biodiversity value outside of designated areas, and to work with local stakeholders in supporting the effective management of features which are important for wild flora and fauna and habitats.'

Objective 6.26 – Alien Invasive Species

'To support the implementation of measures to control and prevent the introduction, establishment or spread of ecologically damaging alien invasive species (e.g. Japanese Knotweed and Himalayan Balsam).'

1.4.4.2 Cork City Heritage and Biodiversity Plan 2021-2026

The Cork City Heritage and Biodiversity Plan 2021-2026 [9]contains a number of objectives and actions that relate to the protection of biodiversity and natural heritage in the context of proposed developments. The policies and objectives of the Cork City Heritage and Biodiversity Plan with regard to the natural environment that are relevant to the Proposed Development are as follows [9]:

Theme 1:

'Promote best practice and encourage heritage and biodiversity conservation and management.'

Objective 1.1

'Implement Cork City Council's commitments to the All-Ireland Pollinator Plan'.

Action 1.3

'Incorporate planning conditions to encourage pollinator friendly and native species plating in new developments.'

Objective 1.6

'Manage and Control Alien Invasive Species in Cork City'.

Action 1.7

'Incorporate planning conditions to manage and control alien invasive species in developments as appropriate.'

Action 1.10

'Protect and promote Designated Habitats & Species'.

Action 1.10

'Identify buffer areas around the designated European sites within Cork City Council area and work with NPWS to protect and enhance these areas.'

Objective 1.12

'Investigate issues relating to Light Pollution'.

Action 1.12

'Work with relevant stakeholders to investigate issues relating to light pollution in Cork City.'

Objective 1.15

'Implement relevant actions from the Climate Adaptation Plan (2019-2024)'.

Action 1.15

'Work with various Cork City Council Dept to implement relevant actions from the Climate Adaptation Strategy 2019-2024 especially with respect to Action 9.3 (b):In the development of policy and the planning and provision of green infrastructure, ensure appropriate. Buffer zones are maintained and protected to avoid potential impacts on designated habitats or protected species and habitats and to protect and enhance

wider biodiversity. Objective 13 To protect, enhance and restore the natural environment and promote biodiversity.'

Objective 1.26

'Ensure Heritage and Biodiversity is placed at the heart of the activities of Cork City Council'.

Action 1.26

'Liaise with all departments within Cork City Council to ensure that the care and management of heritage is incorporated into the work of all Dept of the City Council and new procedures are put in place to ensure communication between Dept'.

Action 1.27

'Liaise with all departments within Cork City Council to ensure that the care and management of heritage is incorporated into planning applications, Development and Local Area plans & policies, and projects such as Housing, Roads and Parks as appropriate'.

2 METHODOLOGY

2.1 Assessment Methodology for Prediction of Effects

Desk study data collection and field survey work were carried out as part of the EcIA process, with the objective of ensuring that sufficient data was collected to identify the designated sites, habitat areas and species that could be significantly affected by the Proposed Development. This information then informed the assessment of the effects on the potential biodiversity receptors.

The area for which biological data was collected was based on an assessment of the ecological zone of influence of the Proposed Development. The ecological zone of influence is the area that could be affected by the Proposed Development, within which there is the potential for significant ecological effects. All SPAs and SACs within 15km have been considered to assess their ecological pathways and functional links. As acknowledged in the Office of Public Relations ('OPR') guidelines [10]. Few projects have a Zone of Influence this large; however, the identification of European sites within 15km and NHAs and pNHAs within 5km has become widely accepted as the starting point. For this reason, all SPAs and SACs in 15km and NHAs and pNHAs in 5km have been identified for consideration. Desk study data were collected for this area (See Section 4.1), whilst field surveys focused on the lands within and adjacent to the Site (See Section 4.2).

It should be noted that there was the potential for the Zone of Influence to be redefined during the assessment process in response to a new design or environmental information and / or for the geographical extent of field surveys to be extended to cover a greater extent of the desk study area (e.g. if the desk study identified species occurring offsite that could be significantly affected by the Proposed Development). Ultimately, such an increase in the study area was not required for this assessment.

The next stage of the assessment was to determine which, if any, of the sites, habitats and species within the Zone of Influence (referred to in this report as 'potential biodiversity receptors') had the potential to be significantly affected by the Proposed Development (see Section 5). A high-level 'scoping' assessment was then undertaken (see Section 5.1) to differentiate effects that were sufficiently likely to be significant as to merit more detailed assessment from those that could be assessed at a less detailed level as they were classified as not likely to be significant (referred to as 'screened out' effects).

The assessment of how the potential biodiversity receptors would likely be affected by the environmental changes associated with the Proposed Development was based not only on the results of the desk study and field surveys but also on published information on the potential biodiversity receptors' status, distribution, sensitivity to these changes, biology, and knowledge of ecological processes and functions, as appropriate.

2.2 Desk Study

A desk-based review of information sources was completed, which included the following sources of information:

- Review of aerial maps of the Site and surrounding area;
- The National Parks and Wildlife Service ('NPWS') website was consulted with regard to the most up-to-date detail on conservation objectives for the Natura 2000 sites relevant to this assessment [11];
- The Cork City Council Planning Portal to obtain details about existing/proposed developments in the vicinity of the Site [12];

- The Department of Housing, Local Government and Heritage's planning portal – the National Planning Application Database to obtain details about existing / proposed developments in the vicinity of the Site [13];
- The National Biodiversity Data Centre ('NBDC') website was consulted with regard to species distributions [14]; and,
- The Environmental Protection Agency ('EPA') maps website was consulted to obtain details about watercourses in the vicinity of the Site [15].

2.3 Field Survey

2.3.1 Habitat Survey

A habitat survey of the Site was undertaken on the 7th September 2023, by a suitably qualified and experienced MOR Environmental Ecologist. The survey was undertaken for the Site with the Heritage Councils – '*A Guide to Habitats in Ireland'* [16]. This is the standard habitat classification system used in Ireland and includes both a desk-based and field-based assessment.

The survey was conducted in line with the Heritage Council's '*Best Practice Guidance for Habitat Survey & Mapping*' [17].

The assessment was also extended to identify the potential for these habitats to support other features of nature conservation importance, such as species afforded legal protection under either Irish or European legislation.

Following the completion of the habitat survey, it was deemed necessary to undertake additional specialist surveys for bats, wintering and breeding birds; please see details below.

Additional updated habitat surveys were undertaken on the 27th May 2024 and 27th August 2024 to ensure that all survey data remained up to date.

2.3.2 Protected / Notable Species

The methodologies used to establish the presence / potential presence of faunal species are summarised below. These relate to those species / biological taxa that the desk study and habitat types present indicated could occur onsite.

2.3.2.1 Flora

The Site was assessed for the presence of notable / protected flora species in accordance with the following:

- Flora (Protection) Order 2022 (S.I. No. 235/2022); and,
- Ireland Red List No. 10: Vascular Plants [18].

2.3.2.2 Amphibians

The Site was assessed for its potential to provide sheltering, foraging and breeding habitat for amphibians in line with the National Road Authority ('NRA'), now Transport Infrastructure Ireland ('TII'), '*Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes,'* [19]. These included waterbodies suitable for egg-laying and terrestrial habitats comprising open areas with mixed-height vegetation, such as heathland, rough grassland, open scrub or waterbody margins. Suitable, well-drained and frost-free areas are needed to enable amphibians to survive the winter.

2.3.2.3 Badgers

The survey aimed to identify and examine areas where badgers might occur by noting any evidence of badger activity. This included:

- Mammal paths;
- Badger hairs caught in sett entrances / fences / vegetation;
- Paw prints;
- Evidence of foraging (usually in the form of 'snuffle holes');
- Badger Scat (isolated badger droppings);
- Latrines (shallow pits / holes occurring together comprised of exposed badger droppings); and,
- Badger setts.

A mammal path was assumed to be used by badgers if the character of the path (in terms of size) was appropriate and / or if any other signs were in close vicinity (e.g., a badger sett).

The field survey of the Site was conducted in line with the following relevant guidance for badger:

- Scottish Badgers, '*Surveying for Badgers: Good Practice Guidelines,*' [20];
- The Mammal Society, 'Surveying Badgers,' [21]; and,
- NRA, now TII, '*Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes*,' [19].

2.3.2.4 Bats

An initial assessment was carried out during the initial habitat survey for suitability of the habitats onsite to support bat roosting, foraging, and commuting. The following criteria were used to assess the mature trees onsite:

- Presence of natural cavities, splits, cracks, loose bark and rot holes in the trunk or boughs of the tree;
- Presence of dense and woody ivy (*Hedera helix*) growth that could be used by bats for roosting;
- Evidence of bat droppings, which may also be seen as a black streak beneath holes, cracks, branches, etc;
- Presence of smooth edges with dark marks and urine stains at potential entrances to roosts;
- Adjoining habitat which are likely to be important to bats, including the river corridor and hedge / treelines within the survey area that offer a variety of potential foraging, roosting and commuting opportunities for bats; and,
- Adjoining potential roosts / known roosts identified. This raises the likelihood of a tree being of benefit as bats may move roosts if the roost becomes too hot or cold during roosting and a nearby alternative roost is highly desirable.

Given the presence of features suitable for roosting bats, follow up dusk emergence surveys were conducted on 27th September 2023, 23rd May 2024, 13th June 2024 and 28th August 2024.

All surveys were undertaken in accordance with recognised best practice as outlined below:

- DoEHLG, '*Bat Mitigation Guidelines for Ireland*' [22];
- National Road Authority ('NRA') *'Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes*' [23]; and,
- Bat Conservation Trust ('BCT'), '*Bat Surveys for Professional Ecologists Good Practice Guidelines*' [24].

Full details of the survey methodology are provided in Appendix A – Bat Report.

2.3.2.5 Birds

The Site was assessed for its potential to support important assemblages of birds of rare or notable species. Surveys aimed to identify and examine areas where wintering and breeding birds might occur. Any activity and potential nesting habitats onsite were noted.

Wintering Bird Surveys

Three wintering bird surveys were undertaken by a suitably qualified and experienced MOR Environmental ecologist. These surveys were conducted on 10th November 2023, 20th December 2023 and 18th January 2024. The surveys included a vantage point ('VP') survey and transect survey.

These surveys were conducted in adherence with the Winter Farmland Bird Survey methodology provided by the British Trust for Ornithology ('BTO') [25] and the Wintering and Migratory Wildfowl (especially geese and swans) survey methodology provided by the Scottish Natural Heritage ('SNH') [26].

These surveys were undertaken to determine whether or not wintering birds were utilising the Site and the area within the immediate vicinity of the Site. The surveys were timed to coincide with the high tide in Cork Harbour, or as close to high tide as possible in suitable weather conditions and during daylight hours, in order to ascertain whether or not wetland bird species utilising the nearby SPA utilise the proposed site for foraging or roosting purposes when favourable habitats (such as mudflats) are inaccessible.

Full details of the methodology used for these surveys are outlined in Appendix B – Bird Report.

Breeding Bird Surveys

Three breeding bird transect surveys were undertaken on 2nd May, 22nd May and 17th June 2024 by a suitably qualified and experienced MOR Environmental ecologist.

The breeding bird survey was conducted in line with the methodology described in BTO – *A Field Guide to Monitoring Nests* [27] and Common Bird Census in Bird Monitoring Methods [28].

All birds were recorded through sight and sound. Suitable vegetation onsite was examined for the presence of nests. During the survey, the behavioural activity of the recorded birds was noted using the BTO breeding status codes [2]. Birds that displayed non-territorial behaviours were recorded as well (i.e., birds that were foraging and not calling, birds that were loafing). Birds were then classified as non-breeding, possibly breeding and confirmed breeding based on the behaviours exhibited.

Full details of the methodology used for these surveys are outlined in Appendix B – Bird Report.

2.3.2.6 Hedgehogs and Pygmy Shrews

The habitats within and adjacent to the Site were appraised for their potential to support hedgehogs (*Erinaceus europaeus)* and pygmy shrews (*Sorex minutus)* in line with the NRA, now Transport Infrastructure Ireland ('TII'), '*Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes*,' [18].

2.3.2.7 Invasive Species

The Site was visually assessed for the presence of any noxious / invasive species that are regulated under the European Union (Invasive Alien Species) Regulations 2024 (S.I. No. 374/2024) [29] such as Japanese knotweed (*Reynoutria japonica*) and Himalayan balsam (*Impatiens glandulifera*). The Site was also assessed for the presence of non-regulated invasive species that have the potential to impact local biodiversity.

2.3.2.8 Other Species

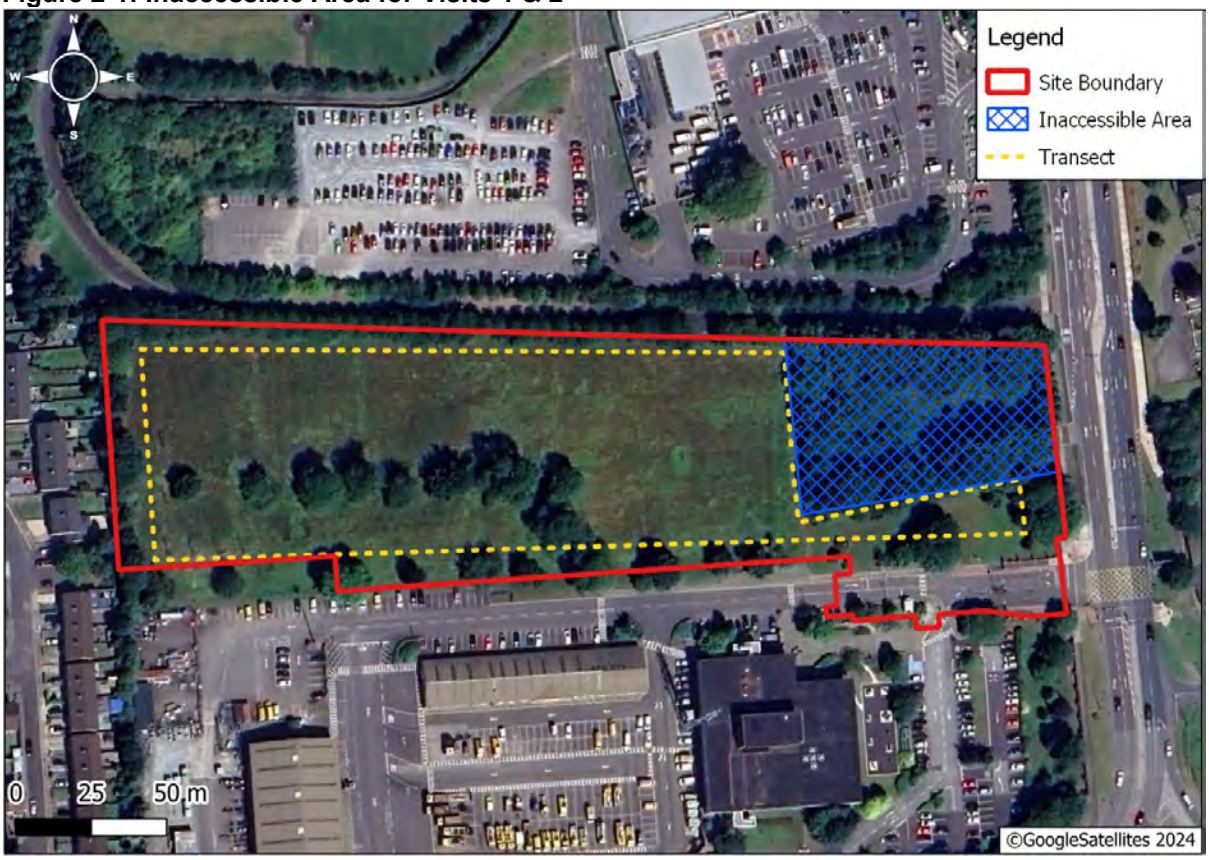
In addition, an assessment was carried out of the potential for the Site to support any other species considered to be of value for biodiversity, including those that were identified as occurring locally based on the findings of the desktop study and professional judgment.

2.3.3 Survey Limitations

During the breeding bird surveys, the area of scrub was inaccessible during the first and second breeding bird surveys due to dense vegetation, and therefore, only the outskirts of the scrub were surveyed. Prior to the third and final breeding bird survey, an area of scrub was cleared in the northeast of the Site. This area was cleared to allow access for ground investigation works to take place on the Site. In advance of clearance works, the local NPWS officer was consulted, and it was agreed that under strict supervision, the area could be partially cleared to allow access. Additionally, due to access restrictions on the Site, surveys were not undertaken as close to sunrise as possible but instead as close to the opening of the ESBN site as possible.

No other survey limitations were encountered.

Figure 2-1: Inaccessible Area for Visits 1 & 2



2.4 Assessment Methodology

The current Guidelines for Ecological Impact Assessment in the UK and Ireland [30] recognise that an ecological assessment cannot consider in detail every individual species or habitat that may potentially be affected by a Proposed Development.

The EcIA process aims to identify those ecological receptors that could be significantly affected by the Proposed Development i.e., where the effects on the receptor are of sufficient concern that they could influence the planning decision) or for which the development could result in the breach of relevant legislation.

The effects of the Proposed Development on these receptors are then assessed, taking into account the sensitive design measures (avoidance measures) and, where necessary, the mitigation measures incorporated as part of the Proposed Development. The scope of the EcIA is determined iteratively.

2.4.1 Significance Evaluation Methodology

As part of the high-level assessment reported in Section 4.1, the conclusion about whether effects are sufficiently likely to be significant as to merit more detailed assessment is informed by a judgement about whether:

- The Site, habitat or species population is of sufficient quality or size that an effect upon it could be significant; and,
- The environmental changes associated with the development are such that there is the potential for a significant effect to occur (i.e., for the integrity of a site or for the conservation status of a habitat area or species population to be affected).

If the answer to both of these questions is yes, the relevant receptor would be subject to more detailed assessment and the significance of effects would be evaluated based on the methodology that is outlined below.

2.4.1.1 Negative Effects

For biodiversity receptors, an effect is assessed as being significant if the favourable conservation status of the specified biodiversity receptor is compromised by the proposed development. Conservation status is defined by CIEEM (2016) as follows:

- "*Habitats – conservation status is determined by the sum of the influences acting on the habitat that may affect its extent, structure and functions as well as its distribution and its typical species within a given geographical area*;" and,
- "*Species – conservation status is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area*."

The decision as to whether the conservation status of the specified biodiversity receptor has been compromised has been made using professional judgement, drawing upon the results of the assessment of how each receptor will be affected by the Proposed Development.

A similar procedure has been used for designated sites that are affected by the Proposed Development, except that the focus is on the effects on the integrity of each site, defined as "the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and / or the levels of populations of the species for which it was designated."

2.4.1.2 Positive Effects

A positive effect is assessed as being 'significant' if development activities are predicted to cause:

- An improvement in the condition of a habitat / species population from unfavourable to favourable – condition data are only available for some European sites, but professional judgement and a review of available literature has been used to apply the same principle to habitats / species elsewhere; or,
- Partial or total restoration of a site's favourable condition.

If a species population, habitat, or site is already in favourable condition, a significant positive effect can still occur. However, given the complexities of assessing these types of effects, there is no simple formula for determining when such effects are significant. In such cases, decisions about significance have, therefore, been made on a case-by-case basis.

2.5 Identification of Potential Biodiversity Receptors

The assessment of the ecological Zone of Influence of the Proposed Development concluded that the development would be likely to result in changes in the extent and / or condition of the existing land cover on the Site, with potential effects on habitats and species on the Site. There is also the potential for effects on any areas that adjoin the site, where fauna might make use of the land cover onsite.

In summary, therefore, the ecological Zone of Influence of the Proposed Development is defined as:

- The Site of the Proposed Development (fauna and flora); and,
- Habitats adjoining the Site (fauna).

In the case of designated sites, a precautionary approach has been taken, and the search area has been extended to identify sites outside of the zone of ecological influence. This

information was used to inform the assessment process further and to ensure that the onsite habitats are not of importance for either habitats or species for which these sites have been designated.

As a basis for determining which biodiversity receptors need to be assessed within the Zone of Influence of the development, CIEEM's guidelines on EcIA recommend that consideration be given to the biodiversity conservation value of the sites, habitats and species that occur within the zone (as appropriate). The guidelines also refer to the need to consider the legal status that is afforded to some species and habitats (refer to Box 1).

Legal status needs to be considered because all developments must comply with the requirements of the law. By implication, therefore, there cannot be significant effects as a result of non-compliance with the law. However, it should be noted that, notwithstanding legal requirements, there is the potential for some legally protected species to be significantly affected in relation to their biodiversity conservation value.

In relation to biodiversity conservation value, only those designated sites, habitat types and species that fall within one or more of the categories defined in Box 1 are of sufficient importance that they could be significantly affected by the Proposed Development.

Drawing upon the biological data assembled for the purposes of this EcIA (Section 4), the potential receptors in relation to the Proposed Development are discussed in Section 5.1.

3 DESCRIPTION OF THE PROPOSED DEVELOPMENT

3.1 Site Context

The Site is situated on a ca. 2.61 ha site, located ca. 3km southwest of Cork City. The Site is accessed via the existing ESB Networks facility entrance and a gate, situated along the regional road R641 also known as Sarsfield Road that connects to the N40 'Cork South Ring Road'.

The Site is comprised of an area of amenity grassland and a section scrub in the northeast corner. A hedgerow / treeline borders the north and west of the Site along with a section of scrub.

The Site is located in the centre of Wilton, to the west of Sarsfield Road (R641). The surrounding area is largely made up of residential, commercial and institutional uses. The Site is bordered to the north by the access road to the SMA Wilton Parish Centre and its associated buildings and lands. Wilton Shopping Centre and car park is located immediately to the east of the SMA Wilton Parish Centre and its associated buildings. To the west of the Site and east of Sarsfield Road comprises large areas of residential premises, both semi-detached and terraced. The Site is bound to the south by the Wilton Electricity Supply Board Networks ('ESBN') Facility. See Figure 3-1 for context.

Figure 3-1: Site Context and Overview

3.2 Watercourses within the Vicinity of the Site

The Site is situated within the Lee, Cork Harbour and Youghal Bay Water Framwork Directive ('WFD') Catchment [Catchment_ID: 19] and the Glasheen [Corkcity]_SC_010 subcatchment [Subcatchment_ID: 19_17] [31].

As per EPA Maps, there is one watercourse, the Glasheen (Cork City) Stream of note within close proximity to the Site.

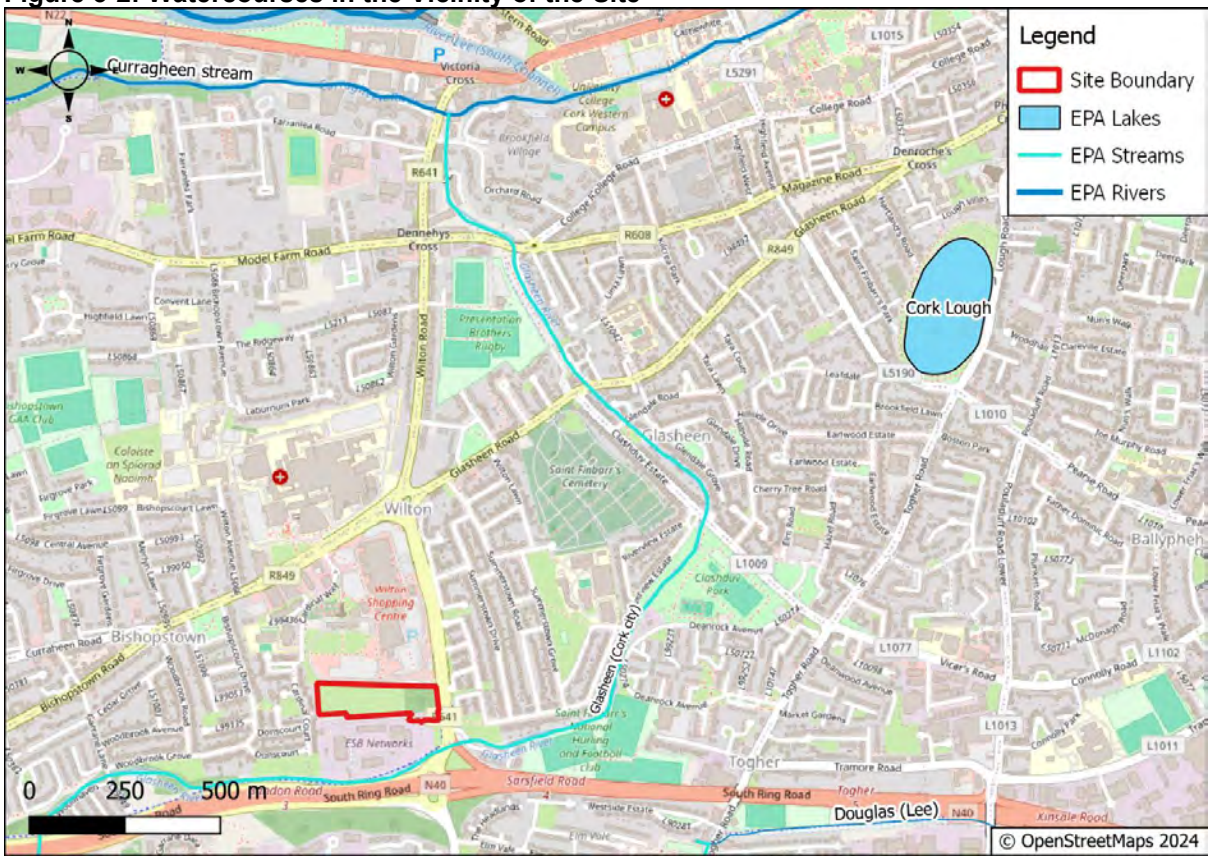
1. Glasheen (Cork city) Stream

The Glasheen (Cork City) stream is located ca. 75m to the south of the Site, at its closest point. This stream drains in an eastern/northern direction and drains into the Glasheen (Cork City) River, ca. 2.3km upstream of the Site. The Glasheen (Cork City) river flows in an eastern direction into the Lee (Cork) Estuary Upper and Lower, which forms part of the Cork Harbour SPA.

Under the Water Framework Directive ('WFD') 2000/60/EC, as amended, the EPA classifies the status and the risk of not achieving good water quality status for all waterbodies in Ireland [31]. According to the WFD 2016-2021 monitoring events, the most up-to-date data at the time of writing this report, the water quality within the Glasheen (Cork City) stream river are considered to be '*Poor*,' and the status of these features are considered '*At risk'* [31]. The water quality status within the Lee (Cork) Estuary Upper and Lower are considered to be '*Moderate*' and these water features are considered to be '*At risk'*.

The location of the key surface water features in the vicinity of the Site are illustrated in Figure 3-2 below.

Figure 3-2: Watercourses in the Vicinity of the Site



3.2.1 Drainage Ditches

The Site walkover did not identify any drainage ditches, or any other surface water features onsite. No natural or existing hydrological link to the Glasheen Stream or any other watercourse in the surrounding area was identified. Therefore, no direct impact pathways were identified.

As per EPA Flood Maps, the Site is not benefitted by any arterial drainage scheme or drainage district [32].

3.3 Description of the Proposed Development

The Proposed Development will consist of the following:

> *'The Land Development Agency (LDA) intends to apply to Cork City Council for permission for a Large Residential Development with a total application site area of ca. 2.61ha, on lands adjoining the ESB Networks DAC Office, at Farrandahadore More, Sarsfield Road, Wilton, Cork City. The development will provide 348 no. residential units and a 156 sqm childcare facility, revised access arrangements to Sarsfield Road and all associated development above and below ground.'*

Full details of the above Proposed Development can be found in the Planners Report submitted as part of this planning application.

3.3.1 Drainage

Surface Water Drainage

The surface water sewer system serving the Proposed Development will consist of a network of surface water drains operated by gravity flow and attenuation tanks. The surface water drainage system will connect to existing combined sewers to the east of the Site. The combined sewer system to the Site will connect to an existing 600mm diameter surface water pipe located below Sarsfield Road, which flows south before being discharged into Glasheen River.

Prior to entering into the existing drainage system to the east of the Site, the surface water drainage will flow through a series of attenuation tanks, hydrobrakes and oil interceptors.

Full details on the surface water drainage including proposed Sustainable urban Drainage Systems ('SuDS') strategies, flow rates and bioretention areas can be found in the Infrastructure Report submitted as part of this planning application.

Foul Water

The foul sewer system serving the Proposed Development will operate by gravity flow. The foul network will be comprised of 150mm, 225mm and 300mm diameter SN8 pipework and will be designed for a minimum velocity of 0.75m/s (self-cleansing) and a maximum peak velocity of 2.5m/s.

It is proposed to connect the foul sewer system to the existing Irish Water network at an existing manhole on the 225mm foul sewer at Sarsfield Road and to upgrade the existing sewer from 225mm to 300mm downstream of this until it reaches the 525mm diameter combined sewer, ca. 12m downstream.

The foul network will be designed and installed in accordance with Uisce Eireann's current Code of Practice for Wastewater Infrastructure.

The Infrastructure Report submitted as part of this planning application provides full details on the foul sewer system.

3.3.2 Site Access

Vehicular access to the Site will be formed via a new priority T-junction with the existing access road to the ESB Networks facility to the southeast. The existing access road is served via an existing signalised junction at Sarsfield Road. It is proposed to retain the existing signalised junction arrangement at Sarsfield Road and upgrade a section of the existing ESB access road, to rationalise traffic movements between the proposed development and the existing ESB networks facility.

3.3.3 Landscaping

A landscape strategy report and plan has been prepared by Park Hood Chartered Landscape Architects (attached as Appendix C) and has been submitted as part of this planning application.

3.4 Construction Procedure

During the construction phase of the Proposed Development potential environmental effects will be short-term and localised. Nonetheless, all works will comply with the relevant legislation, construction industry guidelines and best practice to reduce potential environmental adverse effects.

A Construction Environmental Management Plan ('CEMP') will be prepared and submitted to the planning authority by the appointed contractor in advance of works commencing at the Site. The following guidance will be referred to and will be followed during the construction phase of the project to prevent environmental pollution that may occur within the area:

- C811 - Environmental Good Practice on Site (5th edition) [33];
- Guidance for the Treatment of Badgers Prior to the Construction of National Road Schemes [23];
- Guidance for the Treatment of Bats Prior to the Construction of National Road Schemes [34]; and,
- Guidelines on the Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads [35].

3.4.1 Construction Timeline

The timeline will be developed in accordance with the phasing plan submitted as part of this application.

Working hours will generally be restricted to between 08.00 – 18.00 hours Monday to Friday inclusive and between 08:00-17.00 hours on Saturdays. Construction work will not be permitted on Sundays, public holidays or at night-time except where safety concerns necessitate it or if agreed in advance with the Planning Authority.

4 STUDY RESULTS

4.1 Desk Based Study

Prior to conducting any field surveys, a desk-based review of information sources was completed. This baseline information provided a valuable insight into the types of flora and fauna that may occur onsite and allowed for the identification of features / habitats located off-site that may require further assessment.

4.1.1 European Designated Sites

In accordance with the European Commission Methodological Guidance [36], objective 6.23 of the CCDP [8] and Action 1.10 of the Cork City Heritage & Biodiversity Plan [9], a list of European Designated sites that can be potentially affected by the Proposed Development has been compiled. Guidance for Planning Authorities prepared by the Department of Environment Heritage and Local Government [37] states that defining the likely zone of impact for the screening and the approach used will depend on the nature, size, location and the likely significant effects of the project. The key variables determining whether or not a particular European Designated site is likely to be negatively affected by a project are:

- The physical distance from the project to the European Designated site;
- The presence of impact pathways;
- The sensitivities of the ecological receptors; and,
- The potential for in-combination effects.

All SPAs and SACs within 15km have been considered to assess their ecological pathways and functional links. As acknowledged in the OPR guidelines [10], few projects have a zone of influence this large, however the identification of European Designated sites within 15km has become widely accepted as the starting point for the screening process. For this reason, all SPAs and SACs in 15km have been identified for consideration as part of the screening.

There are two European Designated sites located within 15km of the Site - these are identified in Figure 4-1 and Table 4-1.

Figure 4-1: European Designated Sites within 15km of the Site

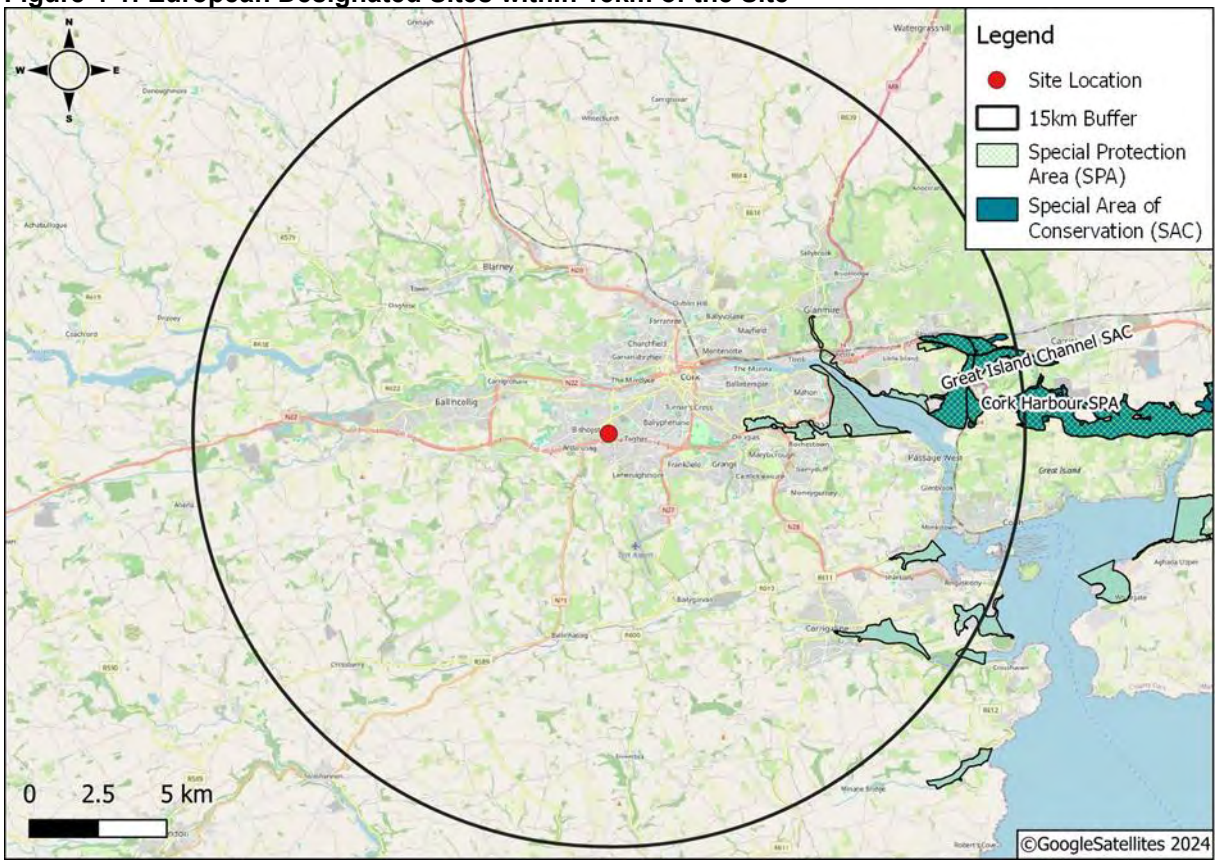


Table 4-1: European Designated Sites within 15km of the Site

Site Name	Code	Distance (km)	Direction from the Site
Special Protection Area ('SPA')			
Cork Harbour	004030	4.7km	E
Special Areas of Conservation ('SAC')			
Great Island Channel	001058	11.5km	E

Further consideration to the European Designated sites listed in Table 4-1 is provided in the Stage 1: Appropriate Assessment Screening Report ('AA') that has been submitted as part of this planning application.

4.1.2 Nationally Designated Sites

Nationally designated sites within 5km of the Site were investigated as per Policy Objective NHA P1, NHA P2 of the CCDP [8].

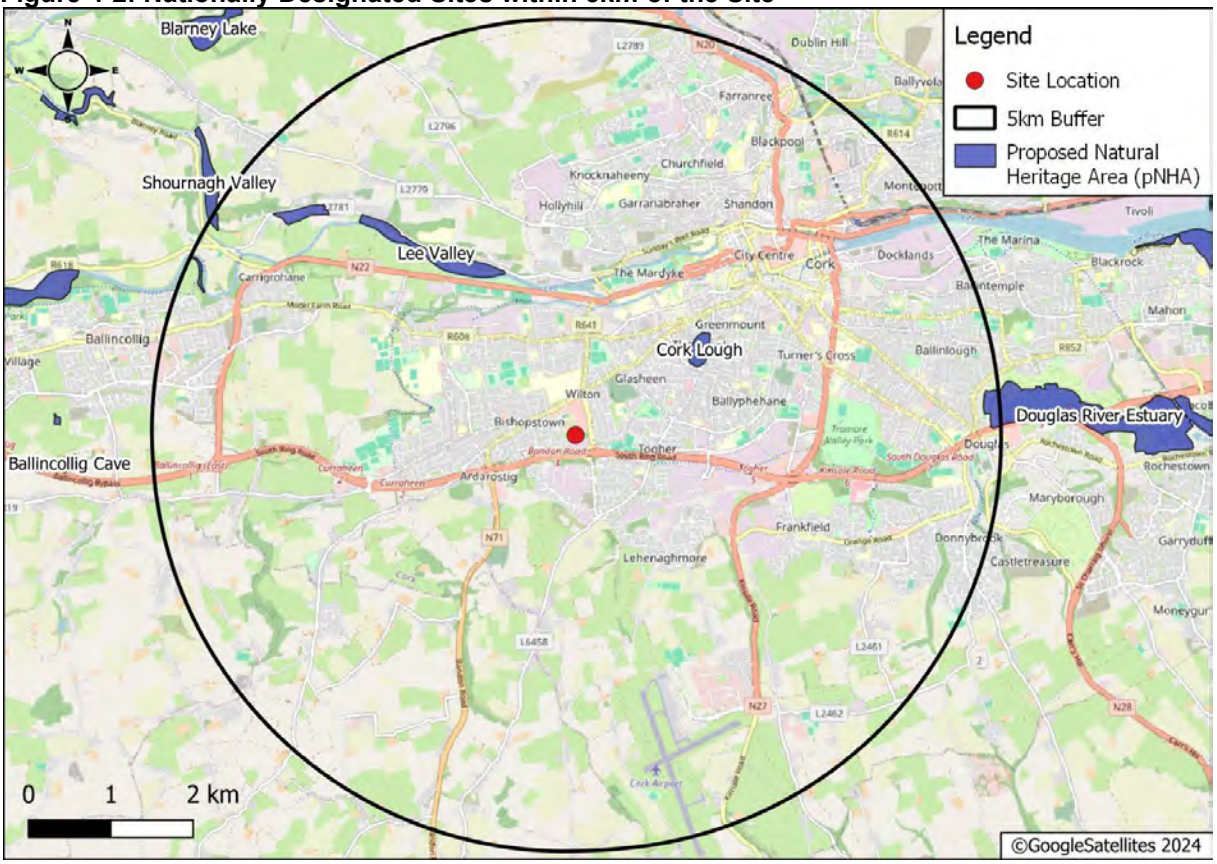
No Natural Heritage Areas ('NHA') are located within 5km of the Site. However, four proposed Natural Heritage Areas ('pNHAs') are located within 5km of the Site. Refer to Figure 4-2 for context.

Table 4-2: Proposed Natural Heritage Areas within 5km of the Site

Site Name	Code	Distance (km) & Direction	Qualifying Interest
Proposed Natural Heritage Areas ('pNHA')			
Cork Lough	001081	1.49km NE	This small lake is situated in the north-west of Cork City, 1km north of the River Lee. In 1972 An Foras Forbartha noted it as an important place to observe wildfowl and gulls due to its close proximity to a large human population. It appears, however, that high numbers of birds, attracted by bread-feeding, are causing severe eutrophication which is in need of remedial action. Also, exotic fish have been released into the lake over the years. In spite of these factors the lake regularly holds over 100 Mute Swans, a feral flock of over 30 Canada Geese and small numbers (usually under 50) of Mallard, Teal, Tufted Duck and Coot. An increasing flock of wintering Lesser Blackbacked Gulls also occurs (460+ in January 1995). The site is a NHA of local important for its bird community.
Lee Valley	000094	2km NW	This site occupies five separate sections of the valley of the River Lee, immediately to the west of Cork City. One section passes close to Ballincollig, and the Ballincollig Regional Park makes up a portion of the site. A diverse range of semi-natural habitats occurs here, including: wet broadleaved woodland, wet grassland, dry broadleaved woodland, unimproved dry grassland occurs on an area of soil that has probable glacial origins and freshwater marsh fringes the river in places. A number of wetland bird species breed here, including Mallard, Heron, Sedge and Grasshopper Warblers and Reed Bunting and two rather locally distributed butterflies, the Small Blue and the Wood White also occur. The diverse range of intact semi-natural habitats in the Lee Valley makes this a site of regional conservation importance.
Douglas River Estuary	001046	4.8km E	Douglas River Estuary forms part of the Cork Harbour SAC. Cork Harbour is a large, sheltered bay system, with several river estuaries - principally those of the Rivers Lee, Douglas, Owenboy and Owennacurra. The SPA site comprises most of the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas River Estuary, inner Lough Mahon, Monkstown Creek, Lough Beg, the Owenboy River Estuary, Whitegate Bay, Ringabella Creek and the Rostellan and Poulnabibe inlets. The site is a SPA under the E.U. Birds Directive, of special conservation interest for a number of species including Little Grebe, Great Crested Grebe, Cormorant, Grey Heron, Shelduck, Wigeon, Teal, Mallard, Pintail and Shoveler. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds. Cork Harbour is of major ornithological significance, being of international importance both for the total numbers of wintering birds (i.e. > 20,000) and also for its populations of Black-tailed Godwit and Redshank. In addition, it supports nationally important wintering populations of 22 species, as

Site Name	Code	Distance (km) & Direction	Qualifying Interest
			well as a nationally important breeding colony of Common Tern. Cork Harbour is also a Ramsar Convention site, part of Cork Harbour SPA, and is a Wildfowl Sanctuary.
Shournagh Valley	000103	4.8km NW	This site includes two lower sections of the Shournagh River ca. 8km west of Cork City – this river flows south-east to join the River Lee which then flows through theCity. The Shournagh River has its source in the foothills of the Boggeragh Mountains and is a fairly turbulent river, whose energy, in former times, was used to power the Mills which are now derelict along its banks. The section furthest north-west from Cork City, comprises areas of wet woodland, scrub and an old estate mixed woodland - Cloghphilip Wood. The Coolymurraghne estate woodland consists of a broadleaved woodland mostly of full grown, widely spread oak trees with a diverse understorey growth of Holly with Scaly Male-fern (Dryopteris affinis), but the northern end of the wood consists of Beech with pine (Pinus spp.) and larch (Larix spp.). An extensive badger sett is found in the woodland. Dippers and Grey Wagtail are noted to feed along and around the river channel, with Willow Warbler and Redpoll Finches on the higher reaches of the river. The woods along the Shournagh Valley included in this site are recommended for conservation and are noted to be of regional importance and deserving of NHA status.

Figure 4-2: Nationally Designated Sites within 5km of the Site



4.1.3 Protected Species

Table 4-3 provides a summary of records of legally protected or otherwise notable species that occur within a 2km grid square of the Site at the time of writing this report [14]. The NBDC records were checked on 17th December 2024. The following NBDC 2km grids have been checked: W66J, W66P, W66U, W67F, W67K, W67Q [14].

Only species recorded within the past 10 years were included in Table 4-3. The parameter of 10 years was chosen based on habitat adaption and modification; it is considered that any records over 10 years old are not representative of the current distribution of species populations.

Table 4-3: NBDC Species within 2km of the Site

Common Name	*Scientific Name*	Date of Last Record*	Designation
Amphibians			
Common Frog	*Rana temporaria*	16/02/2023	Wildlife Acts 1976 / 2000 Habitats Directive Annex V
Bird Species			
Barn Swallow	Hirundo rustica	08/04/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List

Common Name	*Scientific Name*	Date of Last Record*	Designation
Blackcap	*Sylvia atricapilla*	27/05/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Black-headed Gull	*Larus ridibundus*	20/03/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Black-tailed Godwit	*Limosa limosa*	05/12/2022	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Red List
Blue Tit	*Cyanistes caeruleus*	09/04/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Chaffinch	*Fringilla coelebs*	18/02/2021	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Coal Tit	*Periparus ater*	03/02/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Common Blackbird	*Turdus merula*	16/04/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Common Bullfinch	*Pyrrhula pyrrhula*	02/06/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Common Buzzard	*Buteo buteo*	29/11/2022	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Common Chiffchaff	*Phylloscopus collybita*	19/05/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Common Coot	*Fulica atra*	24/12/2022	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex II and III Section I and II Bird Species Birds of Conservation Concern Amber List
Common Cuckoo	*Cuculus canorus*	25/05/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List

Common Name	*Scientific Name*	Date of Last Record*	Designation
Common Greenshank	*Tringa nebularia*	20/11/2016	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Common Kestrel	*Falco tinnunculus*	19/01/2015	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Red List
Common Kingfisher	*Alcedo atthis*	29/11/2022	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Common Moorhen	*Gallinula chloropus*	24/12/2022	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Common Pheasant	*Phasianus colchicus*	12/05/2020	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex II Section I and Annex III and Section III Bird Species Birds of Conservation Concern Green List
Common Redshank	*Tringa totanus*	20/11/2016	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Red List
Common Sandpiper	*Actitis hypoleucos*	18/03/2022	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex II Section I and Annex III and Section III Bird Species Birds of Conservation Concern Red List
Common Snipe	*Gallinago gallinago*	07/05/2020	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex II Section I and Annex III and Section III Bird Species Birds of Conservation Concern Red List
Common Starling	*Sturnus vulgaris*	16/04/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Common Swift	*Apus apus*	16/07/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Red List

Common Name	*Scientific Name*	Date of Last Record*	Designation
Common Wood Pigeon	*Columba palumbus*	16/04/2023	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex II Section I and Annex III Section I Bird Species Birds of Conservation Concern Green List
Dunlin	*Calidris alphina*	20/11/2016	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex I Bird Species Birds of Conservation Concern Red List
Dunnock	*Prunella modularis*	19/05/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Eurasian Collared Dove	*Streptopelia decaocto*	16/04/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Eurasian Curlew	*Numenius arquata*	20/11/2016	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex II Section II Bird Species Birds of Conservation Concern Red List
Eurasian Jackdaw	*Corvus monedula*	19/05/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Eurasian Jay	*Garrulus glandarius*	29/11/2022	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Eurasian Oystercatcher	*Haematopus ostralegus*	05/12/2022	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Red List
Eurasian Sparrowhawk	*Accipiter nisus*	24/02/2017	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Eurasian Teal	*Anas crecca*	02/01/2023	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex II Section I and Annex III Section II Bird Species Birds of Conservation Concern Amber List

Common Name	*Scientific Name*	Date of Last Record*	Designation
Eurasian Treecreeper	*Certhia familiaris*	06/01/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
European Goldfinch	*Carduelis carduelis*	25/04/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
European Greenfinch	*Carduelis chloris*	24/01/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
European Robin	*Erithacus rubecula*	16/04/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Goldcrest	*Regulus regulus*	06/03/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Great Cormorant	*Phalacrocorax carbo*	31/03/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Great Tit	*Parus major*	19/05/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Grey Heron	*Ardea cinerea*	29/03/2022	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Grey Wagtail	*Motacilla cinerea*	29/11/2022	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Red List
Herring Gull	*Larus argentatus*	20/03/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Hooded Crow	*Corvus cornix*	06/03/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
House Martin	*Delichon urbicum*	21/04/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
House Sparrow	*Passer domesticus*	31/03/2022	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List

Common Name	*Scientific Name*	Date of Last Record*	Designation
Iceland Gull	*Larus glaucoides*	13/03/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Lesser Black-backed Gull	*Larus fuscus*	20/03/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Little Egret	*Egretta garzetta*	12/03/2022	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex I Bird Species Birds of Conservation Concern Green List
Little Grebe	*Tachybaptus ruficollis*	20/03/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Long-tailed Tit	*Aegithalos caudatus*	20/01/2018	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Magpie	*Pica pica*	07/05/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Mallard	*Anas platyrhynchos*	19/05/2020	Wildlife Acts 1976 / 2000 EU Birds Directive Annex II Section I and Annex III and Section I Bird Species Birds of Conservation Concern Amber List
Mandarin Duck	*Aix galericulata*	02/04/2015	Wildlife Acts 1976 / 2000
Mew Gull	*Larus canus*	20/03/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Mistle Thrush	Turdus viscivorus	12/05/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Mute Swan	*Cygnus olor*	20/03/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List

Common Name	*Scientific Name*	Date of Last Record*	Designation
Northern Lapwing	*Vanellus vanellus*	20/11/2016	Wildlife Acts 1976 / 2000 EU Birds Directive Annex II Section II Bird Species Birds of Conservation Concern Red List
Northern Shoveler	*Anas clypeata*	21/12/2022	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex II Section I and Annex III Section III Bird Species Birds of Conservation Concern Red List
Northern Wheatear	*Oenanthe oenanthe*	20/03/2018	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Peregrine Falcon	*Falco columbarius*	25/05/2023	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex I Bird Species Birds of Conservation Concern Green List
Pied Wagtail	*Motacilla alba subsp. yarrellii*	20/03/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Redwing	*Turdus iliacus*	29/11/2022	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Red List
Reed Bunting	*Emberiza schoeniclus*	12/05/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Ring-billed Gull	*Larus delawarensis*	20/03/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Rock Pigeon	*Columba livia*	18/03/2022	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex II Section I Bird Species Birds of Conservation Concern Green List
Rook	*Corvus frugilegus*	19/05/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List

Common Name	*Scientific Name*	Date of Last Record*	Designation
Sand Martin	*Riparia riparia*	28/04/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Sanderling	*Calidris alba*	20/11/2016	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Sedge Warbler	*Acrocephalus schoenobaenus*	12/05/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Song Thrush	*Turdus philomelos*	19/05/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Stonechat	*Saxicola torquata*	20/11/2016	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Tufted Duck	*Aythya fuligula*	20/03/2020	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex II Section I and Annex III and Section II Bird Species Birds of Conservation Concern Amber List
White-throated Dipper	*Cinclus cinclus*	29/03/2022	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Willow Warbler	*Phylloscopus trochilus*	05/04/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Winter Wren	*Troglodytes troglodytes*	16/04/2023	
Yellowhammer	*Emberiza citrinella*	08/12/2014	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Red List
Yellow-legged Gull	*Larus michahellis*	24/05/2022	Wildlife Acts 1976 / 2000
Terrestrial Species			
Eurasian Badger	*Meles meles*	31/12/2014	Wildlife Acts 1976 / 2000
Eurasian Pygmy Shrew	*Sorex minutus*	23/10/2015	Wildlife Acts 1976 / 2000
Eurasian Red Squirrel	*Sciurus vulgaris*	06/03/2023	Wildlife Acts 1976 / 2000

Common Name	***Scientific Name***	**Date of Last Record***	**Designation**
European Otter	*Lutra lutra*	14/12/2022	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex II and IV
West European Hedgehog	*Erinaceus europaeus*	29/06/2022	Wildlife Acts 1976 / 2000
Bat species			
Brown Long-eared Bat	*Plecotus auritus*	08/10/2015	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex IV
Daubenton's Bat	*Myotis daubentonii*	26/08/2021	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex IV
Leisler's Bat	*Nyctalus leisleri*	22/05/2016	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex IV
Natterer's Bat	*Myotis nattereri*	18/07/2022	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex IV
Pipistrelle	*Pipistrellus pipistrellus sensu lato*	22/05/2016	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex IV
Soprano Pipistrelle	*Pipistrellus pygmaeus*	30/09/2016	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex IV
Whiskered Bat	*Myotis mystacinus*	17/07/2022	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex IV
Invasive species			
American Mink	*Mustela vison*	13/07/2016	Invasive Species: High Impact Invasive Species Regulation S.I. 374 (Ireland)
Bank Vole	*Myodes glareolus*	06/07/2016	Invasive Species: Medium Impact Invasive Species
Butterfly-bush	*Buddleja davidii*	04/07/2022	Invasive Species: Medium Impact Invasive Species
Brazilian Giant-rhubarb	*Gunnera manicata*	18/06/2018	Invasive Species: Medium Impact Invasive Species Regulation S.I. 374 (Ireland)

Common Name	***Scientific Name***	**Date of Last Record***	**Designation**
Brown Rat	*Rattus norvegicus*	17/08/2016	Invasive Species: High Impact Invasive Species
Canadian Waterweed	*Elodea canadensis*	24/07/2016	Invasive Species: High Impact Invasive Species
Cherry Laurel	*Prunus laurocerasus*	18/08/2016	Invasive Species: High Impact Invasive Species
Common Broomrape	*Orobanche minor*	13/06/2023	Invasive Species: Medium Impact Invasive Species
Coypu	Myocastor coypus	14/07/2018	Invasive Species: High Impact Invasive Species Regulation S.I. 374 (Ireland)
European Rabbit	Oryctolagus cuniculus	13/07/2015	Invasive Species: Medium Impact Invasive Species
Indian Balsam	Impatiens glandulifera	07/07/2023	Invasive Species: High Impact Invasive Species
Japanese Knotweed	Fallopia japonica	21/12/2020	Invasive Species: High Impact Invasive Species Regulation S.I. 374 (Ireland)
Harlequin Ladybird	Harmonia axyridis	13/05/2023	Invasive Species: High Impact Invasive Species Regulation S.I. 374 (Ireland)
Himalayan Honeysuckle	Leycesteria formosa	01/01/2021	Invasive Species: Medium Impact Invasive Species
House Mouse	Mus musculus	15/02/2015	Invasive Species: High Impact Invasive Species
Rhododendron	Rhododendron ponticum	28/05/2023	Invasive Species: High Impact Invasive Species Regulation S.I. 374 (Ireland)
Red-eared Terrapin	Trachemys scripta	20/03/2020	Invasive Species: Medium Impact Invasive Species
Sycamore	Acer pseudoplatanus	25/10/2021	Invasive Species: Medium Impact Invasive Species
Rose-ringed Parakeet	*Psittacula krameri*	02/10/2024	Invasive Species: High Impact Invasive Species
Three-cornered Garlic	Allium triquetrum	13/05/2016	Invasive Species: Medium Impact Invasive Species
Traveller's-joy	Clematis vitalba	08/10/2020	Invasive Species: Medium Impact Invasive Species
Aquatic species			

Common Name	*Scientific Name*	Date of Last Record*	Designation
Common Seal	*Phoca vitulina*	07/09/2023	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex II
Grey Seal	*(Halichoerus grypus)*	05/12/2022	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex II and IV

4.2 Field Survey

4.2.1 Habitats

The following section provides details of the most up-to-date field-based assessment that was undertaken for the Site on 7th September 2023, 27th May 2024 and 27th August 2024. A description of the habitats and features of ecological significance are outlined below and illustrated in Figure 4-3.

Amenity Grassland (GA2)

The majority of the Site consists of an area of amenity grassland, with scattered trees within the centre and south of the amenity grassland onsite. Species present within the amenity grassland include perennial ryegrass (*Lolium perenne*), ribwort plantain (*Plantago lanceolata*), ragwort (*Jacobaea vulgaris*), dandelion (*Taraxacum officinale*), field buttercup (*Ranunculus acris*), cut-leaved crane's bill (*Geranium dissectum*), fringed willowherb (*Epilobium ciliatum*), bitter dock (*Rumex obtusifolius*), lesser knapweed (*Centaurea nigra*), clover spp. (*Trifolium sp.*) and bird's-eye speedwell (*Veronica persica*).

Hedgerow / Treeline (WL1 / WL2)

The north and eastern boundary of the Site consists of a hedgerow / treeline. This extends along the boundary of the scrub area in the northeast section. The species present include sycamore (*Acer pseudoplatanus)*, lime (*Tilia x europaea*), pedunculate oak (*Quercus robur*), ash (*Fraxinus excelsior)*, holly (*Ilex aquifolium)*, silver birch (*Betula pendula*), white poplar (*Populus alba*), grey willow (*Salix cinerea subsp. Oleifolia),* elder (*Sambucus nigra)*, cypress lawson (*Chamaecyparis lawsoniana*), damson *(Prunus insititia),* rowan, (*Sorbus aucuparia*), New Zealand broadleaf (*Griselinia littoralis*), butterfly bush (*Buddleia davidii*), silver maple (*Acer saccharinum*), sessile oak (*Quercus petraea*), plum (*Prunus domestica*) and horse chestnut (*Aesculus hippocastanum*).

The understory comprises bramble *(Rubus fruticosus),* herb-robert (*Geranium robertianium),* ribwort plantain, lords and ladies (*Arum maculatum*), stinging nettle (*Urtica dioica*), dogwood (*Cornus sanguinea*), bitter dock (*Rumex obtusifolius),* ivy *(Hedera helix),* fringed willowherb, common sorrel (*Rumex acetosa*), cleavers (*Galium aparine*), common bent (*Agrostis capillaris*) and Himalayan cotoneaster (*Cotoneaster simonsii*).

Scrub (WS1)

The area in the northwest corner of the Site is surrounded by a hedgerow / treeline and fence. This area consists predominantly of brambles. Other species present include gorse (*Ulex europaeus*), stinging nettle, ivy, winter heliotrope (*Petasites pyrenaicus*), bitter dock, common rush (*Juncus effusus*), butterfly bush, creeping buttercup (*Ranunculus repens*), cleavers (*Galium aparine*), dog rose (Rosa canina), fringed willowherb (*Epilobium ciliatum*), spear thistle (*Cirsium vulgare*), creeping thistle (*Cirsium arvense*), field thistle (*Cirsium discolor*) and field mustard (*Rhamphospermum arvense*).

Treeline / Scattered Trees and Parkland (WL2 / WD5)

Scattered trees are present within the centre and south of the amenity grassland onsite. Species present among the scattered trees include field maple (*Acer campestre*), silver birch (*Betula pendula*), hawthorn (*Crataegus monogyna*), elder (*Sambucus nigra*), sycamore ash, grey willow, hornbeam (*Carpinus betulus*), red maple (*Acer rubrum*), horse chestnut and holly.

Recolonising bare ground (ED3)

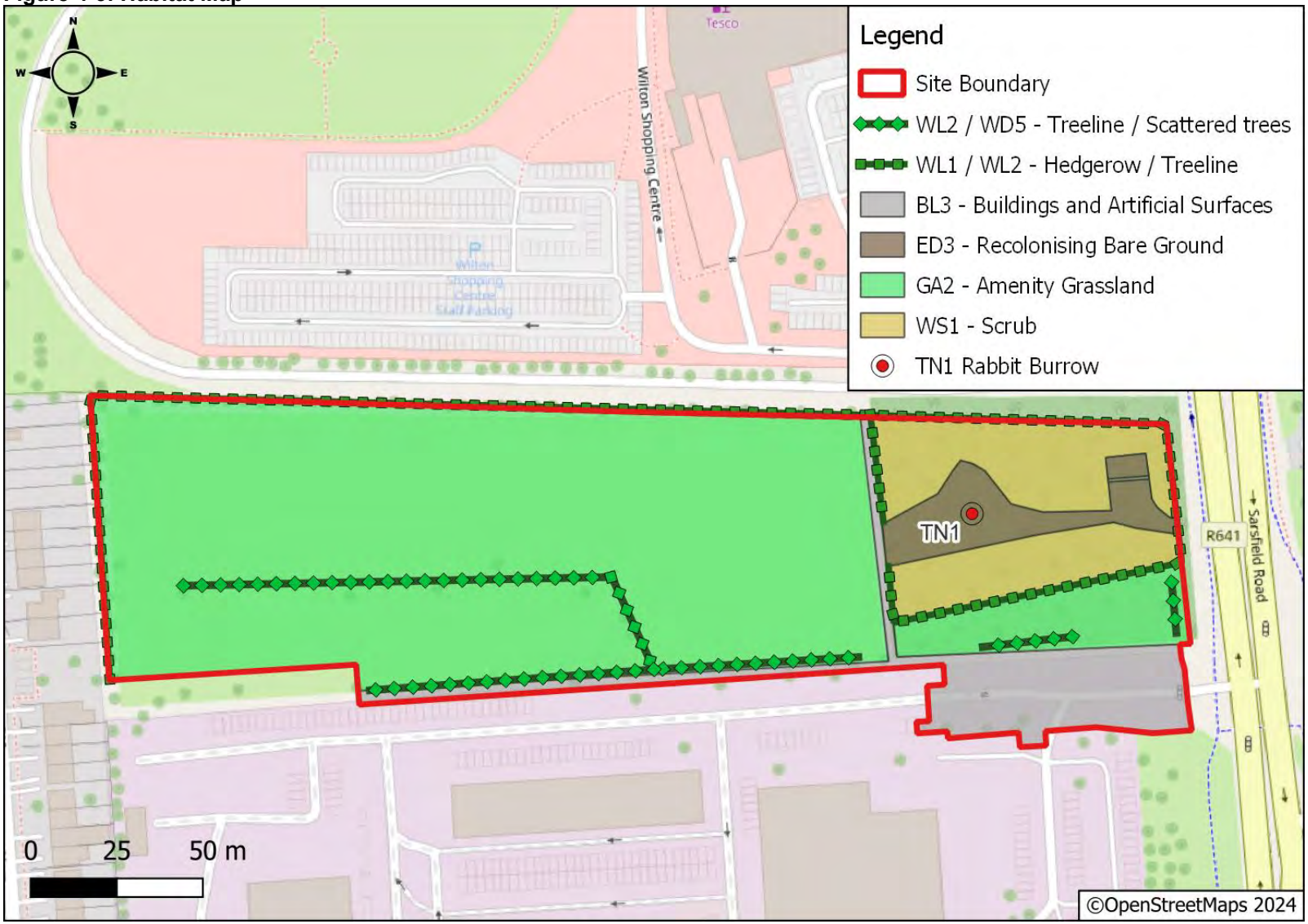
An area of recolonising bare ground is present inside the area of scrub in the northeast corner of the Site. This area was created to provide an access track to sections of the Site in order to carry out necessary site investigation works. These clearance works were undertaken on 27th May 2024 during the nesting bird season, however, prior to these works taking place the local NPWS officer was consulted and approved the works once no active or disused nests were present in the proposed area of clearance.

Following the clearance works species have recolonised the area. Species present in this area include stinging nettle, spear thistle, creeping buttercup, field thistle, hedge bindweed, scarlet pimpernel, field mustard, ribwort plantain, winter heliotrope, fringed willowherb, common poppy (*Papaver rhoeas*), scarlet pimpernel (*Anagallis arvensis),* field mustard, ribwort plantain, wild radish (*Raphanus raphanistrum*) and hedge bindweed (*Calystegia sepium*),

Buildings and Artificial Surfaces (BL1)

Artificial surfaces, including a road and footpaths, are present in the southern section of the Site. No species of interest were noted here.

Figure 4-3: Habitat Map



4.2.2 Protected / Notable Species

4.2.2.1 Flora

No plant species protected under the Flora Protection Order were recorded onsite.

4.2.2.2 Amphibians

The NBDC held records of amphibians within 2km of the Site over the last 10 years [14]. However, no evidence of amphibians was recorded during the field surveys.

The amenity grassland and areas of scrub have the potential to provide suitable habitat for amphibians during the terrestrial phase of their life cycle. However, there are no suitable waterbodies located onsite or in the vicinity of the Site to support breeding amphibians.

4.2.2.3 Badgers

The NBDC held records of badgers within 2km of the Site within the last 10 years [14].

However, no evidence of badgers, in the forms of feeding remains, scat, snuffle holes or sett entrances, were recorded during the habitat survey.

4.2.2.4 Bats

The Site is located within a predominantly urban and built-up area, but the Site itself is comprised of amenity grassland, scattered trees and hedgerow / treelines, and some areas of the Site are dark at night and subject to low levels of light spillage from surrounding areas.

As per the NBDC landscape suitability metric, the Site and surrounding area was considered to be of High suitability for bats (Landscape Suitability Metric Score: 28 - 36 [14]. Additionally, the NBDC held records of seven of the nine resident Irish bat species within 2km of the Site in the past 10 years, Daubenton's bat, Leisler's bat, Natterer's bat, common pipistrelle, soprano pipistrelle, whiskered bat and brown long-eared bat [14].

Four targeted bat surveys were undertaken at the Site – one in 2023 and three in 2024. A small soprano/ common pipistrelle night/feeding roost was identified in some of the trees onsite, which will be retained as part of the Proposed Development, as well as in two bat boxes attached to trees onsite. The bat surveys also identified bats using the trees in the centre of the Site as flight paths and also foraging over areas of grassland and trees onsite. The following species were recorded as a result of the bat surveys onsite:

- Soprano pipistrelle;
- Common pipistrelle;
- Nathusius' pipistrelle;
- Leisler's bat; and,
- Brown long-eared bat.

All species recorded are Annex IV species under the EU Habitats Directive and all have a favourable conservation status in Ireland. The lesser horseshoe bat and *Myotis* species were not recorded during the surveys. It was concluded that the Site was of high local importance for foraging and commuting bats, and of high local importance for roosting bats.

Please refer to Appendix A – Bat Report for full details of the results of the bat surveys undertaken onsite.

4.2.2.5 Birds

Wintering Bird Surveys

Table 4-4 contains a summary of the birds recorded onsite and flying over the Site and their status according to the Birds of Conservation Concern in Ireland ('BoCCI'), which is the third assessment of the status of all regularly occurring birds on the island of Ireland [1].

During the wintering bird surveys, a total of 12 species were recorded:

- Five Green-listed BoCCI non-Annex I species– blackbird, hooded crow, magpie, rook and wood pigeon;
- Seven Amber-listed BoCCI, non-Annex I species were recorded – black-headed gull, buzzard, common gull, herring gull, lesser black-backed gull, little gull and starling; and,
- No Red-listed BoCCI, non-Annex I species were recorded.

Of these species, three were a designated species under the Cork Harbour SPA - black-headed gull, common gull, and lesser black-backed hull. In addition, two species can be classified under the designation of '*Wetland and Waterbirds [A999]'* under the Cork Harbour SPA - herring gull and little gull.

Full details of the results are provided in the Bird Survey Report attached as Appendix B.

Breeding Bird Survey

The hedgerows / treelines and scrub onsite are considered suitable for a range of nesting birds. Table 4-5 contains a summary of the birds recorded onsite and their status according to the Birds of Conservation Concern in Ireland ('BoCCI'), which is the third assessment of the status of all regularly occurring birds on the island of Ireland [1].

A total of 18 species were recorded onsite or were flying over the Site and immediate vicinity of the Site. Of these species, eight were observed displaying territorial behaviours and were classified as '*possibly breeding*' and four species were identified as '*confirmed breeding*.'

Of the 18 species that were recorded:

- 14 Green-listed BoCCI non-Annex I species – blackbird, blackcap, blue tit, chaffinch, dunnock, goldfinch, great tit, hooded crow, magpie, robin, rook, song thrush, wood pigeon and wren;
- Three Amber-listed BoCCI, non-Annex I species were recorded – goldcrest, swallow and starling;
- One Amber BoCCI listed Annex species was recorded - mallard; and,
- No Red-listed BoCCI, non-Annex I species were recorded.

It should be noted that none of these species recorded were classified as designated species under the Cork Harbour SPA. However, one species that was recorded flying over the Site, mallard, can be classified as '*Wetland and Waterbird [A999]'* which is designated under the Cork Harbour SPA.

Of the species recorded six were classified as '*Confirmed Breeding,*' blackbird, goldcrest, hooded crow, rook, woodpigeon and wren. In addition, nine other species were classified as '*Possibly Breeding'* and three species were classified as non-breeding. No Red-listed BoCCI were recorded.

Full details of the results are provided in the Bird Survey Report attached as Appendix B.

4.2.2.6 Otters

The NBDC held records of otter within 2km of the Site over the past 10 years [14].

However, the Site is not considered to be a suitable habitat for otter given the absence of any suitable waterbodies or drainage ditches for commuting or foraging purposes. It is reasonable to conclude that otters will not utilise the Site.

4.2.2.7 Hedgehogs and Pygmy Shrews

Hedgehogs and pygmy shrews are a common and widespread species that typically occur in scrub, woodland, and rank grassland habitats. The NBDC held records of hedgehogs and pygmy shrews within 2km of the Site [14].

The hedgerow / treeline bounding the amenity grassland and the scrub onsite have the potential to support foraging and commuting hedgehogs. Although no direct evidence of this species was recorded onsite, it should be noted that a number of small mammal paths were identified that may be utilised by this species.

4.2.2.8 Invasive Species

The NBDC held records of high-impact invasive species regulated under European Union (Invasive Alien Species) Regulations 2024 (S.I. No. 374/2024) [29] such as Brazilian giant-rhubarb, Canadian waterweed, Indian balsam, Japanese knotweed and rhododendron within 2km of the Site [14].

Butterfly bush and winter heliotrope were identified within the area of scrub in the northeastern section of the Site. However, these are not subject to restrictions under European Union (Invasive Alien Species) Regulations 2024 (S.I. No. 374/2024) [29].

No other invasive species were identified onsite.

4.2.2.9 Other Species

No other species of conservation concern were noted onsite or were contained in the NBDC records. However, a number of small mammal holes (see TN1 on Figure 4-3) and rabbit droppings and sightings were recorded onsite. The hedgerows / treelines, scrub and the amenity grassland onsite provide suitable foraging habitats and connectivity to the wider landscape for a range of commonly occurring species such as foxes, field mice and rabbits.

5 CHARACTERISTICS AND POTENTIAL IMPACTS OF THE PROPOSED WORKS AND MITIGATION MEASURES

5.1 Sensitive Design

Specialist ecological input was a key element of the proposed design, to ensure that the design layout of the Proposed Development is sensitive to valued ecological features that occur or may occur within the Site and the surrounding landscape.

In order to minimise the adverse effects of the Proposed Development on biodiversity and, where possible, enhance the ecological value of the Site, a range of environmental measures have been incorporated into the project at the design stage. The key measures relevant to biodiversity for this project have been detailed below.

- A comprehensive Landscape Plan has been developed for the Proposed Development, which includes a large public realm component based on the retention of mature trees and the orientation of the development. The mature trees to be retained as part of the Proposed Development were identified to be supporting roosting bats during the bat surveys undertaken in 2023 and 2024. For full details, refer to the Landscape Strategy Report prepared by Park Hood Chartered Landscape Architects and Section 5.4 below;
- All vegetation removal required onsite will be undertaken in accordance with relevant legislation to avoid potential disturbance to nesting birds. These works will be undertaken outside the period of 1st of March to 31st of August; and,
- All boundary trees that are to be retained will be protected from unnecessary damage. An arboricultural report and protection plan has been prepared by John Morris Arboricultural Consultants and has been submitted as part of this planning application.

5.2 Identification of Potentially Significant Effects on Identified Receptors

Based on the methodology that is set out in Section 2.4, Table 5-1 sets out the findings of the evaluation of important and legally protected receptors. Each receptor is assessed and a scoping justification for each receptor is provided for the construction and operational phases of the Proposed Development.

Table 5-1: Valuation of Potential Ecological Receptors

Potential Biodiversity Receptor	Relevant Legislation	Valuation	Scoping Justification	Screening Result
Protected Sites				
European Designated Sites	European Communities (Birds and Natural Habitats) Regulations 2011 (as amended)	Internationally designated sites for conservation.	A Stage 1: Appropriate Assessment has been prepared as part of the overall planning application in line with policies Objective 10.7 of the CCDP [40]. The AA concluded that the Proposed Development would not cause any adverse effects on any European designated sites or any of their designated features of interest provided the design measures incorporated within the AA are adhered to and that progression to Stage 2 of the Appropriate Assessment process (i.e., Natura Impact Statement) was not considered necessary. The AA submitted as part of the planning application provides full details on the assessment of impacts to European designated sites and concluded that: *…..following an examination, analysis, and evaluation of the relevant information, that the Proposed Development, either alone or in-combination with other plans, projects or land uses, have not had and will not have any direct or indirect significant effects on any European sites in light of the site's conservation objectives and best scientific knowledge, and no reasonable scientific doubt exists in relation to this conclusion*.	European Designated Sites have been screened out for further consideration. Refer to the AA report submitted as part of this planning application for further details.
Nationally Designated Sites	Wildlife Act 2000 (as amended)	Nationally designated sites for conservation.	Nationally designated conservation sites within 5km of the Site were investigated as per Objective 6.22 of the CCDP [40]. There are no NHAs within 5km of the Site. However, there are four pNHAs within 5km of the Site.	Nationally Designated Sites have been screened out from further consideration
Habitats				
Amenity Grassland (GA2)	N/A	Low Local Value	This is a common habitat type throughout Ireland and provides limited ecological value. This is one of the main habitats that will be lost; however, as it is not of significant conservation value, the loss is not considered significant. Therefore, the impact of the Proposed Development on this habitat is not significant and this receptor has been screened out from further consideration.	Amenity Grassland has been screened out from further consideration
Scrub (WS1)	Wildlife Act 2000 (as amended)	Low Local Value	This is a common habitat throughout Ireland. However, it does offer suitable cover and protection for passerine birds. This habitat will be lost as a result of the Proposed Development.	Scrub habitats have been screened in for

Potential Biodiversity Receptor	Relevant Legislation	Valuation	Scoping Justification	Screening Result
			The majority of this habitat occurs in the northeast section of the Site. The area of scrub to be removed as part of the proposed works is not considered to be of high conservation value though it does have the potential to support protected / notable species, such as nesting birds. Therefore, further consideration will be given to this habitat. Restrictions apply with regards to the time of year in which vegetation can be cut (see Nesting Birds in Sections 5.3.1.3 below). Therefore, any vegetation clearance works will need to take account of protected species. Therefore, scrub has been screened in for further consideration. It should be noted that the Landscape Strategy Report (Attached as Appendix C) provides details of additional tree and shrub planting that will compensate for the loss of any vegetation removed.	further consideration
Hedgerows (WL2) / Treelines (WL1)	Wildlife Act 2000 (as amended)	High Local Value	Vegetation removal has been proposed as part of the Proposed Development, however compensatory planting is proposed (See Landscape Strategy Report attached as Appendix C). Additionally, measures are also required to protect any retained vegetation onsite or within the immediate vicinity of the Site from damage, refer to Section 5.2.1.2. The majority of the hedgerows/treelines throughout the Site will be removed to facilitate the Proposed Development. However, a number of Category A trees in the east of the Site will be retained and protected throughout the construction and operational phase of the Proposed Development. Full details can be found in the Arboricultural Assessment submitted as part of the overall planning application. All vegetation removal onsite will need to account for notable / protected species such as nesting birds and roosting bats. Refer to Section 5.3.1.3 for further details. It should be noted that a detailed Landscape Strategy Report has been prepared for the Proposed Development (attached as Appendix C). The Landscape Strategy Report provides details of additional tree planting alongside shrubs, grasses and flowers to compensate for the loss of any vegetation removed.	Hedgerows and Treelines have been screened in for further consideration
Buildings and Artificial Surfaces (BL3)	N/A	Low Local Value	The artificial surface onsite comprises of footpaths on the Site, which will be replaced as part of the Proposed Development. The impact of the Proposed Development on this habitat is not significant and this receptor has been screened out from further consideration.	Buildings and Artificial surfaces have been screened out for further consideration

Potential Biodiversity Receptor	Relevant Legislation	Valuation	Scoping Justification	Screening Result
Flora and Fauna				
Flora	Flora (Protection) Order 2022 (S.I. No. 235/2022)	N/A	No plant species protected under the Flora Protection Order were noted onsite. Overall, the impact of the Proposed Development on protected flora is considered unlikely to be significant. Therefore, this receptor has been screened out from further consideration.	Flora species have been screened out from further consideration
Amphibians	Wildlife Act 2000 (as amended) EU Habitats Directive Annex V	Low Local Value	The Site is not considered to be of significant value to amphibians given the fact that no suitable waterbodies / drainage ditches for breeding amphibians were recorded. However, should any amphibians be discovered onsite during the construction works, the ECoW will be consulted for advice and any works that have the potential to impact on amphibians will cease until appropriate mitigation measures are in place. However, no species-specific mitigation is required at this stage and this receptor has been screened out from further consideration.	Amphibians have been screened out from further consideration
Bats	Wildlife Act 2000 (as amended) EU Habitats Directive Annex IV	High Local Value	<u>Roosting Bats</u> The habitat survey identified eight trees onsite with bat roost potential features. These trees were surveyed for bat emergence during four targeted bat surveys undertaken at the Site in 2023 and 2024. A small soprano / common pipistrelle night / feeding roost was identified in trees onsite which will be retained as part of the Proposed Development, as well as within two bat boxes onsite, further details can be found Appendix A. <u>Flight Paths and Foraging</u> To facilitate the Proposed Development, the majority of the hedgerows/treelines throughout the Site will be removed to facilitate the Proposed Development. The targeted bat surveys undertaken onsite identified bats using these trees for foraging and as flight paths. Therefore, mitigation measures are required to ensure that foraging and commuting bats will not be impacted by this vegetation removal, installation of lighting onsite and the change in land use. However, a number of Category A trees in the east of the Site will be retained and protected throughout the construction and operational phase of the Proposed Development. <u>Lighting</u> Bats are averse to excessive lighting, subsequently, impacts could occur as a result of an inappropriate lighting strategy. Therefore, it is important that lighting installed for the	Bats have been screened in for further consideration

Potential Biodiversity Receptor	Relevant Legislation	Valuation	Scoping Justification	Screening Result
			Proposed Development will be completed with sensitivity for local wildlife while still providing the necessary lighting for security and human usage. During the bat surveys undertaken at the Site, the illuminance levels onsite were recorded. The Site ranges from complete darkness (0lux) to very brightly lit (73lux). The area in the east of the Site where a small soprano pipistrelle roost was identified was mostly dark (between 0lux and 7lux). However, bats were identified foraging in an area close to where lighting levels were 38lux, suggesting that bats are adapted to a certain level of lighting onsite. However, mitigation measures are required to ensure that bats are not impacted by additional lighting installed onsite and are still able to use the Site for foraging and as a flight path. Following consultation with Cork City Council and the NPWS, a revised Outdoor Lighting Report has been prepared by EDC Mechanical & Electrical Consulting Engineers and submitted as part of this planning application. The location of the soprano/common pipistrelle night/feeding roost has been designated as an ecologically sensitive area, and this area will remain mostly in darkness, which will allow roosting, foraging and commuting bats to use this area. All lighting installed will be directional downward lighting, but there will still be some light spillage onto other areas identified as important flight path and foraging habitat for bats. Therefore, mitigation measures are required to ensure that bats and other nocturnal species are not adversely impacted by the installation of lighting onsite.	
Badgers	Wildlife Act 2000 (as amended)	Low Local Value	Given the absence of any signs of badger or setts onsite, it is not considered that the loss of any of the habitats onsite will have a significant effect on the species. Therefore, this species has been screened out from further consideration. Nonetheless, standard mitigation measures will be implemented onsite for mammals; refer to section 5.3.1.3.	Badgers have been screened out from further consideration
Birds	Wildlife Act 2000 (as amended)	High Local Value	<u>Breeding Birds</u> The treelines / hedgerows along the Site and scrub are considered to provide suitable nesting habitat for breeding bird species, particularly the mature treeline to be retained to the south of the area of scrub. Therefore, mitigation measures will be put in place for this species. It should be noted, however, that given the level of use of the Site, it is reasonable to conclude that birds will favour the hedgerows/treelines further away from Sarsfield Road. Studies have shown that traffic noise can result in acoustic interference or masking of bird songs and that bird abundance, occurrence and species richness is reduced near roads so the loss of these hedgerows / treelines is not considered to be significant [41] [42] [43]. Additionally, the sections of mature treeline to be retained to the east of the Site, as shown in the Landscape	Birds have been screened in for further consideration

Potential Biodiversity Receptor	Relevant Legislation	Valuation	Scoping Justification	Screening Result
			Strategy Report, are known to support breeding birds and active nests were recorded within these sections. Any temporary disturbance arising from the proposed construction works is not considered to be significant given the nature of the Site and associated use. It is considered that any birds along the Site would be habituated to high levels of noise. In addition, there are alternative habitats within the wider area for any birds affected by the proposed works to disperse into. Nonetheless, precautionary mitigation will be implemented to avoid any potential impacts to breeding birds, refer to Section 5.3.1.3 below for further details. <u>Wintering Birds</u> It is not considered that the Site is of importance for wintering bird species based on the habitats present onsite and the results of the wintering bird surveys. Additionally, it is considered the levels of disturbance at the ESBN site to the south of the Site and Wilton Shopping Centre to the north of the Site would deter any designated birds utilising the site due to levels of vehicular traffic and anthropogenic activity. Wintering birds and wildfowl species tend to prefer habitats similar to those in Cork Harbour SPA such as mudflats, salt marshes and wet grassland, none of which are located within the Site. These habitats are separated from the Site by Cork City and its suburbs along with associated road infrastructure.	
Otter	Wildlife Act 2000 (as amended)	Low Local Value	No otter activity or suitable habitat was noted within the Site boundary. The NBDC held records of otter within 2km of the Site in the last ten years, however, it is considered unlikely that otters would utilise the Site given the lack of connectivity to suitable habitats and the location of the Site in a built up busy area. It can be concluded that the Site is of no value to otter.	Otter have been screened out of further consideration
Hedgehogs and Pygmy Shrews	Wildlife Act 2000 (as amended)	Low Local Value	Given the presence of suitable habitats onsite and within the wider area for hedgehogs and other nocturnal and terrestrial species, standard protection measures for these species will be incorporated into the construction, refer to Section 5.3.1.3.	Hedgehogs and Pygmy Shrews have been screened in for further consideration

Potential Biodiversity Receptor	Relevant Legislation	Valuation	Scoping Justification	Screening Result
Invasive Species	N/A	N/A	Only medium impact species such as Butterfly Bush and Winter Heliotrope, that are not currently regulated under S.I. 374 were observed onsite. Care will be taken not to spread the invasive species present onsite. Therefore, standard mitigation measures will be implemented in order to ensure no invasive species are introduced during the construction phase (see Section 5.3.1.3) in line with Strategic Biodiversity Goal 8 Objective 6.26 of the CCDP [8].	Invasive Species have been screened in for further consideration
Other Species	N/A	N/A	No other species of conservation interest were noted onsite. However, small mammal holes that would support rabbits were identified onsite. Additionally, suitable habitats onsite and within the adjacent lands for common species such as foxes and other terrestrial mammals, standard protection measures for these species will be incorporated into the works in line with strategic Biodiversity Goal 2 and Objective 6.25 of the CCDP [8].	Other Species have been screened in for further consideration

5.2.1 Summary of Potential Impacts

Following a detailed assessment, the following receptors were identified as having the potential to be impacted by the Proposed Development and were brought forward for further consideration:

- Scrub (WS1);
- Hedgerows (WL2) / Treelines (WL1);
- Bats;
- Birds;
- Hedgehogs and Pygmy Shrews;
- Invasive Species; and,
- Other species.

As per the scoping justification outlined in Table 5-1, further consideration was required for each of the receptors listed above in order to develop appropriate mitigation to protect these receptors and avoid impacts arising from the Proposed Development refer to Section 5.2 below for further details.

5.3 Mitigation Measures

5.3.1 Construction Phase

During the Construction Phase, all works will comply with all relevant legislation and best practice to reduce any potential environmental impacts. A revised CEMP will be prepared by the appointed main contractor prior to the commencement of any construction works and will be submitted to the planning authority in advance of works commencing.

5.3.1.1 Ecological Monitoring

The following mitigation measures will be incorporated and adhered to in order to ensure that the proposed works do not result in any contravention of wildlife legislation:

- All activities will comply with all relevant legislation and best practice to reduce any potential environmental impacts. The mitigation measures detailed within this EcIA will be fully adhered to;
- The Site manager shall ensure that all personnel working onsite will be trained and made aware of the mitigation measures detailed within this EcIA;
- An ECoW will inspect the Sites in advance of works commencing and will undertake Site inspections as required during the works to ensure that they will be completed in line with the mitigation measures detailed within this EcIA and the CEMP;
- If protected or notable species are encountered during operations at the Site, the ECoW will be contacted for advice; and,
- In advance of works, all Site personnel will receive a toolbox talk regarding notable and protected species. Everybody working onsite must understand the role and authority of the ECoW.

5.3.1.2 Protection Measures for Trees and Root Systems

An arboricultural report and protection plan has been prepared by John Morris Arboricultural Consultants and has been submitted as part of this planning application. The report outlines a number of preliminary measures to protect existing trees and root systems that are to be retained as part of the Proposed Development. These measures include protective fencing,

ground protection measures, excavation measures and root protection measures. However, these measures will need to be agreed upon with all members of the construction team management prior to the commencement of works and approved by the Planning Authority.

5.3.1.3 Protection Measures for Species

Bats

In order to ensure that vegetation clearance works in relation to the Proposed Development do not have significant impacts on bats, the following construction procedures and mitigation measures will be implemented:

- In advance of construction commencing, updated bat inspections will be required to confirm the presence / absence of roosting bats within the trees that will be removed as part of the Proposed Development;
- The felling of trees with suitable roosting features will be carried out under the supervision of the ECoW and will be felled using hand tools only;
- The ECoW will visually inspect the trees following the felling for the presence of bats;
- Felled trees should be pushed gently to allow potential bats within to become active;
- Felled trees should then be left in place for at least 24 hours to allow bats to escape before removal offsite;
- If bats were to be found to be roosting within the trees, further measures will be considered in order to protect bats against disturbance and the NPWS will be consulted for advice and a derogation licence will be obtained if required; and,
- The management and removal of trees at the Site will be undertaken in a systematic way to ensure that retained trees will not be damaged by the works.

Proposed Lighting

Following consultation with the NPWS and Cork City Council, EDC Mechanical & Electrical Consulting Engineers have produced a revised Outdoor Lighting Report that is submitted as part of the overall planning application.

In the ecological sensitive area of the Site (the location of the soprano/common pipistrelle night/feeding roost) on page 9 of the Outdoor Lighting Report the illuminance levels have been calculated as:

- A minimum of 0.26 lux(lx);
- A maximum of 4.72lx; and,
- An average of 1.0lx.

Full details of the lighting plan can be found in the Outdoor Lighting Report submitted as part of the planning application and the bat report attached as Appendix A.

A full impact assessment and relevant mitigation measures for bats are presented in the Bat Survey Report attached as Appendix A.

Breeding Birds

In order to ensure that no disturbances occur to breeding birds that may potentially use the Site or the adjacent lands, the following mitigation measures will be put in place:

- Vegetation clearance works will take place outside the breeding bird season (1st March to 31st August). This is as per Section 40 of the Wildlife Act 1976, as amended by Section 46 of the Wildlife (Amended) Act 2000, which states that the cutting, grubbing, burning or destruction by other means of vegetation growing on uncultivated

lands or hedgerows or ditches will be restricted during the nesting and breeding seasons for birds and wildlife;

- In the event that demolition or vegetation clearance works need to be undertaken within the main breeding season, the following measures will be implemented:
    - The project ECoW will undertake appropriate breeding bird surveys to identify any nesting birds within the Site;
    - The project ECoW will consult with the NPWS;
    - Prior to vegetation clearance on the Site, the project ECoW will inspect the Site; and,
    - All vegetation removal will be undertaken in a systematic manner under the strict supervision of the ECoW.
- In the unlikely event that birds nest within the active working area during the works, all works will cease with immediate effect and will not resume until the project ECoW has been consulted.

Terrestrial Mammals

As outlined in Section 4.2, the onsite habitats have features that have the potential to support sheltering, foraging and commuting mammals such as badger, foxes and hedgehogs. Therefore, in order to ensure that the works in relation to the Proposed Development will not have significant impacts on terrestrial mammals, general construction procedures and mitigation measures will be undertaken. These mitigation measures are in line with the NRA (now TII) guidance for badgers and Objectives 6.23 and 6.25 of the CCDP [8]. These include the following measures:

- Should construction works be required outside of daylight hours, the appointed project ECoW will be consulted as required;
- All vegetation clearance will be undertaken in a systematic way to allow any potential species that may be utilising these areas to disperse naturally as works progress;
- New drainage infrastructure will be laid in sections and backfilled;
- Waste will be kept contained in a designated area to avoid animals becoming trapped in litter;
- Where deep excavations will be required onsite, appropriate measures to protect mammals from ingress will be installed; and,
- If unidentified burrows are identified within the works area during construction, the project ECoW will be contacted for advice.

The existing Sarsfield Road experiences a high volume of traffic and therefore, any terrestrial mammals traversing the road and utilising the adjacent agricultural land will be habituated to a high level of noise. The construction works will be short-term, and as terrestrial mammals are highly mobile, it is likely that they will move away from any temporary disturbances. However, to reduce the potential for disturbance to wildlife from noise, the following mitigation measures will be implemented during the construction phase:

- Avoid unnecessary revving of engines and switch off equipment when not required;
- Minimise the drop height of materials;
- Start-up plant and vehicles sequentially rather than all together;
- Review planting equipment onsite to ensure that they are the quietest versions available for the required purpose; and,

- Noise construction works will be limited to 8am to 6pm on the weekdays.

Invasive Species

Medium-impact invasive species Butterfly Bush and Winter Heliotrope were identified within the Site. These species are not currently regulated under the European Union (Invasive Alien Species) Regulations 2024 (S.I. No. 374/2024) [29].

To mitigate against the unintentional introduction of invasive species during construction, the following biosecurity measures will be implemented. These measures are in line with NRA (now TII) *Guidance for the Management of Noxious Weeds and Non-Native Invasive Plant Species* [35]:

- All vehicles, machinery and any other equipment that may be used for the works will be washed prior to its use onsite to prevent the import of plant material and seeds;
- Before machinery or equipment is unloaded at the Site, equipment will be visually inspected to ensure that all adherent material and debris has been removed;
- Any vehicles and machinery that are not clean will not be permitted entry to the Site;
- All materials to be imported to the Site, including additional planting, will be sourced from a reputable supplier and records of all material / supplies to the Site will be maintained; and,
- In advance of works, all site personnel will receive an induction regarding invasive species.

5.4 Ecological Enhancement Measures

5.4.1 Artificial Bat Roost Sites

Given the presence of a small soprano bat roost on the Site, it is proposed to install artificial bat boxes within the Site to provide additional roosting locations within the Site.

Artificial bat boxes will also be erected on suitable mature trees within the Site. Artificial bat boxes can provide vital roosting places in habitats devoid of natural roosting opportunities. Bat boxes can also provide additional suitable roosting habitats for bats in an area.

Bat boxes should be placed in a position sheltered from strong wind and exposed to the sun for part of the day. The boxes will be located in / close to linear features, such as the treelines and placed a minimum of 2m above the ground. The number and location of which will be specified by an ecologist. Figure 5-1 below shows suitable bat roost box examples including a Pole Mounted Bat Box, Bat Box Schwegler 1FF and Vivara Small Bat Box.

The exact location of the bat boxes will be determined by an experienced ecologist after the completion of the proposed works. This is to allow the ecologist to assess the exact conditions that have been created and thus to ensure that the bat boxes are sited in the most appropriate location possible.

Figure 5-1: Suitable Bat Boxes

5.4.2 Bird Boxes

A variety of bird nest boxes designed to attract a variety of nesting bird species will be erected on suitable trees within the Site. The creation of nesting habitat, along with the creation of species rich habitat will encourage an abundance of invertebrate life (a potential food source) will be beneficial to local birds. General bird boxes designed to cater for a variety of species will be used, the number and location of which will be specified by an ecologist. Refer to the examples provided in Figure 5-2.

An example is the 1B Schwelger Nest Box - This nest box will attract a wide range of species and is available with different entrance hole sizes to prevent birds from competing with each other for the boxes.

The exact location of the bird boxes will be determined by an experienced ecologist after the completion of the proposed works. This is to allow the ecologist to assess the exact conditions that have been created and thus to ensure that the bird boxes are sited in the most appropriate location possible. However, it is recommended that bird boxes be facing between north and south-east to avoid strong winds, rain and sunshine. In addition, bird boxes should be tilted slightly forward to ensure that rain runs off the top and there should be a clear flight path to access the nestbox hole. Also, bird boxes with a hole should be placed ca. 2-4m off the ground, whereas open-fronted bird boxes should be placed lower than 2m among dense vegetation where predators will not easily see it.

It should be noted that the distance between nest boxes can vary. Species such as house sparrow and starling have a preference for nesting in colonies and therefore the bird boxes should be placed closer to each other, whereas species robins and tits can be highly territorial and therefore the nest boxes should be separated by a greater distance.

Figure 5-2: Bird Box Examples

6 CONCLUSIONS

Based on the findings of a detailed desk-based study, a review of all the ecological information available for the Site and wider area and field surveys conducted by suitably qualified MOR Environmental Ecologists, it is considered reasonable to conclude the following:

- The Site itself is currently considered to be of low-moderate local ecological value;
- The bat surveys conducted onsite identified a small soprano and common pipistrelle roost onsite. This section of mature trees where the roost is located will be protected as part of the Proposed Development and has been taken into consideration at the design phase of the Proposed Development;
- It is considered that the Proposed Development will not have a negative impact on wintering birds given that they did not utilise the Site during the surveys and there are much more suitable habitats such as mudflats, salt marshes and wet grassland elsewhere;
- The Proposed Development will result in a short-medium term loss of nesting and foraging habitat for breeding birds. However, the implementation of the landscape planting will provide suitable nesting and foraging habitat once it has been established;
- The Proposed Development will not result in any significant impacts on ecological receptors identified both onsite and in the surrounding area following the implementation of appropriate mitigation measures; and,
- The proposed Landscape Strategy Report has been designed to compensate for vegetation removed during Site clearance works.

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APPENDICES

APPENDIX A

April 2025

Bird Report

Proposed Large-Scale Residential Development at LDA Wilton, Sarsfield Road, Cork

On behalf of
The Land Development Agency
('LDA')

MALONE O'REGAN ENVIRONMENTAL

MALONE O'REGAN

QUALITY
I.S. EN ISO 9001:2015
NSAI Certified

Form ES - 04

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Title: Bird Report, Proposed Large-Scale Residential Development at LDA Wilton, Sarsfield Road, Cork, The Land Development Agency ('LDA').

Job Number: E2170

Prepared By: Annie Coady **Signed:** Annie Coady

Checked By: Henry Tennyson **Signed:** Henry Tennyson

Approved By: Amelia Keane **Signed:** Amelia Keane

Revision Record

Issue No.	Date	Description	Remark	Prepared	Checked	Approved
00	19/12/24	Bird Report	Draft	AC	HT	AK
01	20/12/24	Bird Report	Final	AC	HT	AK
02	14/04/25	Bird Report – update landscaping	Final	AC	HT	AK

Bird Report

Proposed Large-Scale Residential Development at LDA Wilton, Sarsfield Road, Cork

The Land Development Agency ('LDA')

LDA Wilton, Sarsfield Road, Co. Cork

Contents

FIGURES

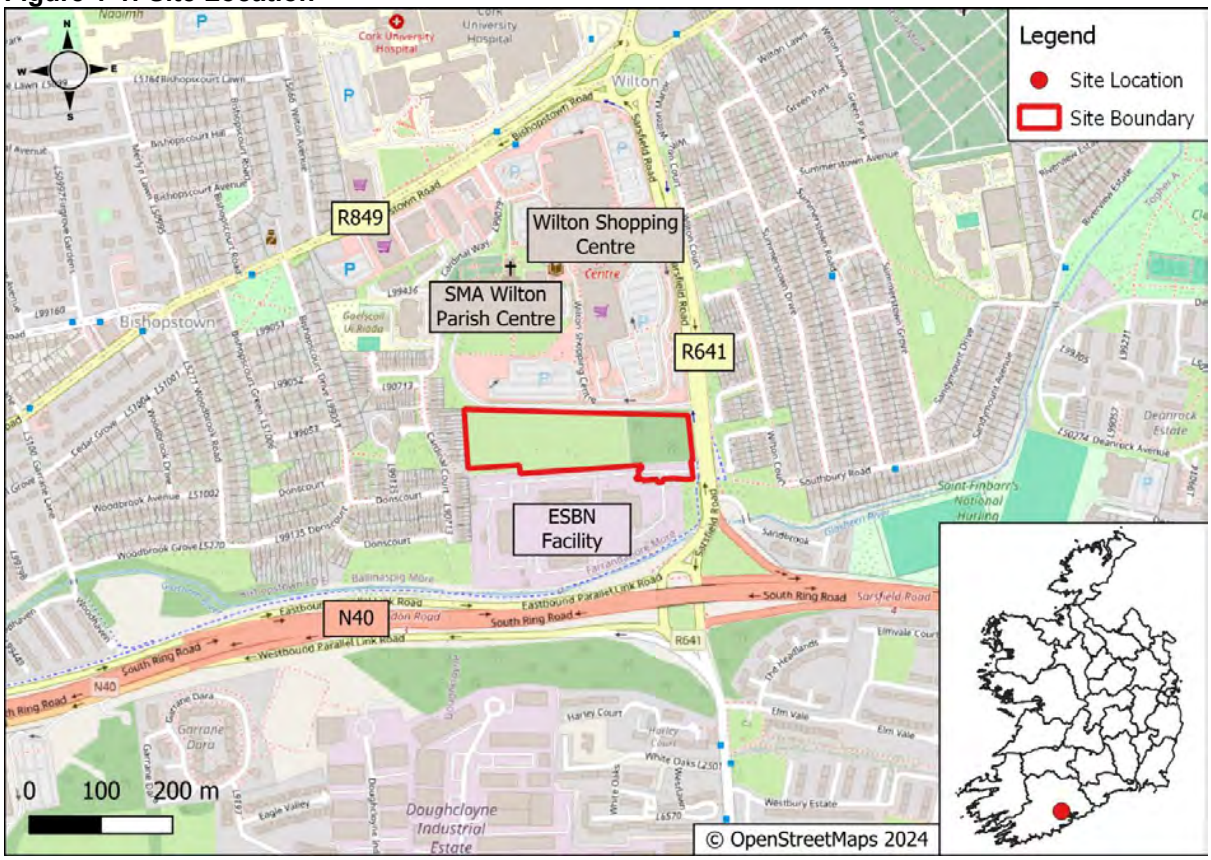
TABLES

1 INTRODUCTION

Malone O'Regan Environmental ('MOR Environmental') was commissioned by Reddy Architecture + Urbanism on behalf of the Land Development Agency ('LDA') ('the Applicant') to present the findings of wintering and breeding bird surveys in respect of a planning application for the construction and operational phases of a proposed Large Residential Development ('LRD') ('the Proposed Development') at Farrandahadore More, Sarsfield Road, Wilton (OS ITM Reference X: 564999, Y: 569684).

The Proposed Development will be located on a site that is circa ('ca.') 2.61 hectares ('ha') in size and is located on a site adjacent to Sarsfield Rd., Wilton, Cork, ca. 3km southwest of Cork City Centre and is shown in Figure 1-1 ('the Site').

Figure 1-1: Site Location



1.1 Relevant Legislation

All wild birds are protected by law under the Wildlife Act 1976 and subsequent amendments. All species are afforded full protection under this Act, which makes it a criminal offence for anyone without a licence to:

- Kill or injure a wild bird;
- Disturb, damage or remove a wild bird nest or eggs; and,
- Disturb any wild bird while at the nest.

In addition to domestic legislation birds are also protected under the EU Birds Directive (2009/147/EC). The Birds Directive provides for a network of sites to protect birds at their breeding, feeding, roosting and wintering areas.

For the purposes of this report, a species was considered to be of 'conservation concern' should it include one or more of the following:

- Annex 1 of the EU Birds Directive;
- Part 1 of the Fourth Schedule of the Wildlife Act, 1976 (as amended);
- Birds of Conservation Concern in Ireland ('BoCCI') Red list; and,
- BoCCI Amber list.

1.2 Objectives

The bird surveys aimed to assess the following:

Bird Habitat Assessment

- To identify, if any, suitable habitat for breeding birds to support important assemblages of wintering birds or support rare or notable species.

Wintering Bird Surveys

- To identify, if any, overwintering bird species utilise the Site;
- To determine the potential of overwintering bird species, especially wetland bird species, to utilise the Site as an inland feeding / roosting Site;
- To assess all potential impacts, if any, of the Proposed Development on overwintering wetland bird species; and,
- To provide additional mitigation measures, should they be required.

Breeding Bird Surveys

- To identify and assess the number of active breeding bird territories within the Site;
- To map active nests, where present, within the Site;
- To evaluate the overall bird community within the Site by recording all behavioural activity of birds;
- Utilise the information in order to identify and assess any areas of the Site that may require special consideration during the breeding bird season;
- Assess all potential impacts, if any, of the Proposed Development on breeding bird species; and,
- Provide additional mitigation measures, should they be required.

1.3 Statement of Authority

This report was checked by Mr. Henry Tennyson, MOR Environmental Consultant – Ecology. Henry is a qualifying member of the Chartered Institute of Ecology and Environmental Management ('CIEEM') with over 4 years' experience working in the environmental consultancy sector. As part of his role, Henry regularly conducts ornithological surveys and assessments for various projects across Ireland and has experience in conducting surveys in line with Best Practice Guidelines.

This report was approved by Ms. Amelia Keane, Senior Environmental Consultant - Ecology. Amelia has a B.Sc. (Hons) Zoology and an M.Sc. Wildlife Conservation and Management. Amelia is a full member of CIEEM and has over 6 years' experience working in ecological consultancy with a specialisation in ornithology. Amelia co-authored the publication '*Conservation conflict: Managing forestry versus hen harrier species under Europe's Birds Directive'* [1]. As part of her role, Amelia regularly conducts ornithological surveys for various projects across Ireland and has experience in conducting vantage point surveys, including for

receptors such as raptors (specifically hen harrier), owls, geese, swans and waders, etc., wintering and breeding farmland bird transect surveys, ground-nesting bird surveys, breeding woodcock surveys, barn swallow surveys, breeding bird habitat suitability assessments, and winter bird habitat suitability assessments. Amelia regularly prepares specialist ornithological assessments and reports.

2 METHODOLOGY

The methodologies used to establish the presence or potential presence of breeding birds and potentially suitable habitats are summarised below.

2.1 Desk Study

A desk-based review of information sources was completed, which included the following sources of information:

- Review of aerial maps of the Site and surrounding area;
- The National Parks and Wildlife Service ('NPWS') website was consulted to obtain the most up-to-date detail on conservation objectives for the European sites relevant to this assessment [2];
- BirdWatch Ireland – The Irish Wetland Bird Survey ('I-WeBS') data, which is coordinated by BirdWatch Ireland and under contract to the NPWS, was reviewed with regard to wintering waterbird population within the vicinity of the Site [3]; and,
- The National Biodiversity Data Centre ('NBDC') website was consulted with regard to species distributions within 2km of the Site [4].

2.1.1 Irish Wetland Bird Survey (I-WeBS)

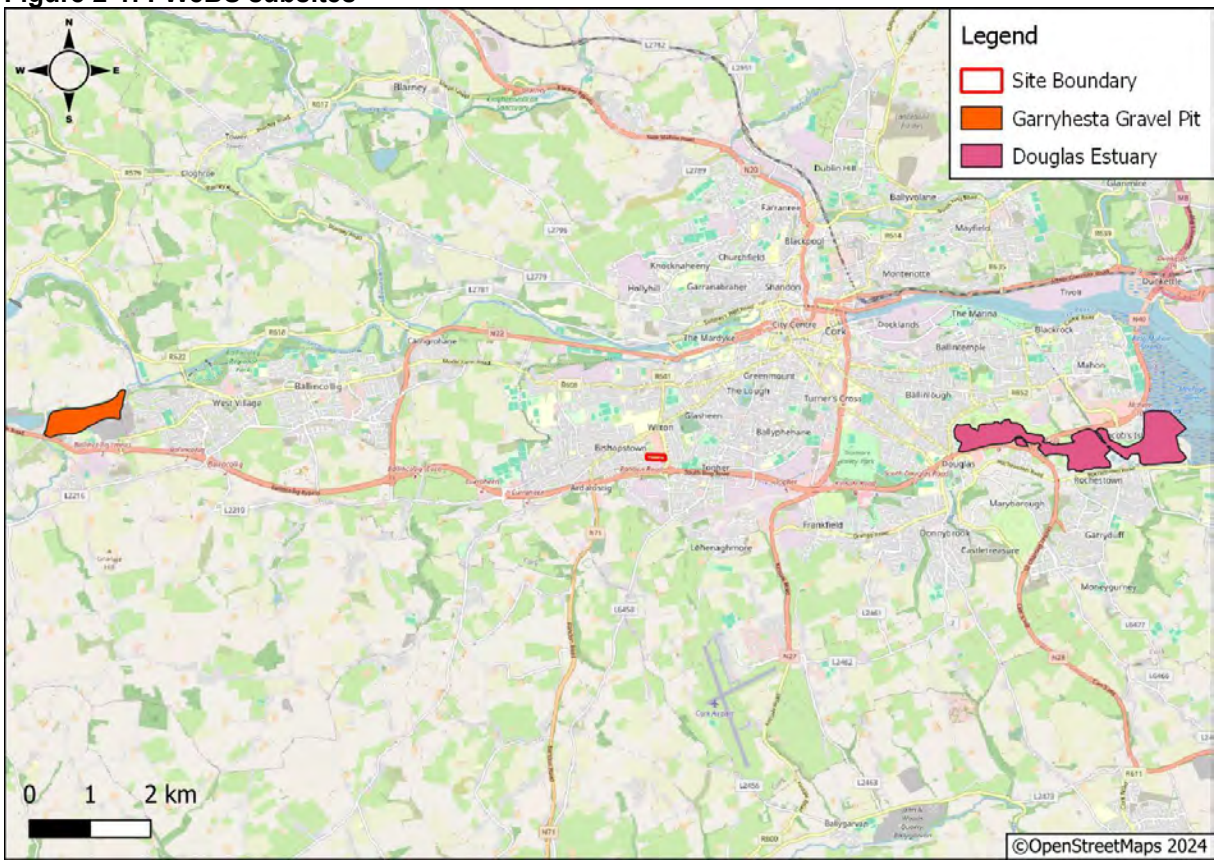
As mentioned above, I-WeBS data was reviewed in order to understand the potential assemblages of wintering bird populations that tend to occur within the vicinity of the Site.

As part of this review, a data request was submitted to the I-WeBS on 26th March 2024. The data request was made for all available data from the nearest subsites to the east and west of the Site, as listed in Table 2-1 below. See Figure 2-1 for the location of the subsites in relation to the Site.

Table 2-1: I-WeBS Data Request

Site Name	Subsite Name	Site Code	Subsite Code
Cork Harbour	Douglas Estuary	0L403	0L488
Garryhesta Gravel Pit	Garryhesta Gravel Pit	0L202	N/A

Figure 2-1: I-WeBS subsites



2.2 Field Studies

2.2.1 Habitat Assessment

A habitat survey was undertaken at the Site by a suitably qualified MOR Environmental Ecologist on the 7th September 2023, using the Fossitt's '*Guide to Habitats in Ireland'* [5]. The habitat survey aimed to identify the extent and quality of habitats present on the Site.

Additional follow-up habitat surveys were carried out on 27th May 2024 and 27th August 2024 by suitably qualified MOR Environmental Ecologists to confirm that the composition of the habitats onsite had not changed.

2.2.2 Bird Habitat Assessment

During the initial habitat survey, the Site was assessed for its potential to provide nesting habitat for breeding birds, to support important assemblages of wintering birds or to support rare or notable species. All field boundaries were walked, and the habitats onsite were fully assessed for their potential to provide suitable nesting, winter roosting habitat or foraging habitat. Areas of scrub habitat and hedgerow / treelines were noted.

Following the desk-based review, the bird habitat assessment and the review of the design of the Proposed Development, it was deemed necessary to undertake specialist wintering and breeding bird surveys onsite.

2.2.3 Winter Bird Survey

Typically, the wintering bird season encompasses mid-September to mid-March.

Winter bird surveys were undertaken by one suitably qualified and experienced MOR Environmental Ecologist on 10th November 2023, 20th December 2023 and 18th January 2024. The date, time and weather conditions of each survey are described in Table 2-2.

These surveys were conducted in accordance with the Winter Farmland Bird Survey methodology provided by the British Trust for Ornithology ('BTO') [6] and, the Wintering and Migratory Wildfowl (especially geese and swans) survey methodology provided by the Scottish Natural Heritage ('SNH') [7].

These surveys were undertaken to determine whether or not wintering birds were utilising the Site and the area within the immediate vicinity of the Site.

A pre-determined vantage point ('VP') was selected that had sufficient views of the Site (see Figure 2-2). All species observed utilising the Site were recorded, and their locations were marked on the maps.

Following the completion of the VP survey, a transect survey was undertaken to flush out any birds that may not have been visible during the VP survey (see Figure 2-2). The transect survey involved walking around the trees in the centre of the Site that blocked the viewshed of the surveyor during the VP survey.

During the surveys, all birds were recorded using a standard British Trust for Ornithology ('BTO') code through sight and sound and optical equipment, such as a telescope and binoculars, to minimise disturbance to wintering birds. The behaviours and activity of the birds were recorded to identify whether the birds were roosting or feeding within the Site. Birds flying over the Site were recorded unless they were clearly associated with the Site (i.e., flushed from the Site).

The locations of all birds were recorded on an overview map of the Site, and the zone in which the birds were located was noted. The zone represents where they were first recorded and are described as follows:

- Boundary – birds located within or adjacent to treelines, hedgerows or other boundary structures;
- Margin – birds located within the outer 20m of fields; and,
- Interior – birds located within the field beyond the margin zone.

The surveys were timed to coincide with the high tide at Cork Harbour, or as close to high tide as possible in suitable weather and lighting conditions, in order to ascertain whether or not overwintering wetland birds within Cork Harbour were utilising the Site for foraging or roosting purposes when favourable habitats (such as mudflats) were inaccessible.

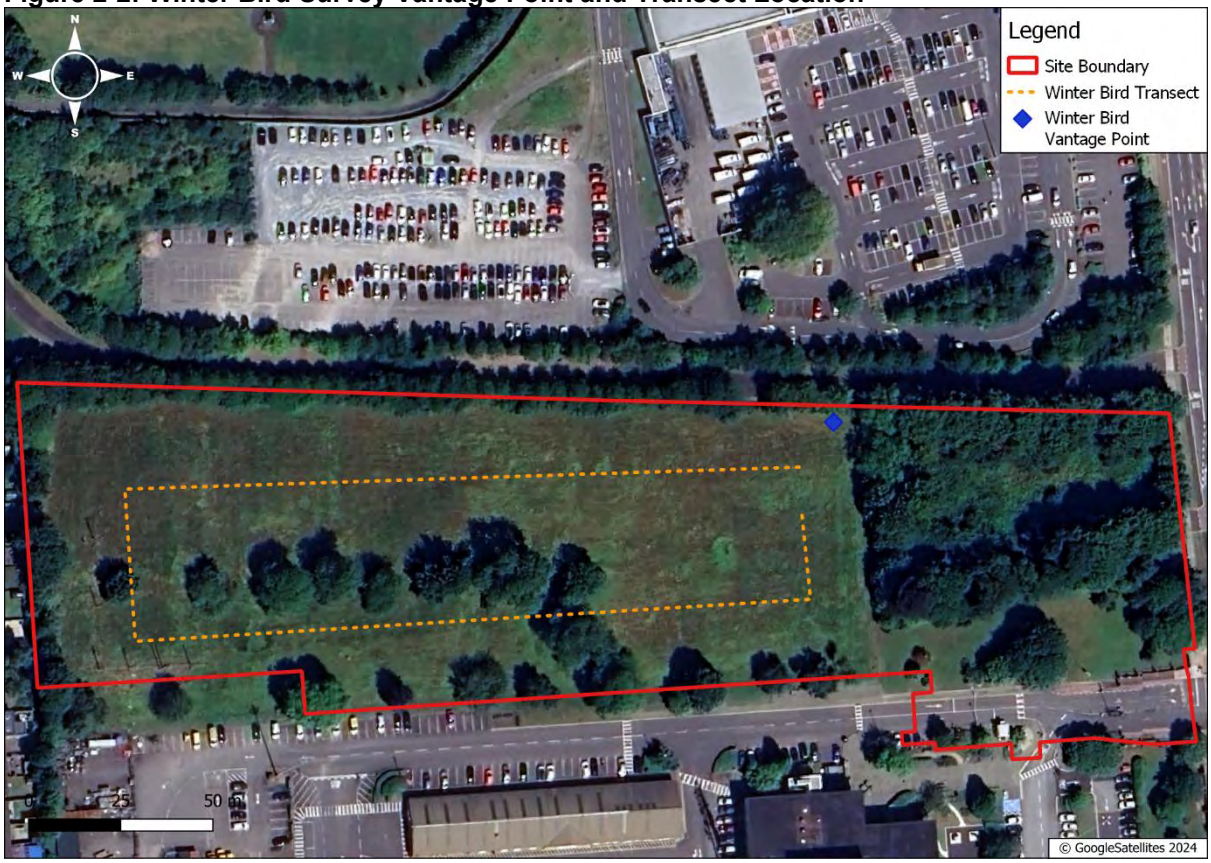
Table 2-2: Wintering Bird Survey Metadata

Visit	Date	Survey Times (Start-End)	High Tide	Temperature (°C) (Start – End)	Wind (Beaufort Wind Scale)	Rain	Cloud Cover
1[a]	10/11/2023	14:00 - 17:00	15:23	11°C- 8°C	3 - 4	None	25-50%
2[a]	20/12/2023	09:51 – 12:51	11:21	9°C - 9°C	5	None	70%
3	18/01/2024	09:30 – 12:30	10:25	-3 - 2°C	2	None	0%

*Note: Visits 1 and 2 did not include the area within the scrub in the northeast corner due to lack of accessibility.

[a] Visits 1 and 2 did not include the area within the scrub in the northeast corner due to lack of accessibility

Figure 2-2: Winter Bird Survey Vantage Point and Transect Location



2.2.4 Breeding Bird Survey

Breeding bird transect surveys were undertaken on 2nd May, 22nd May and 17th June 2024 by a suitably qualified and experienced MOR Environmental ecologist. These breeding bird surveys were conducted in line with the methodology described in:

- BTO - *A Field Guide to Monitoring Nests* [8]; and,
- Common Bird Census in *Bird Monitoring Methods* [9].

In order to establish whether any breeding bird species were utilising the Site or the airspace above the Site, the Common Bird Census ('CBC') methodology was utilised. The transect survey was designed to cover all accessible habitat within the Site (see Figure 2-2).

All birds were recorded through sight and sound. Optical equipment, such as binoculars, was used in order to minimise disturbance to potentially breeding birds. Suitable vegetation onsite was examined for the presence of nests. During the survey, the behavioural activity of the recorded birds was noted using the BTO breeding status codes [2]. Birds that displayed non-territorial behaviours were recorded as well (i.e., birds that were foraging and not calling, birds that were loafing).

Therefore, birds were classified as non-breeding, possibly breeding and confirmed breeding based on the behaviours exhibited. The criteria for each classification is described below:

- Non-breeding – Birds that were flying over the Site, birds that were foraging and not calling, birds that were loafing;
- Possibly Breeding – Birds observed in suitable nesting habitat and displaying either territorial and / or courtship behaviours, nest building behaviours or observed visiting a possible nest; and,

- Confirmed Breeding – Birds observed either on nest or carrying faecal sac or food, sighting of a nest with eggs / chicks, used nests, eggshells or recently fledged young.

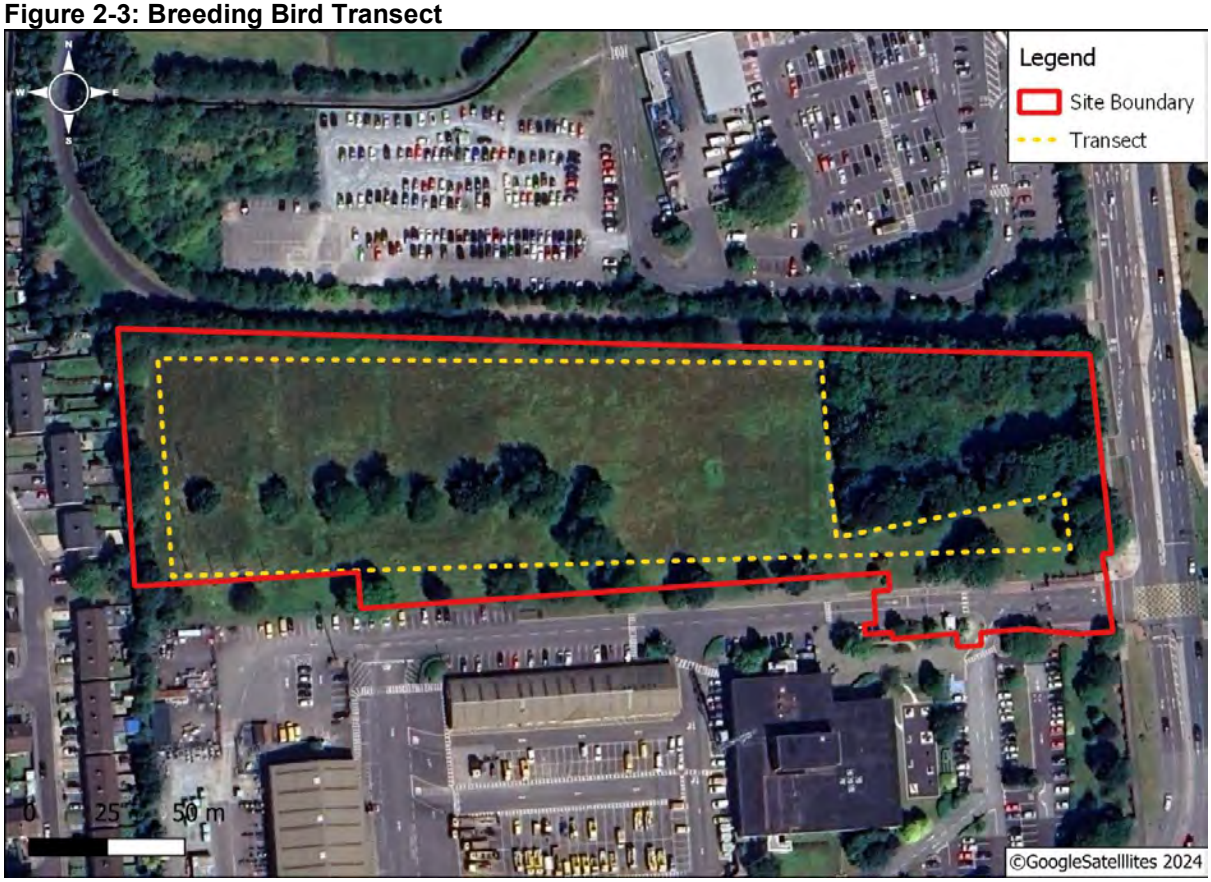
The metadata for the breeding bird surveys are described in Table 2-3. The transect walked is shown in Figure 2-3.

Table 2-3: Breeding Bird Survey Metadata

Visit	Date	Survey Times (Start-End)	Temperature (°C) (Start – End)	Wind (Beaufort Wind Scale)	Rain	Cloud Cover
1[a]	02/05/2024	07:30 – 09:10	6 – 7°C	2	Light drizzle at the end of the survey	66-100%
2[a]	22/05/2024	07:15 – 08:50	11 – 13°C	3	None	33-66%
3	17/06/2024	07:15 – 09:00	11 – 14°C	2	None	33-66%

*Note: Visits 1 and 2 did not include the area within the scrub in the northeast corner due to lack of accessibility.

Figure 2-3: Breeding Bird Transect



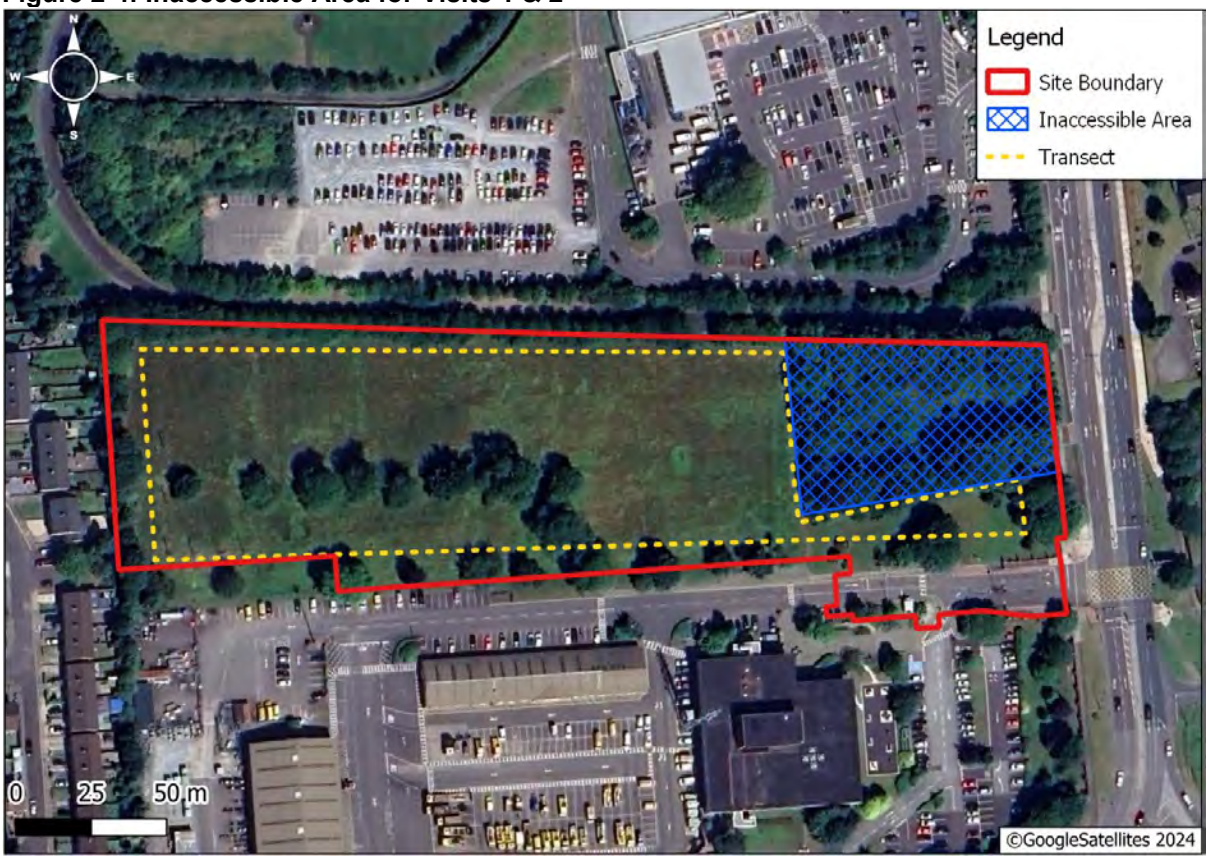
2.2.5 Survey Constraints

During the breeding bird surveys, the area of scrub was inaccessible during the first and second breeding bird surveys due to dense vegetation, and therefore, only the outskirts of the scrub were surveyed. Prior to the third and final breeding bird survey, an area of scrub was cleared in the northeast of the Site, this area was cleared to allow access for ground investigation works to take place on the Site. In advance of clearance works, the local NPWS officer was consulted, and it was agreed that under strict supervision, the area could be partially cleared to allow access. Please see Figure 2-4 for location. Additionally, due to access restrictions on the Site, surveys were not undertaken as close to sunrise as possible but

[a] Visits 1 and 2 did not include the area within the scrub in the northeast corner due to lack of accessibility

instead as close to opening of the ESBN site as possible. No other survey limitations were encountered.

Figure 2-4: Inaccessible Area for Visits 1 & 2



2.3 Avian Receptor Evaluation

The value of the avian receptors at the Site were evaluated using the ecological evaluation guidance given in the National Roads Authority ('NRA') guidance on the assessment of ecological impacts of National Road Schemes [10]. This guidance provides ratings for resources based primarily on geographic context and allows for resources at International, National, County and Local (higher and lower value) levels. Key ecological receptors for assessment are those deemed to be above the 'Local Importance (lower value)' evaluation (see Table 2-4 below).

Table 2-4: NRA Guidance for Evaluation Criteria relevant to Avian Fauna

Resource Evaluation	Criteria
International Importance	'European Site' including Special Area of Conservation ('SAC'), Site of Community Importance ('SCI'), Special Protection Area ('SPA'), proposed Special Area of Conservation, or Proposed Special Protection Area ('pSPA'). Ramsar Site (Convention on Wetlands of International Importance Especially Waterfowl Habitat 1971). World Heritage Site (Convention for the Protection of World Cultural & Natural Heritage, 1972). Site hosting significant species populations under the Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animals, 1979). Resident or regularly occurring populations (assessed to be important at the national level) of the following: • Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive.

Resource Evaluation	Criteria
National Importance	Site designated or proposed as a Natural Heritage Area ('NHA'), Statutory Nature Reserve, Refuge for Fauna and Flora protected under the Wildlife Acts, or National Park, Resident or regularly occurring populations (assessed to be important at the national level) of the following: • Species protected under the Wildlife Acts; and / or • Species listed on the relevant Red Data list.
County Importance	County important populations of species, or viable areas of semi-natural habitats or natural heritage features identified in the National or Local Biodiversity Action Plan ('BAP') (if this has been prepared). Sites containing habitats and species that are rare or are undergoing a decline in quality or extent at a national level. Resident or regularly occurring populations (assessed to be important at the County level) of the following: • Species of bird, listed in Annex I and / or referred to in Article 4(2) of the Birds Directive. • Species protected under the Wildlife Acts; and / or, • Species listed on the relevant Red Data list.
Local Importance (High Value)	Locally important populations of priority species or habitats or natural heritage features identified in the Local BAP (if this has been prepared). Resident or regularly occurring populations (assessed to be important at the Local level) of the following: • Species of bird, listed in Annex I and / or referred to in Article 4(2) of the Birds Directive. • Species protected under the Wildlife Acts; and / or, • Species listed on the relevant Red Data list.
Local Importance (Low Value)	Species that remain common and widespread. Green-listed species.

3 RESULTS

3.1 Desk Study

3.1.1 National Biodiversity Data Centre

The NBDC was consulted for records of bird species within 2km of the Site [4]. Table 3-1 below provides a summary of the records of birds that occurred within 2km of the Site at the time of writing this report. The NBDC records were checked on 17th December 2024 [4]. The following NBDC 2km grids have been checked: W66J, W66P, W66U, W67F, W67K, W67Q [4].

Only species recorded within the past 10 years were included in Table 4-3. The parameter of 10 years was chosen based on habitat adaption and modification; it is considered that any records over 10 years old are not representative of the current distribution of species populations.

Table 3-1: NBDC records for bird species within 2km of the Site

Common Name	Scientific Name	Date of last record	Designation
Barn Swallow	*Hirundo rustica*	08/04/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Black-billed Magpie	*Pica pica*	07/05/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Blackcap	*Sylvia atricapilla*	27/05/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Black-headed Gull	*Larus ridibundus*	20/03/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Black-tailed Godwit	*Limosa limosa*	05/12/2022	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Red List
Blue Tit	*Cyanistes caeruleus*	09/04/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Chaffinch	*Fringilla coelebs*	18/02/2021	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Coal Tit	*Periparus ater*	03/02/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Common Blackbird	*Turdus merula*	16/04/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Common Bullfinch	*Pyrrhula pyrrhula*	02/06/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Common Buzzard	*Buteo buteo*	29/11/2022	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List

Common Name	Scientific Name	Date of last record	Designation
Common Chiffchaff	*Phylloscopus collybita*	19/05/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Common Coot	*Fulica atra*	24/12/2022	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex II and III Section I and II Bird Species Birds of Conservation Concern Amber List
Common Cuckoo	*Cuculus canorus*	25/05/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Common Greenshank	*Tringa nebularia*	20/11/2016	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Common Kestrel	*Falco tinnunculus*	19/01/2015	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Red List
Common Kingfisher	*Alcedo atthis*	29/11/2022	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Common Moorhen	*Gallinula chloropus*	24/12/2022	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Common Pheasant	*Phasianus colchicus*	12/05/2020	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex II Section I and Annex III and Section III Bird Species Birds of Conservation Concern Green List
Common Redshank	*Tringa totanus*	20/11/2016	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Red List
Common Sandpiper	*Actitis hypoleucos*	18/03/2022	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex II Section I and Annex III and Section III Bird Species Birds of Conservation Concern Red List
Common Snipe	*Gallinago gallinago*	07/05/2020	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex II Section I and Annex III and Section III Bird Species Birds of Conservation Concern Red List
Common Starling	*Sturnus vulgaris*	16/04/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Common Swift	*Apus apus*	16/07/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Red List

Common Name	Scientific Name	Date of last record	Designation
Common Wood Pigeon	*Columba palumbus*	16/04/2023	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex II Section I and Annex III Section I Bird Species Birds of Conservation Concern Green List
Dunlin	*Calidris alphina*	20/11/2016	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex I Bird Species Birds of Conservation Concern Red List
Dunnock	*Prunella modularis*	19/05/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Eurasian Collared Dove	*Streptopelia decaocto*	16/04/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Eurasian Curlew	*Numenius arquata*	20/11/2016	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex II Section II Bird Species Birds of Conservation Concern Red List
Eurasian Jackdaw	*Corvus monedula*	19/05/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Eurasian Jay	*Garrulus glandarius*	29/11/2022	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Eurasian Oystercatcher	*Haematopus ostralegus*	05/12/2022	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Red List
Eurasian Sparrowhawk	*Accipiter nisus*	24/02/2017	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Eurasian Teal	*Anas crecca*	02/01/2023	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex II Section I and Annex III Section II Bird Species Birds of Conservation Concern Amber List
Eurasian Treecreeper	*Certhia familiaris*	06/01/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
European Goldfinch	*Carduelis carduelis*	25/04/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
European Greenfinch	*Carduelis chloris*	24/01/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
European Robin	*Erithacus rubecula*	16/04/2023	Wildlife Acts 1976 / 2000

Common Name	Scientific Name	Date of last record	Designation
			Birds of Conservation Concern Green List
Goldcrest	*Regulus regulus*	06/03/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Great Cormorant	*Phalacrocorax carbo*	31/03/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Great Tit	*Parus major*	19/05/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Grey Heron	*Ardea cinerea*	29/03/2022	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Grey Wagtail	*Motacilla cinerea*	29/11/2022	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Red List
Herring Gull	*Larus argentatus*	20/03/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Hooded Crow	*Corvus cornix*	06/03/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
House Martin	*Delichon urbicum*	21/04/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
House Sparrow	*Passer domesticus*	31/03/2022	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Iceland Gull	*Larus glaucoides*	13/03/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Lesser Black-backed Gull	*Larus fuscus*	20/03/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Little Egret	*Egretta garzetta*	12/03/2022	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex I Bird Species Birds of Conservation Concern Green List
Little Grebe	*Tachybaptus ruficollis*	20/03/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Long-tailed Tit	*Aegithalos caudatus*	20/01/2018	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Mallard	*Anas platyrhynchos*	19/05/2020	Wildlife Acts 1976 / 2000 EU Birds Directive Annex II Section I and Annex III and Section I Bird Species

Common Name	Scientific Name	Date of last record	Designation
			Birds of Conservation Concern Amber List
Mandarin Duck	*Aix galericulata*	02/04/2015	Wildlife Acts 1976 / 2000
Mew Gull	*Larus canus*	20/03/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Mistle Thrush	Turdus viscivorus	12/05/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Mute Swan	*Cygnus olor*	20/03/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Northern Lapwing	*Vanellus vanellus*	20/11/2016	Wildlife Acts 1976 / 2000 EU Birds Directive Annex II Section II Bird Species Birds of Conservation Concern Red List
Northern Shoveler	*Anas clypeata*	21/12/2022	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex II Section I and Annex III Section III Bird Species Birds of Conservation Concern Red List
Northern Wheatear	*Oenanthe oenanthe*	20/03/2018	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Peregrine Falcon	*Falco columbarius*	25/05/2023	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex I Bird Species Birds of Conservation Concern Green List
Pied Wagtail	*Motacilla alba subsp. yarrellii*	20/03/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Redwing	*Turdus iliacus*	29/11/2022	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Red List
Reed Bunting	*Emberiza schoeniclus*	12/05/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Ring-billed Gull	*Larus delawarensis*	20/03/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Rock Pigeon	*Columba livia*	18/03/2022	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex II Section I Bird Species Birds of Conservation Concern Green List
Rook	*Corvus frugilegus*	19/05/2020	Wildlife Acts 1976 / 2000

Common Name	Scientific Name	Date of last record	Designation
			Birds of Conservation Concern Green List
Sand Martin	*Riparia riparia*	28/04/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Sanderling	*Calidris alba*	20/11/2016	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Sedge Warbler	*Acrocephalus schoenobaenus*	12/05/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Song Thrush	*Turdus philomelos*	19/05/2020	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Stonechat	*Saxicola torquata*	20/11/2016	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Tufted Duck	*Aythya fuligula*	20/03/2020	Wildlife Acts 1976 / 2000 EU Habitats Directive Annex II Section I and Annex III and Section II Bird Species Birds of Conservation Concern Amber List
White-throated Dipper	*Cinclus cinclus*	29/03/2022	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Green List
Willow Warbler	*Phylloscopus trochilus*	05/04/2023	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Amber List
Winter Wren	*Troglodytes troglodytes*	16/04/2023	
Yellowhammer	*Emberiza citrinella*	08/12/2014	Wildlife Acts 1976 / 2000 Birds of Conservation Concern Red List
Yellow-legged Gull	*Larus michahellis*	24/05/2022	Wildlife Acts 1976 / 2000
Invasive Bird Species			
Rose-ringed Parakeet	*Psittacula krameri*	02/10/2024	High Impact Invasive Species

3.1.2 Irish Wetland Bird Survey ('I-WeBS')

The I-WeBS data for nearby sites within the vicinity of the Site, Cork Harbour - Douglas Estuary and Garryhesta Gravel Pit, was provided by BirdWatch Ireland on 8th April 2024. The records were reviewed in order to gain an understanding into the potential assemblage of bird populations that may utilise the areas within the vicinity of the Site.

The I-WeBS data for wintering seasons between 1994/1995 to 2022/2023 for the Cork Harbour - Douglas Estuary subsite. However, it should be noted that data between 1997/1998 – 1999/2000 was unavailable. A total of 60 species were recorded during this period. However,

during the most recent counts available for the 2022/2023 season, a total of 33 species were recorded.

The I-WeBS data for wintering seasons for 1995/1996, 1997/1998, 1998/1999 and between the years 2005/2006 and 2008/2009 were available for the Garryhesta Gravel Pit site. A total of 20 species were recorded during this period. However, during the most recent counts available for the 2008/2009 season only a total of 10 species were recorded.

None of the species recorded were recorded in numbers that would be considered of international importance. However, several species were recorded in numbers that would be considered to be of national importance, including:

- Shelduck were recorded at numbers of national importance between the 1994/1995, 1995/1996, 1996/1997 and 2000/2001, 2001/2002, 2003/2003, 2003/2004, 2004/2005, 2005/2006, 2006/2007, 2007/2008, 2009/2010, 2010/2011, 2011/2012 seasons in Cork Harbour – Douglas Estuary;
- Wigeon were recorded at numbers of national importance during the 1994/1995 season in Cork Harbour – Douglas Estuary;
- Teal were recorded at numbers of national importance during the 1995/1996, 2000/2001 and the 2003/2004 seasons in Cork Harbour – Douglas Estuary;
- Great crested grebe were recorded at numbers of national importance during the 1995/1996, 1996/1997 and 2001/2002 seasons in Cork Harbour – Douglas Estuary;
- Little egret were recorded at numbers of national importance during the 2004/2005, 2007/2008, 2009/2010 and 2014/2015 seasons in Cork Harbour – Douglas Estuary;
- Oystercatcher were recorded at numbers of national importance during the 1996/1997 season in Cork Harbour – Douglas Estuary;
- Golden plover were recorded at numbers of national importance during the 1994/1995, 1996/1997, 2000/2001, 2001/2002, 2003/2003, 2003/2004, 2004/2005, 2005/2006, 2006/2007, 2007/2008, 2009/2010, 2010/2011, 2011/2012, 2012/2013, 2013/2014, 2014/2015, 2015/2016, 2017/2018, 2018/2019 and 2021/2022 seasons in Cork Harbour – Douglas Estuary;
- Lapwing were recorded at numbers of national importance during the 1994/1995, 1995/1996, 1996/1997, 2000/2001, 2002/2003, 2003/2004, 2004/2005, 2005/2006, 2007/2008, 2010/2011, 2011/2012, 2013/2014 and 2014/2015 seasons in Cork Harbour – Douglas Estuary;
- Knot were recorded at numbers of national importance during the 2010/2011 season in Cork Harbour – Douglas Estuary;
- Dunlin were recorded at numbers of national importance during all seasons with data available in Cork Harbour – Douglas Estuary;
- Bar-tailed godwit were recorded at numbers of national importance during all seasons with data available except the 1994/1995 and 2023/2021 season in Cork Harbour – Douglas Estuary;
- Curlew were recorded at numbers of national importance during the 1995/1996, 1996/1997, 2002/2003, 2003/2004, 2004/2005, 2005/2006, 2007/2008, 2010/2011, 2011/2012, 2013/2014, 2014/2015 and 2021/2022 seasons in Cork Harbour – Douglas Estuary; and,
- Redshank were recorded at numbers of national importance during the 1995/1996, 1996/1997, 2002/2003, 2003/2004, 2004/2005, 2005/2006, 2006/2007, 2007/2008,

2009/2010, 2011/2012, 2012/2013, 2013/2014, 2014/2015, 2016/2017, 2019/2020, 2020/2021, 2021/2022 and 2022/2023 seasons in Cork Harbour – Douglas Estuary.

It should be noted that these sites are not located within the immediate vicinity of the Site, the nearest records to the Site would be from the Douglas Estuary area which is located ca. 4.8km east of the Site. Garryhesta Gravel Pit is located ca. 8.7km west of the Site. Therefore, these populations of bird species are not located within close proximity to the Site. Furthermore, it should be noted that none of these species identified are considered to occur within this area exclusively.

3.2 Field Studies

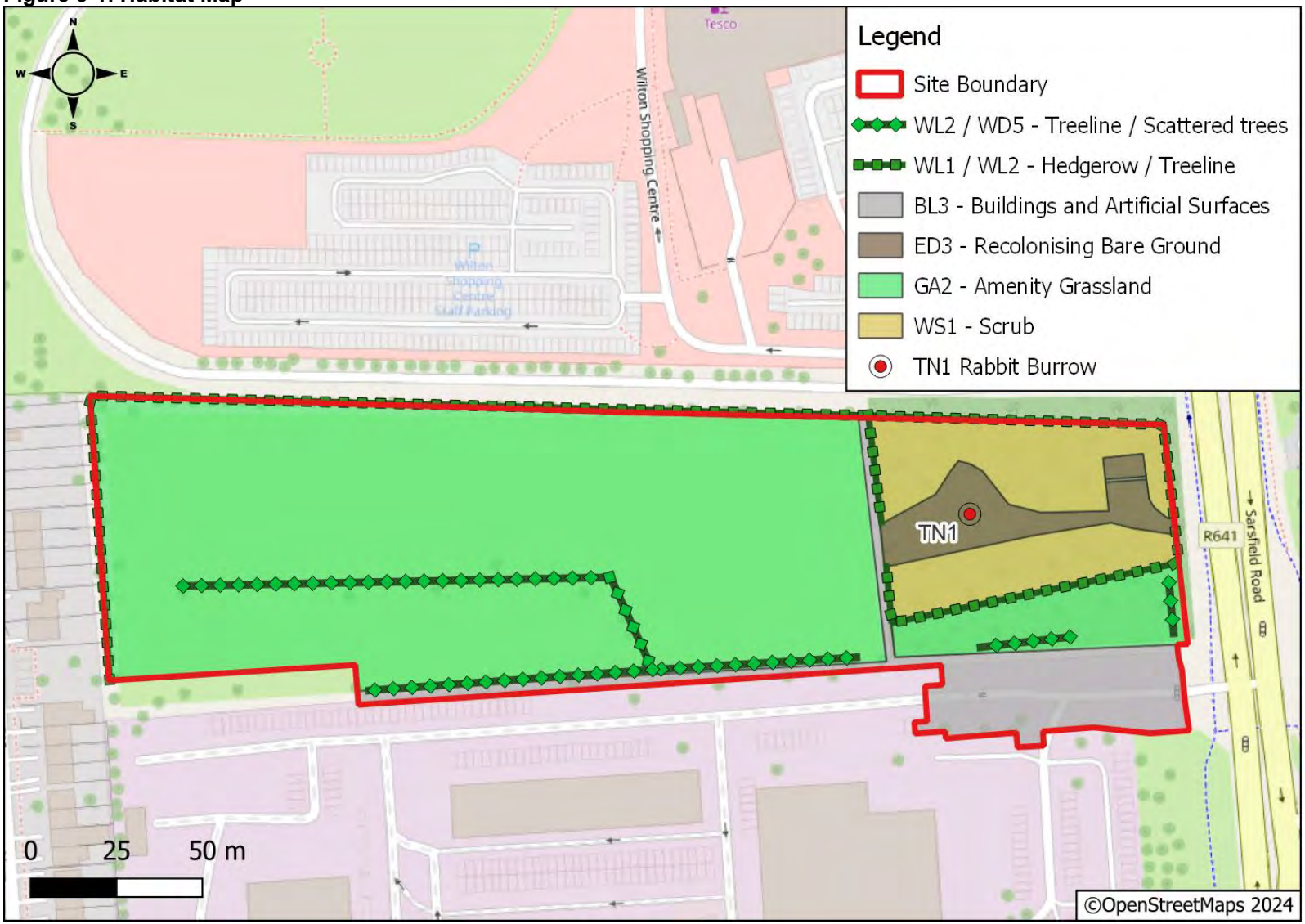
3.2.1 Habitat Assessment

The habitat surveys undertaken at the Site on 7th September 2023, 27th May 2024 and 27th August 2024 identified six habitats onsite:

- Amenity Grassland (GA2);
- Hedgerow / Treeline (WL1 / WL2);
- Scrub (WS1);
- Treeline / Scattered Trees and Parkland (WL2 / WD5);
- Recolonising bare ground (ED3); and,
- Buildings and Artificial Surfaces (BL1).

Figure 3-1 below illustrates the distribution of habitats within the Site.

Figure 3-1: Habitat Map



3.2.2 Bird Habitat Assessment

The habitats within the Site were primarily comprised of amenity grassland and scrub. There were also a number of hedgerows / treelines within the Site and bordering the Site.

Winter Bird Habitat Assessment

It is considered that the amenity grassland may provide suitable habitat foraging habitat for wintering birds. However, there were no waterbodies onsite or within the vicinity of the Site, and there were no wet grassland / wetland habitats considered suitable for wintering waterbirds or wildfowl. In addition, the north, east and western Site boundaries are surrounded by mature hedgerow / treelines, which may reduce the suitability of the Site for larger waterbirds, such as swans and geese, that require suitable space in order to take flight.

Breeding Bird Habitat Assessment

The hedgerow / treelines and areas of scrub were considered to provide suitable nesting and foraging habitat for breeding countryside birds. In addition, the amenity grassland onsite may provide suitable foraging habitat for breeding birds. However, it was noted during the surveys that the amenity grassland was regularly managed / cut. Therefore, it is considered that the grassland is unlikely to provide suitable nesting habitat for ground-nesting bird species. In addition, there are no waterbodies located onsite or within the vicinity of the Site and as such, it is considered that the Site does not have suitable habitat for breeding waterbirds.

3.2.3 Wintering Bird Surveys

Table 3-3 contains a summary of the birds recorded onsite and flying over the Site and their status according to the Birds of Conservation Concern in Ireland ('BoCCI'), which is the third assessment of the status of all regularly occurring birds on the island of Ireland [9].

During the wintering bird surveys, a total of 12 species were recorded:

- Five Green-listed BoCCI non-Annex I species– blackbird, hooded crow, magpie, rook and wood pigeon;
- Seven Amber-listed BoCCI, non-Annex I species were recorded – black-headed gull, buzzard, common gull, herring gull, lesser black-backed gull, little gull and starling; and,
- No Red-listed BoCCI, non-Annex I species were recorded.

Of these species, three were a designated species under the Cork Harbour SPA - black-headed gull, common gull, and lesser black-backed hull. In addition, two species can be classified under the designation of '*Wetland and Waterbirds [A999]*' under the Cork Harbour SPA - herring gull and little gull.

Details on the species that were recorded, their abundance and their behaviours are provided in Table 3-3 below.

Table 3-2: Birds Recorded within the Survey Area during the Wintering Bird Surveys

BoCCI Conservation Status (EU Birds Directive Annex Species)	Species	Latin Name	Number Recorded			Notes
			Visit 1	Visit 2	Visit 3	
Green-listed	Blackbird	*Turdus merula*	1	0	0	Visit 1: An individual was observed flying east over the Site though it did not interact with the Site. Visit 2: No blackbirds were observed during this survey. Visit 3: No blackbirds were observed during this survey
	Hooded Crow	*Corvus cornix*	7	0	0	Visit 1: Individuals were noted perching on the trees in the middle of the Site. Individuals were noted flying northwest, north, south and east over the Site but not interacting with it. Visit 2: No hooded crows were observed during this survey. Visit 3: No hooded crows were observed during this survey.
	Magpie	*Pica pica*	4	0	0	Visit 1: Individuals were observed flying and perching on trees in the middle of the Site. An individual was noted flying from a tree in the centre of the Site and flying north over the Site. Visit 2: No magpies were observed during this survey. Visit 3: No magpies were observed during this survey.
	Rook	*Corvus frugilegus*	32	0	0	Visit 1: An individual was observed perching on a tree in the western boundary of the Site. Individuals were noted flying above the Site, though they did not interact with it. Visit 2: No rooks were observed during this survey. Visit 3: No rooks were observed during this survey
	Woodpigeon	*Columba palumbus*	19	0	0	Visit 1: Individuals were noted interacting with the trees in the middle of the Site. They were flying from the south, north and southeast and perched on the trees. During the transect 11 individuals were flushed from the trees in the centre of the Site. Three individuals were noted flying northeast over the Site but not interacting with it. Visit 2: No woodpigeons were observed during this survey.

BoCCI Conservation Status (EU Birds Directive Annex Species)	Species	Latin Name	Number Recorded			Notes
			Visit 1	Visit 2	Visit 3	
						Visit 3: No woodpigeons were observed during this survey.
Amber-listed	Black-headed Gull	*Larus ridibundus*	1	6	3	Visit 1: An individual was noted flying west over the Site but did not interact with the Site. Visit 2: Individuals were observed flying west and north over the Site but did not interact with it. Visit 3: Individuals were noted flying north, east, southwest and south over the Site but did not interact with it.
	Buzzard	*Buteo buteo*	0	1	0	Visit 1: No buzzards were observed during this survey. Visit 2: An individual was perched on a tree on the western boundary of the Site and flew northeast. Visit 3: No buzzards were observed during this survey.
	Common Gull	*Larus canus*	0	4	2	Visit 1: No common gulls were observed during this survey. Visit 2: Individuals were observed flying south over the Site but did not interact with it. Visit 3: An individual was noted flying south over the Site. Another individual was noted flying southwest over the Site. They did not interact with the Site.
	Herring Gull	*Larus argentatus*	56	4	3	Visit 1: Individuals were observed flying west, south, north and circling over the Site but did not interact with it. Visit 2: Individuals were observed flying west, south, and north over the Site but did not interact with it. Visit 3: Individuals were noted flying north and south over the Site but did not interact with the Site.

BoCCI Conservation Status (EU Birds Directive Annex Species)	Species	Latin Name	Number Recorded			Notes
			Visit 1	Visit 2	Visit 3	
	Lesser Black-backed Gull	*Larus fuscus*	0	9	2	Visit 1: No lesser black-backed gulls were observed during this survey. Visit 2: Individuals were observed flying east, west, northwest, south, southeast and north over the Site but did not interact with it. Visit 3: An individual was noted flying south over the Site. Another individual was noted flying northeast over the Site. They did not interact with the Site.
	Little Gull	*Larus canus*	0	0	2	Visit 1: No little gulls were observed during this survey. Visit 2: No little gulls were observed during this survey. Visit 3: An individual was noted flying north over the Site. Another individual was noted flying northeast over the Site. Both did not interact with the Site.
	Starling	*Sturnus vulgaris*	~80	0	0	Visit 1: Approximately 80 individuals were observed circling over the Site and flying south though they did not interact with the Site. Visit 2: No starlings were observed during this survey. Visit 3: No starlings were observed during this survey.

Table 3-3 illustrates the distribution of each species within the zones of the fields of the survey area. As shown in the table, a majority of the species were identified within the boundary zone of the fields.

Table 3-3: Distribution of the Recorded Species within each Zone during the Winter Bird Surveys

BoCCI Conservation Status (EU Birds Directive Annex Species)	Species	Latin Name	Presence within each Zone		
			Boundary	Margin	Interior
Green-listed	Blackbird	*Turdus merula*	Flying over the Site		
	Hooded Crow	*Corvus cornix*	Present		
	Magpie	*Pica pica*	Present		
	Rook	*Corvus frugilegus*	Present		
	Woodpigeon	*Columba palumbus*	Present		
Amber-listed	Black-headed Gull	*Larus ridibundus*	Flying over the Site		
	Buzzard	*Buteo buteo*	Present		
	Common Gull	*Larus canus*	Flying over the Site		
	Herring Gull	*Larus argentatus*	Flying over the Site		
	Lesser Black-backed Gull	*Larus fuscus*	Flying over the Site		
	Little Gull	*Larus canus*	Flying over the Site		
	Starling	*Sturnus vulgaris*	Flying over the Site		

During the winter bird surveys, flocks of birds were noted flying over the Site. In the winter, birds tend to flock together to increase their opportunity to find food sources that another bird has already located and to maintain heat [11].

3.2.4 Breeding Bird Surveys

Table 3-4 contains a summary of the birds recorded onsite and their status according to the Birds of Conservation Concern in Ireland ('BoCCI'), which is the third assessment of the status of all regularly occurring birds on the island of Ireland [12].

During the breeding bird surveys, a total of 18 species were recorded:

- 14 Green-listed BoCCI non-Annex I species – blackbird, blackcap, blue tit, chaffinch, dunnock, goldfinch, great tit, hooded crow, magpie, robin, rook, song thrush, wood pigeon and wren;
- Three Amber-listed BoCCI, non-Annex I species were recorded – goldcrest, swallow and starling;
- One Amber BoCCI listed Annex species was recorded - mallard; and,
- No Red-listed BoCCI, non-Annex I species were recorded.

It should be noted that none of these species recorded were classified as designated species under the Cork Harbour SPA. However, one species that was recorded flying over the Site,

mallard, can be classified as '*Wetland and Waterbird [A999]'* which is designated under the Cork Harbour SPA.

Of the species recorded six were classified as '*Confirmed Breeding,*' blackbird, goldcrest, hooded crow, rook, woodpigeon and wren (see Table 3-4 below). In addition, nine other species were classified as '*Possibly Breeding'* and three species were classified as non-breeding. No Red-listed BoCCI were recorded.

Details on the species that were recorded, their abundance and their behaviours are provided in Table 3-4 below.

Table 3-4: Birds Recorded within the Survey Area during the Breeding Bird Surveys

BoCCI Conservation Status (EU Birds Directive Annex Species)	Species	Latin Name	Number Recorded			Notes	Breeding Status
			Visit 1	Visit 2	Visit 3		
Green-listed	Blackbird	*Turdus merula*	7	6	7	Visit 1: Individuals were noted foraging in the grass south of the hedgerow / treeline in the southeast of the Site. An individual was foraging and perching on the ground in the area of scrub. Individuals were also noted perching and calling from the trees in the central area of the western area of the Site. An individual was noted carrying nest building materials adjacent to the northern boundary of the Site. Chicks were heard calling from a tree amongst the scattered trees in the western area of the Site. Visit 2: Individuals were noted foraging on the grassland and flushed from it in the eastern area of the Site. An individual was noted flying southeast over the Site. Visit 3: Individuals were noted foraging in the grassland in the southeast of the Site. Individuals were noted perching on trees and flying in the scrub and in the western area of the Site.	Confirmed Breeding
	Blackcap	*Sylvia atricapilla*	0	0	2	Visit 1: No blackcaps were observed during this survey. Visit 2: No blackcaps were observed during this survey. Visit 3: Individuals were noted calling from the hedgerow / treelines in the northern and western boundary of the Site.	Possibly breeding
	Blue Tit	*Cyanistes caeruleus*	2	1	5	Visit 1: A pair were noted calling and perching in a tree in the southwest of the Site. Visit 2: An individual was noted perching on the hedgerow / treeline in the northern boundary of the Site. Visit 3: Individuals were noted calling and perching in the hedgerow / treeline on the northern boundary, the hedgerow / treeline in the southeastern section of the Site and the area of scrub.	Possibly Breeding
	Chaffinch	*Fringilla coelebs*	0	2	4	Visit 1: No chaffinches were observed during this survey. Visit 2: Individuals were noted calling and perching from the hedgerow / treeline in the southeast corner of the Site.	Possibly Breeding

BoCCI Conservation Status (EU Birds Directive Annex Species)	Species	Latin Name	Number Recorded			Notes	Breeding Status
			Visit 1	Visit 2	Visit 3		
						Visit 3: Individuals were noted foraging and calling in the treelines in the south of the Site and the northern hedgerow / treeline.	
	Dunnock	*Prunella modularis*	0	1	0	Visit 1: No dunnocks were observed during this survey. Visit 2: An individual was noted calling and perching in the area of scrub in the northeastern section of the Site. Visit 3: No dunnocks were observed during this survey.	Possibly breeding
	Goldfinch	*Carduelis carduelis*	0	0	21	Visit 1: No goldfinches were observed during this survey. Visit 2: No goldfinches were observed during this survey. Visit 3: Two individuals were noted calling from the hedgerow / treeline in the northern boundary of the Site and 12 individuals were noted calling and perching on a tree in the centre of the southern area of the Site. Seven individuals were foraging in the grassland in the southeast of the Site.	Possibly breeding
	Great Tit	*Parus major*	2	2	0	Visit 1: Individuals were noted alarm calling from the southern section of the hedgerow / treeline on the western boundary of the Site. Visit 2: An individual was noted calling and perching in the area of scrub on the northwest of the Site. Another individual was noted calling from the southern section of the hedgerow/ treeline ion the eastern boundary. Visit 3: No great tits were observed during this survey.	Possibly Breeding
	Hooded Crow	*Corvus cornix*	2	2	0	Visit 1: An individual was noted perching and alarm calling from the western hedgerow / treeline. Another individual was alarm calling and flushed from a tree in the southwest of the Site. Visit 2: Individuals were calling, flying and landed on a tree in the centre of the Site. A large nest was observed in this tree utilised by a hooded crow. Visit 3: No hooded crows were observed during this survey.	Confirmed Breeding

BoCCI Conservation Status (EU Birds Directive Annex Species)	Species	Latin Name	Number Recorded			Notes	Breeding Status
			Visit 1	Visit 2	Visit 3		
	Magpie	*Pica pica*	1	3	0	Visit 1: An individual was flushed from the hedgerow / treeline in the northeast of the Site. Visit 2: Individuals were noted calling from the hedgerow / treeline on the northern boundary of the Site. Visit 3: No magpies were observed during this survey.	Possibly Breeding
	Robin	*Erithacus rubecula*	8	7	3	Visit 1: An individual was noted calling and perching in the centre of the northern hedgerow / treeline. Another individual was noted foraging, perching on the ground and flushed from the same area. An individual was observed carrying nest building materials in the south of the Site. An individual was noted perching on a tree in the southeast of the Site. Four individuals were noted foraging in grassland in the southeast of the Site. Visit 2: Individuals were noted calling and perching the area of scrub in the northeastern section of the Site and on the fence bordering the northern boundary of the Site. Individuals were noted calling from the hedgerow / treeline in the western boundary. An induvial was noted carrying nest building materials in the southeastern section of the Site. Another individual was noted foraging the same area. Visit 3: Individuals were noted calling and foraging in the southeastern area of the Site and from a tree in the centre of the Site.	Possibly Breeding
	Rook	*Corvus frugilegus*	0	1	2	Visit 1: No rooks were observed during this survey. Visit 2: An individual was noted alarm calling from the hedgerow / treeline in the southeastern section of the Site. A large nest was observed in this hedgerow / treeline utilised by a rook. Visit 3: Individuals were noted calling from the hedgerow / treeline in the southeast of the Site.	Confirmed Breeding

BoCCI Conservation Status (EU Birds Directive Annex Species)	Species	Latin Name	Number Recorded			Notes	Breeding Status
			Visit 1	Visit 2	Visit 3		
	Song Thrush	*Turdus philomelos*	2	1	3	Visit 2: Two individuals were noted calling from the hedgerow / treeline in the southeast of the Site. Visit 2: An individual was noted flying northeast over the Site. Visit 3: An individual was noted calling and perching from a tree in the centre of the Site and from the treeline west of the scrub.	Possibly Breeding
	Woodpigeon	*Columba palumbus*	9	11	5	Visit 1: Individuals were flushed from trees throughout the Site. Two individuals were noted calling from the hedgerow / treeline in the southeast of the Site. Visit 2: Individuals were noted foraging on the grassland, perching on trees, and flushed from them during the survey. An individual was observed on a nest in an oak tree in the treeline in the southeast corner of the Site. Visit 3: Individuals were noted calling and flushed from hedgerow / treeline in the northern boundary of the Site and trees in the southwestern and southeastern areas of the Site.	Confirmed Breeding
	Wren	*Troglodytes troglodytes*	8	5	6	Visit 1: Individuals were noted calling and alarm calling from the area of scrub, northwestern and southeastern hedgerow / treeline. A juvenile was also heard calling from hedgerow / treeline in the northern boundary of the Site. Visit 2: Individuals were noted calling from the area of scrub in the northwestern section of the Site and trees in the southwestern area of the Site. Individuals were noted calling from the hedgerow / treeline in the western boundary of the Site. Visit 3: Individuals were noted calling from the area of scrub, the hedgerow / treeline in the northern area of the Site and the hedgerow / treeline in the southeastern section of the Site.	Confirmed Breeding
Amber-listed	Goldcrest	*Regulus regulus*	1	2	2	Visit 1: An individual was noted calling from a nest in a tree in the southeastern area of the Site. Visit 2: Individuals were noted calling from the trees in the centre of the Site and the western hedgerow / treeline.	Confirmed Breeding

BoCCI Conservation Status (EU Birds Directive Annex Species)	Species	Latin Name	Number Recorded			Notes	Breeding Status
			Visit 1	Visit 2	Visit 3		
						Visit 3: Individuals were noted calling from the area of scrub in the northeast of the Site.	
	Mallard	*Anas platyrhynchos*	3	0	0	Visit 1: Two males and one female were observed flying north over the Site but did not interact with the Site. Visit 2: No mallards were observed during this survey. Visit 3: No mallards were observed during this survey.	Non-breeding
	Swallow	*Hirundo rustica*	0	2	2	Visit 1: No swallows were observed during this survey. Visit 2: Individuals were noted foraging over the grassland in the centre of the Site. Visit 3: Individuals were noted foraging over the grassland in the southeastern area of the Site.	Non-breeding
	Starling	*Sturnus vulgaris*	0	0	41	Visit 1: No starlings were observed during this survey. Visit 2: No starlings were observed during this survey. Visit 3: One individual was noted foraging in the southeastern area of the Site. 40 individuals were noted foraging and flushed from the Site in the southeastern section.	Non-breeding

4 SITE ASSESSMENT

During the winter bird surveys, a total of 12 avian species were recorded within the survey area. During the breeding bird surveys, a total of 18 avian species were recorded within the survey area. During all of the surveys undertaken at the Site, a total of 24 bird species were recorded onsite and flying over the Site.

The species recorded are considered to be common within the Irish countryside and none of these species were present in significant numbers.

4.1 Winter Bird Assessment

As mentioned in Section 3.2.1, the Site was comprised of amenity grassland, scrub, and hedgerow / treelines that surround the Site. Within the wider area, there were office buildings, residential properties, a shopping centre, and a busy road.

Of the 20 species recorded at numbers of national importance from the I-WeBS data, only one species have been recorded by the NBDC within 2km of the Site within the last 10 years – little egret [4]. However, little egret typically winters in a variety of wetland habitats, including shallow lakes, riverbanks, lagoons and coastal estuaries [13]. There were no water features located onsite and there were no wetland or wet grassland habitats located onsite. Therefore, it is not considered that the Site or the surrounding area is a site of importance for little egret.

During the winter bird surveys five Green-listed BoCCI non-Annex I species and seven Amber-listed BoCCI non-Annex I species were recorded. The wetland birds protected under Cork Harbour SPA observed during the survey include black-headed gull, common gull, herring gull, lesser black-backed gull and little gull, these are all amber listed species. All of these species were observed flying over the Site and did not interact with the Site during the surveys.

It should be noted that the majority of birds identified onsite were observed within the boundary area of the Site (i.e., hedgerow / treelines) or flying over the Site. It should be noted that the majority of the hedgerow / treelines within the Site will be retained as part of the Proposed Development with the exception of the western hedgerow / treeline and the trees in the centre of the Site.

It is considered the levels of disturbance at the ESBN site to the south of the Site and Wilton Shopping Centre to the north of the Site would deter any designated birds utilising the Site due to levels of vehicular traffic and anthropogenic activity.

In addition, wintering birds and wildfowl species tend to prefer habitats similar to those in Cork Harbour SPA such as mudflats, salt marshes and wet grassland, none of which were located within the Site. Therefore, it is concluded that the onsite habitats were not optimal for wintering bird species. Furthermore, suitable habitats within Cork Harbour are separated from the Site by Cork City and its suburbs along with associated road infrastructure. Therefore, it can be considered that the Site is not of importance for wintering birds and no mitigation measures for wintering birds is necessary as part of the Proposed Development.

4.2 Breeding Bird Assessment

During the breeding bird surveys, a total of 18 bird species were recorded, and of these species:

- Six species were confirmed to be breeding within the survey area – blackbird, goldcrest, hooded crow, rook, woodpigeon and wren;
- Nine species displayed territorial behaviours that were classified as possibly breeding within the hedgerow / treelines – blackcap, blue tit, chaffinch, dunnock, goldfinch, great tit, magpie, robin and song thrush; and,
- Three species were categorised as non-breeding – mallard, swallow and starling.

None of the species recorded were considered to be of International, National or County Importance, according to the receptor evaluation set out in Table 2-4.

However, based on the fact that goldcrest, an amber-listed species, were observed breeding onsite and other green-listed species were recorded breeding onsite, the Site can be concluded to be of Local Importance (High Value).

The majority of birds identified within the study area were observed within the hedgerows / treelines and scrub for nesting / possible nesting and were observed foraging within the amenity grassland. It should be noted that the majority of the hedgerow / treelines within the Site will be retained as part of the Proposed Development with the exception of the western hedgerow / treeline and the trees in the centre of the Site.

Overall, the Site is considered to be of local importance for breeding bird species given the fact that six species were confirmed to be breeding within the survey area. It should be noted, however, that breeding birds within the Site currently experience high levels of anthropogenic activities due to the ESBN site south of the Site, Wilton shopping centre north of the Site and Sarsfield Road to the east of the Site.

5 IMPACT ASSESSMENT AND MITIGATION

This section will assess potential impacts, if any, on breeding and wintering bird species within the Site and the vicinity of the Site and will put forward mitigation measures, if required, that will be implemented as part of the Proposed Development to ensure no adverse effects occur to any bird species.

5.1 Potential Impacts

5.1.1.1 Wintering Bird Species

It is not considered that the Site is of importance for wintering bird species based on the desk-based assessment, the habitats present onsite, and the wintering bird surveys conducted on the Site.

As discussed above, wintering waterbird and wildfowl species tend to preference habitats similar to those present along the river estuaries of the Rivers Lee, Douglas, Owenboy and Owenacurra including mudflats, marshlands and coastal grasslands, all of which are located within the wider area. Therefore, it is considered that wintering waterbird species would be likely to utilise these areas as opposed to the onsite habitats. In addition, the onsite habitats may provide suitable foraging and roosting habitat for wintering countryside bird species; however, given the presence of more suitable habitats within the wider area, it is considered that the Site is not a site of importance for wintering bird species.

Overall, the required vegetation clearance and loss of amenity grassland onsite may result in a loss of potential foraging grounds to wintering bird species. However, considering that the majority of the species recorded during the surveys did not interact with the Site, the Site is not considered of high importance for wintering bird species.

Therefore, it is considered that the Proposed Development will result in a negligible impact on wintering bird species.

5.1.1.2 Breeding Birds

As mentioned in Section 4 above, the Site is considered to provide suitable nesting habitats for breeding birds through the treelines / hedgerows and scrub and provides suitable foraging habitats for breeding birds through the amenity grassland, scrub and hedgerow / treelines. Additionally, given the confirmed breeding onsite, the Site is considered to be of local importance for breeding birds.

However, it is considered that birds utilising the Site would be habituated to high levels of anthropogenic activity given the close proximity of the Site to Sarsfield Road and the ESBN site. However, it is still considered that birds within the immediate locality of the Site may be subject to some temporary disturbance during construction. However, this is not considered likely to be significant, birds are highly mobile and therefore will move away from disturbances. It can therefore be concluded that should any birds be disrupted during any of the works they will move to a suitable area elsewhere.

However, as part of the Proposed Development, the following clearance / removal works will be required:

- Removal of hedgerow / treeline on the northern, northeastern and western boundaries;
- Removal of scrub vegetation; and,
- Removal of trees in the centre and south of the Site.

For full details, refer to the Landscape Strategy Report prepared by Park Hood Chartered Landscape Architects submitted as part of this planning application.

Studies have shown that traffic noise can result in acoustic interference or masking of bird songs and that bird abundance, occurrence and species richness is reduced near roads so the loss of these hedgerows / treelines is not considered to be significant [14] [15] [16]. Regardless, there will be a loss of nesting habitat for bird species and mitigation measures will be required in order to ensure no impacts occur to breeding birds during the vegetation removal.

5.2 Mitigation Measures

5.2.1 Construction Phase

5.2.1.1 Winter Birds

No mitigation measures are considered necessary for wintering birds during the Construction Phase.

5.2.1.2 Breeding Birds

In order to ensure that no disturbances occur to breeding birds, the following measures will be implemented:

- Vegetation clearance works will take place outside the breeding bird season (1st March to 31st August). This is as per Section 40 of the Wildlife Act 1976, as amended by Section 46 of the Wildlife (Amended) Act 2000, which states that the cutting, grubbing, burning or destruction by other means of vegetation growing on uncultivated lands or hedgerows or ditches will be restricted during the besting and breeding seasons for birds and wildlife;
- In the event that demolition or vegetation clearance works need to be undertaken within the main breeding season, the following measures will be implemented:
    - The project ECoW will undertake appropriate breeding bird surveys to identify any nesting birds within the Site;
    - The project ECoW will consult with the NPWS;
    - Prior to vegetation clearance on the Site, the project ECoW will inspect the Site; and,
    - All vegetation removal will be undertaken in a systematic manner under the strict supervision of the ECoW.
- In the unlikely event that birds nest within the active working area during the works, all works will cease with immediate effect and will not resume until the project ECoW has been consulted.

Furthermore, in order to ensure that no impacts occur to breeding bird species as a result of habitat loss, the following enhancement measures will be implemented:

- Landscape Planting; and,
- Bird boxes.

See Section 5.3 below for further details.

5.2.2 Operational Phase

No mitigation measures are considered necessary for breeding or wintering birds during the Operational Phase.

5.3 Ecological Enhancement Measures

5.3.1 Landscape Planting

A comprehensive Landscape Plan has been developed for the Proposed Development, which includes a large public realm component based on the retention of mature trees and the orientation of the development. For full details, refer to the Landscape Strategy Report prepared by Park Hood Chartered Landscape Architects submitted as part of this planning application.

5.3.2 Bird Boxes

A variety of bird nest boxes designed to attract a variety of nesting bird species will be erected on suitable trees within the Site. The creation of nesting habitat, along with the creation of species rich habitat will encourage an abundance of invertebrate life (a potential food source) will be beneficial to local birds. General bird boxes designed to cater for a variety of species will be used, the number and location of which will be specified by an ecologist. Refer to the examples provided in Figure 5-1.

An example is the 1B Schwelger Nest Box - This nest box will attract a wide range of species and is available with different entrance hole sizes to prevent birds from competing with each other for the boxes.

The exact location of the bird boxes will be determined by an experienced ecologist after the completion of the proposed works. This is to allow the ecologist to assess the exact conditions that have been created and thus to ensure that the bird boxes are sited in the most appropriate location possible. However, it is recommended that bird boxes be facing between north and south-east to avoid strong winds, rain and sunshine. In addition, bird boxes should be tilted slightly forward to ensure that rain runs off the top and there should be a clear flight path to access the nestbox hole. Also, bird boxes with a hole should be placed ca. 2-4m off the ground, whereas open-fronted bird boxes should be placed lower than 2m among dense vegetation where predators will not easily see it.

It should be noted that the distance between nest boxes can vary. Species such as house sparrow and starling have a preference for nesting in colonies and therefore the bird boxes should be placed closer to each other, whereas species robins and tits can be highly territorial and therefore the nest boxes should be separate by a greater distance.

Figure 5-1: Bird Box Examples

6 CONCLUSIONS

Overall, 12 species were identified during the wintering bird survey and 18 species were recorded during the breeding bird surveys conducted onsite.

6.1 Winter Bird Surveys

During the winter bird surveys, a total of 12 bird species were recorded:

- Five Green-listed BoCCI non-Annex I species– blackbird, hooded crow, magpie, rook and wood pigeon;
- Seven Amber-listed BoCCI, non-Annex I species were recorded – black-headed gull, buzzard, common gull, herring gull, lesser black-backed gull, little gull and starling; and,
- No Red-listed BoCCI, non-Annex I species were recorded.

Of the species recorded, five of these are species recorded - black-headed gull, common gull, herring gull, lesser black-backed gull and little gull -are designated under Cork Harbour SPA. Black-headed gull, herring gull and little gull are categorised under '[*A99 Wetland and Waterbirds*]'. However, these species were observed flying over the Site and did not interact with it.

The winter bird surveys did not identify any roosting sites or potential roosting sites on the Site.

Overall, it is considered that the Proposed Development will not have a negative impact on wintering birds given that they did not utilise the Site during the surveys and there are much more suitable habitats such as mudflats, salt marshes and wet grassland elsewhere.

6.2 Breeding Bird Surveys

During the breeding bird surveys, 18 bird species were recorded:

- 14 Green-listed BoCCI non-Annex I species – blackbird, blackcap, blue tit, chaffinch, dunnock, goldfinch, great tit, hooded crow, magpie, robin, rook, song thrush, wood pigeon and wren;
- Four Amber-listed BoCCI, non-Annex I species were recorded – goldcrest, mallard, swallow and starling; and,
- No Red-listed BoCCI, non-Annex I species were recorded.

Of the species recorded – six species were recorded as confirmed breeding - blackbird, goldcrest, hooded crow, rook, woodpigeon and wren. Additionally, nine species displayed territorial behaviours and were categorised as possibly breeding and three were recorded as non-breeding.

Based on the breeding birds surveys, it was concluded that the hedgerow / treelines bordering the Site, the trees scattered throughout the Site and the scrub are suitable for a range of common nesting bird species, and the amenity grassland is suitable for foraging breeding birds.

The Proposed Development will require the removal of the majority of hedgerow / treeline, the area of scrub and the trees in the centre and south of the Site and will be constructed on the amenity grassland. However, appropriate mitigation measures will be implemented to ensure no impacts occur to breeding birds utilising the Site and it is considered that the removal of these habitats will result in a short-medium term loss of nesting and foraging habitat. However, the landscape planting will provide suitable nesting and foraging habitat once it has been established.

7 REFERENCES

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APPENDIX B

April 2025

Bat Report

Proposed Large-Scale Residential Development at LDA Wilton, Sarsfield Road, Cork

On behalf of

The Land Development Agency

('LDA')

MALONE O'REGAN ENVIRONMENTAL

QUALITY
I.S. EN ISO 9001:2015
NSAI Certified

MALONE O'REGAN

Form ES - 04

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Title: Bat Report, Proposed Large-Scale Residential Development at LDA Wilton, Sarsfield Road, Cork, The Land Development Agency ('LDA').

Job Number: E2170

Prepared By: Stephanie Lonergan **Signed:** S Lonergan

Checked By: Henry Tennyson **Signed:** Henry Tennyson

Approved By: Dyfrig Hubble **Signed:**

Revision Record

Issue No.	Date	Description	Remark	Prepared	Checked	Approved
00	19/12/24	Bat Report	Draft	SL	HT	DH
01	20/12/24	Bat Report	Final	SL	HT	DH
02	14/04/25	Bat Report – updated landscaping	Final	SL	HT	DH

Bat Report

Proposed Large-Scale Residential Development at LDA Wilton, Sarsfield Road, Cork

The Land Development Agency ('LDA')

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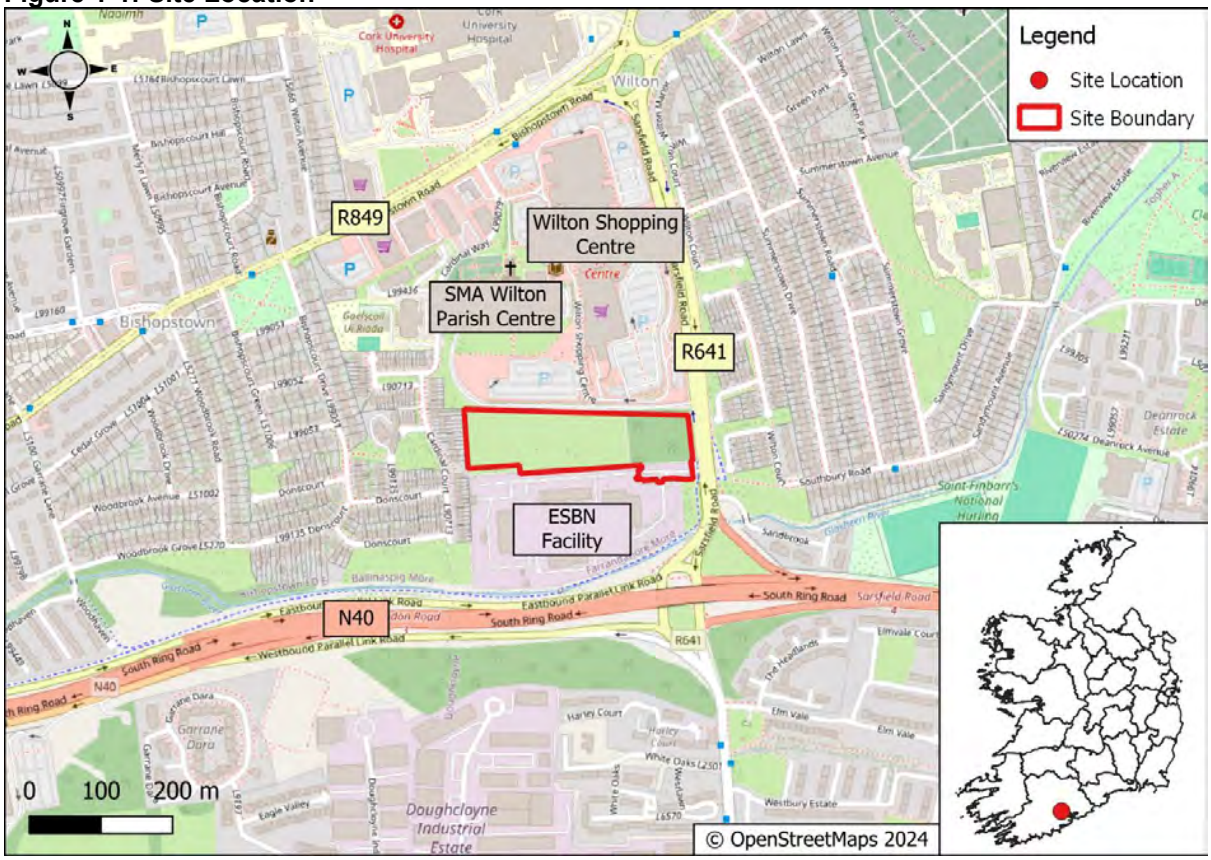
1 INTRODUCTION

Malone O'Regan Environmental ('MOR Environmental') was commissioned by Reddy Architecture + Urbanism to undertake a Bat Survey Report on behalf of the Land Development Agency ('LDA') ('the Applicant') for the proposed Large-Scale Residential Development ('the Proposed Development') at Farrandahadore More, Sarsfield Road, Wilton (OS ITM Reference X: 564999 Y: 569684).

The Proposed Development will be located on a site that is circa ('ca.') 2.61 hectares ('ha') in size and is located on a site adjacent to Sarsfield Rd., Wilton, Cork, ca. 3km southwest of Cork City Centre and is shown in Figure 1-1 ('the Site').

Figure 1-1: Site Location



1.1 Purpose of the Report

This Bat Survey Report is an Appendix to the Ecological Impact Assessment ('EcIA') and should be read in conjunction with the report. The purpose of this report is to outline the methodologies and results of the bat surveys that were undertaken on the Site and to assess the potential impacts of the Proposed Development on bat species.

Full details of the Proposed Development can be found in the EcIA submitted as part of the overall planning application.

1.2 Relevant Legislation

All Irish bat species are protected by law under the Wildlife Act 1976 and its subsequent amendments. They are afforded full protection under this act, which makes it a criminal offence for anyone without a licence to:

- Kill, injure or handle a bat;
- Possess a bat (whether alive or dead);

- Disturb a roosting bat; and,
- Damage, destroy or obstruct access to any place used by bats for shelter, whether they are present or not.

In addition to domestic legislation, bats are also protected under the EU Habitats Directive (92/43/EEC). All Irish bats are listed in Annex IV of the Habitats Directive and the lesser horseshoe bat is further listed under Annex II, which makes it an offence to:

- Deliberately capture, injure, or kill any bat; or,
- Deliberately disturb a bat, in particular, any disturbance which is likely;
    (a) To impair their ability:
        (i) To survive, to breed or reproduce, or to rear or nurture their young; or,
        (ii) To hibernate or migrate.
    (b) To affect significantly the local distribution or abundance of the bat species; or,
- Damage or destroy a breeding site or resting place of a bat.

Therefore, the destruction, alteration or evacuation of a known bat roost is a notifiable action under current legislation and a derogation license must be obtained from the National Parks and Wildlife Service ('NPWS') before works can commence.

Furthermore, it should also be noted that any works interfering with bats and especially their roosts, including, for instance, the installation of lighting in the vicinity of the latter, may only be carried out under a license to derogate from Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended), issued by the NPWS.

1.3 Statement of Authority

The bat surveys and inspections undertaken on the Site along with a consultation with the NPWS were led and supervised by Mr. Henry Tennyson, Environmental Consultant. This report was also reviewed by Henry, who has a B.Agr.Sc in Agri-Environmental Sciences and a M.Sc. in Marine Biology. Henry is a qualifying member of the Chartered Institute of Ecology and Environmental Management ('CIEEM') and has over three years' experience in the consultancy sector. Henry has gained extensive experience in undertaking bat surveys and building inspections and has been successfully involved in obtaining derogation licenses from the NPWS. Henry is qualified to analyse the bat recordings using Kaleidoscope Pro Software and attended the Wildlife Acoustics Kaleidoscope Pro Training Course.

This report was approved by Mr. Dyfrig Hubble, Associate Director – Ecologist. Dyfrig has a B.Sc. (Hons) in Tropical Environmental Science and an M.Sc. in Environmental Forestry. Dyfrig is a full member of the CIEEM and has over 18 years' of experience working in the ecological consultancy sector, including habitat appraisals and specialist species-specific surveys. Dyfrig has extensive experience in undertaking a variety of bat surveys including dawn/dusk surveys, transects, static monitoring, harp trapping, and Lesser Horseshoe roost counts. Dyfrig has also worked on numerous projects that have required supervision of building demolition and tree removal works under licence. These projects have included work both in the UK and Ireland.

1.4 Consultation

MOR Environmental consulted with the local NPWS officer, Mr. Sam Bayley, on two occasions over the phone and via email regarding the Proposed Development. This was in regard to the presence of a small soprano and common pipistrelle bat roost on the Site and the potential need for a derogation license. The local NPWS officer advised that if no impacts are considered likely to occur on any identified bat roost on the Site, a bat derogation license would not be required for the Proposed Development.

Cork County Council was also consulted and liaised with regard to the lighting plan and lux levels surrounding the soprano and common pipistrelle roost onsite. Cork City Council advised the following:

> *"……for safety reasons I would not recommend going below 5 lux on the roads. It would be too dark and the pedestrians would be at risk of being hit by motorised vehicles.*
>
> *To reduce back spill into the green area and bat routes, I would look at rear and side louvres, the possibility of another light fitting with a good rear cut off or relocation of columns to reduce light spill.'*

1.5 Species Background

There are eleven recorded bat species in Ireland, nine of which are considered resident and two which are considered vagrants [1], please see Table 1-1 below.

Table 1-1: Status of Irish Bat Species

Bat Species	Irish status	European Status
Resident Bat Species		
Soprano Pipistrelle *(Pipistrellus pygmaeus)*	Least Concern	Least Concern
Brown Long-eared Bat (*Plecotus auritus)*	Least Concern	Least Concern
Common Pipistrelle (*Pipistrellus pipistrellus)*	Least Concern	Least Concern
Lesser Horseshoe Bat (*Rhinolophus hipposideros)*	Least Concern	Near Threatened
Whiskered Bat *(Myotis mystacinus)*	Least Concern	Least Concern
Daubenton's Bat *(Myotis daubentonii)*	Least Concern	Least Concern
Leisler's bat *(Nyctalus leisleri)*	Least Concern	Least Concern
Nathusius' Pipistrelle *(Pipistrellus nathusii)*	Least Concern	Least Concern
Natterer's Bat *(Myotis nattereri)*	Least Concern	Least Concern
Vagrants		
Brandt's bat (*Myotis brandtii*)	Data Deficient	Least Concern
Greater Horseshoe Bat (Rhinolophus ferrumequinum)	Data Deficient	Near Threatened

1.6 Types of Bat Roosts

Bats were originally cave and tree-dwelling animals, but many now use buildings to roost within. Buildings are highly important as roosting sites for all Irish bat species as they use buildings for all roost types. Most significant in terms of roosts in buildings are maternity roosts, but cellars and attics can serve as hibernation sites for bats. Roosts within buildings can far exceed the numbers encountered in trees, bridges, caves or cliffs and roosts of over 1,000 bats have been recorded in buildings [2].

Bats are social animals, and most species congregate in large colonies during the later spring/summer. These colonies consist mostly of females, with some juvenile males from the previous year. Male bats normally roost individually or in small groups meeting up with the females in the late autumn, when it is time to mate. In summer, bats seek warm dry buildings in which they can give birth and suckle their young. In winter, they seek out places with a

constant low temperature and high humidity where they can become torpid and hibernate during adverse weather conditions. However, bats do not hibernate continuously during winter and will awake and hunt during mild nights when there are insects available, and it is energetically advantageous to forage [3].

One purpose of daytime tree or building inspections is to determine the potential of bat roosts within a Site. Due to the transient nature of bats and their seasonal life cycle, there are several different types of bat roosts. Where possible, one of the objectives of the surveys is to be able to identify the types of roosts present, if any.

Bats in Ireland feed exclusively on insects, and in the summer months (May – September), they generally emerge from their roosts around sunset to feed. Bats are known to use several different foraging sites in the same night and move between them to locate areas of high insect concentrations. They are also known to exhibit site loyalty and will return to the same foraging sites night after night [4].

Table 1-2 below defines the various types of bat roosts.

Table 1-2: Bat roost types (definitions written by the Natural England Earned Recognition Project) [3]

Roost Type	Natural England Definition
Day Roost	A place where individual bats or small groups, rest or shelter in the day during the summer.
Night Roost	A place where bats rest or shelter in the night but are not found in the day. May be used by a single individual on occasion, or it could be used regularly by the whole colony.
Feeding Roost	A place where individual bats, or few individuals, rest or feed for short periods during the night but are not present by day.
Transitional Roost	A place used by a few individuals or occasionally small groups for generally short periods of time on waking from hibernation or in the period prior to hibernation.
Maternity Site	A place where female bats give birth and raise their young to independence. In some species males may also be present in the maternity roost.
Hibernation Site	A place where bats may be found individually or together during winter. They have a constant cool temperature and high humidity.
Satellite Roost	An alternative roost found in close proximity to the main nursery colony used by a few individuals to small groups of breeding females throughout the breeding season.

1.7 Purpose of Survey Work

The implication of the legislative policies outlined in Section 1.2 above is that the Proposed Development needs to take account of the potential effects on bats. Survey work is necessary to establish whether the species are currently present in areas where suitable habitat exists and in areas where bats have previously been recorded. Survey work also enables appropriate mitigation measures to be incorporated into the design of the project and ensures that there are no adverse effects on the conservation status of the species.

Survey work was deemed necessary based on desktop surveys and suitable habitat for roosting, foraging and commuting bats being identified during the initial walkover of the Site.

2 METHODOLOGY

The methodologies used to establish the presence / potential presence of bats are summarised below.

2.1 Desk-Based Studies

A desk-based study was undertaken to identify records of bats within the Site. The following sources of information were reviewed:

- Aerial mapping was reviewed to identify any habitats and features likely to be used by bats. Maps and images of the Site and general landscape within the vicinity of the Site were examined for suitable foraging or commuting habitats, including woodlands and forestry, hedgerows, treelines and watercourses;
- The NPWS website was consulted to obtain the most up-to-date detail on conservation objectives for the Natura 2000 sites relevant to this assessment [5];
- The National Biodiversity Data Centre ('NBDC') website was consulted with regard to bat species distributions and bat habitat suitability index [6]; and,
- The Tree Report prepared by John Morris Arboricultural Consultancy in November 2023 [7].

2.2 Field-Based Studies

The survey design was informed by previous experience and the following publications:

- *Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes [2];*
- *A Conservation Plan for Irish Vesper Bats Irish Wildlife Manual No. 20 [8];*
- *Bat Mitigation Guidelines for Ireland. Irish Wildlife Manuals, No. 25 [4] a publication by the NPWS;*
- *Bat Surveys for Professional Ecologists - Good Practice Guidelines (3rd ed.). London: The Bat Conservation Trust [9];* and,
- *Bat Surveys for Professional Ecologists - Good Practice Guidelines (4th ed.). London: The Bat Conservation Trust [3].*

2.2.1 Walkover and Identification of Bat Habitats

The Site was assessed during the daytime walkover survey on 7th September 2023 in relation to potential bat foraging habitat and potential commuting routes. Bat habitats and commuting routes identified are considered in relation to the wider landscape to determine connectivity for local bat populations through the examination of aerial mapping.

Assessment criteria for evaluating the potential suitability of the Site for bats was done in concurrence with '*Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd ed*)' [9]. It should be noted that while a newer edition of this guidance has since been released ('*Bat Surveys for Professional Ecologists: Good Practice Guidelines - 4th ed*.) [3]' this was published in September 2023, after the active bat survey season for 2023.

Therefore, the guidance and assessment criteria followed during the tree inspection and the 2023 bat survey was the most up-to-date at the time. The surveys undertaken in 2024 followed the 4th edition guidance [3].

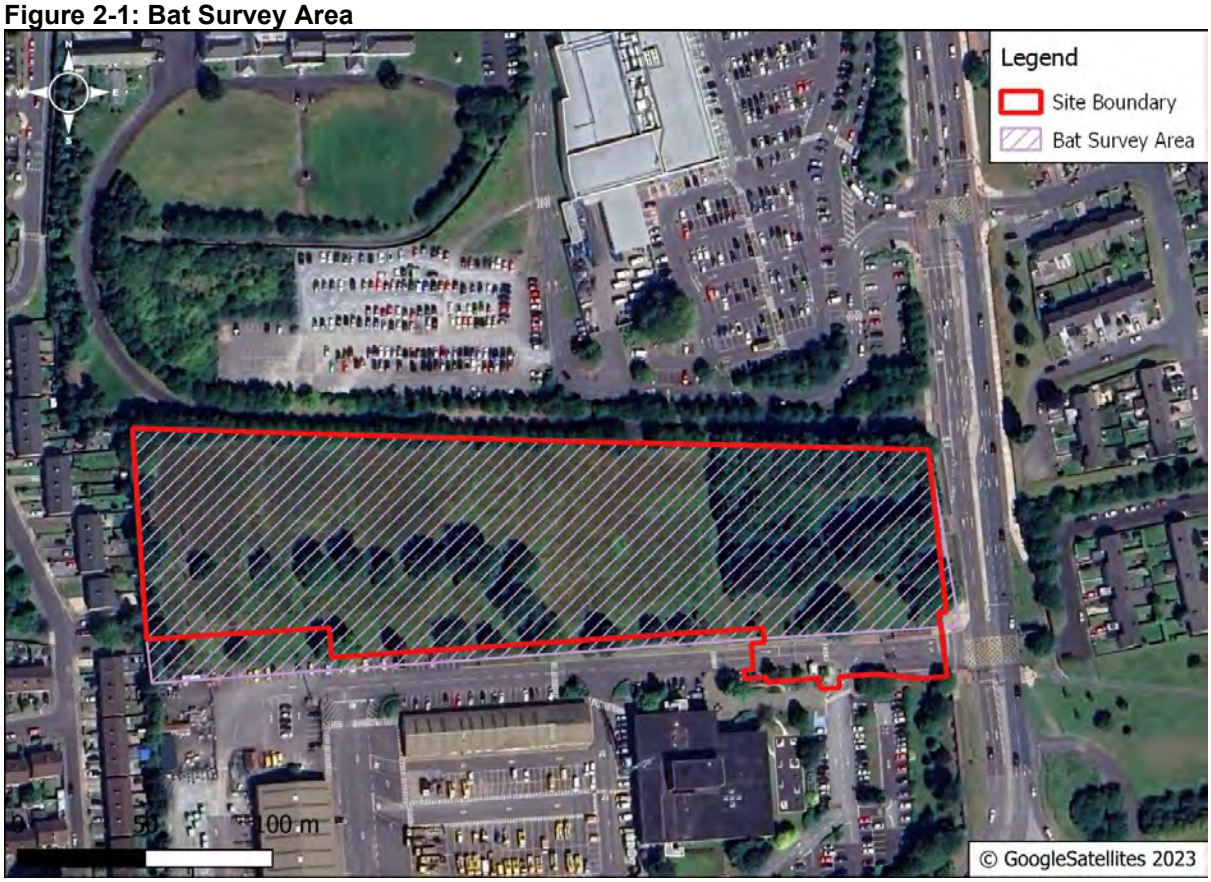
2.2.2 Tree Inspection

As part of the walkover, all trees that are due to be impacted by the Proposed Development area were assessed for the presence of features that could be utilised by roosting bats, using close-focusing binoculars. The following criteria were used:

- Presence of natural cavities, splits, cracks, loose bark and rot holes in the trunk or boughs of the tree;
- Presence of dense and woody ivy (*Hedera helix*) growth that could be used by bats for roosting;
- Evidence of bat droppings, which may also be seen as a black streak beneath holes, cracks, branches, etc;
- Presence of smooth edges with dark marks and urine stains at potential entrances to roosts;
- Adjoining habitat which are likely to be important to bats, including the river corridor, and hedge / treelines within the Site and the vicinity of the Site that offer a variety of potential foraging, roosting and commuting opportunities for bats; and,
- Adjoining potential roosts / known roosts identified. This raises the likelihood of a tree being of benefit as bats may move roosts if the roost becomes too hot or cold during roosting and a nearby alternative roost is highly desirable.

Figure 2-1 below details the full extent of the bat survey area.

Figure 2-1: Bat Survey Area



The trees in the centre of the Site and the southeast of the Site were subject to dusk emergence surveys as they were identified as having the potential to support roosting bats. Additionally, the linear features onsite were assessed for levels of activity from foraging and

commuting bats through transect surveys following the vantage point surveys over the course of 2023 (see Figure 2-2) and 2024 (see Figure 2-3 below).

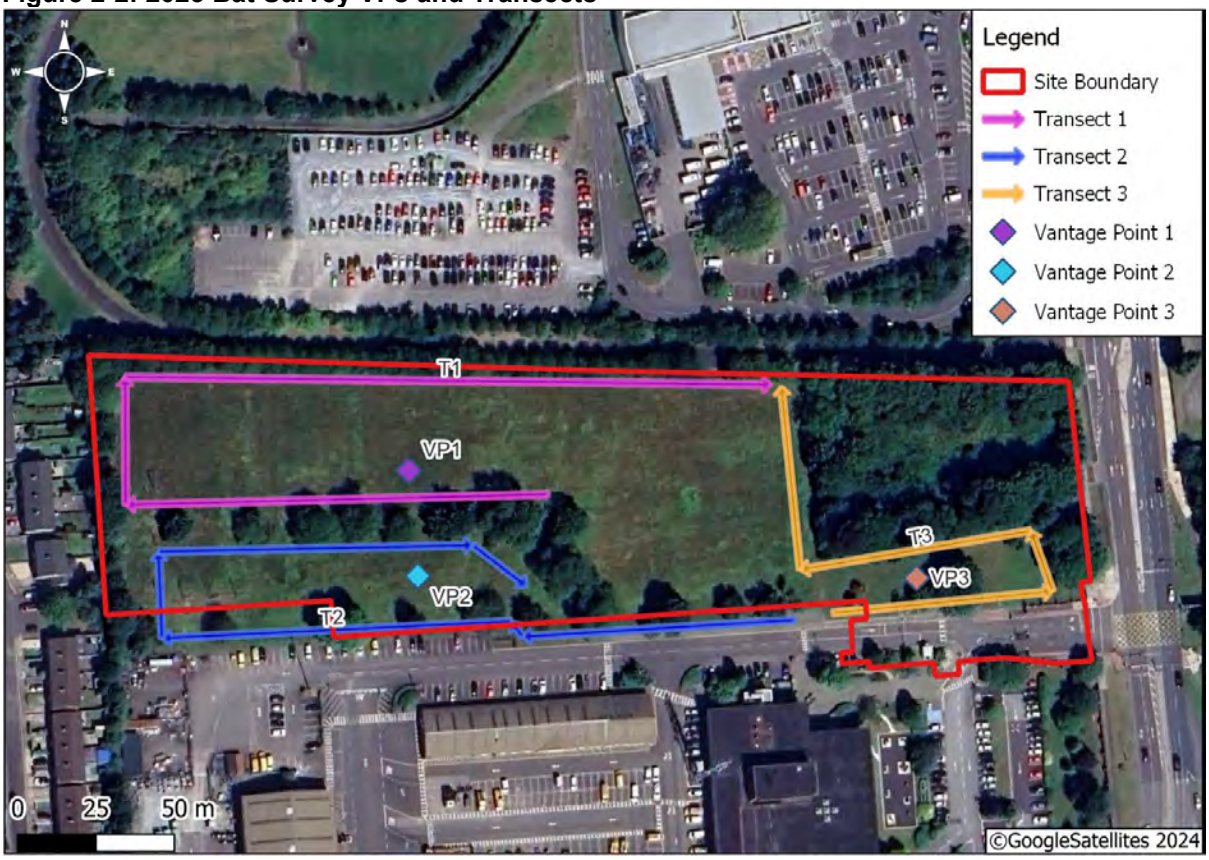
2.2.3 Bat Surveys

2.2.3.1 2023 Dusk Emergence and Transect Survey

The 2023 dusk emergence and transect survey took place on 27th September 2023. This survey commenced 15 minutes before sunset and ended two hours after sunset, therefore encompassing the typical emergence times of Irish bat species. Three MOR Environmental Ecologists surveyed three separate locations of the Site at pre-determined vantage points ('VPs'). Two MOR Environmental Ecologists were positioned on either side of the trees in the centre of the Site (VP1 and VP2) to observe the trees identified as having bat roost potential. VP3 was located in the southeast of the Site, observing the treeline identified as having bat roost potential. The VP survey lasted for one hour and 15 minutes. Following the vantage point survey, the surveyors also walked pre-determined transects for one hour (T1, T2 and T3) to capture levels of bat activity within the area.

A combination of visual observation and listening to ultrasonic bat calls using frequency division bat detector (Batbox Duet) and Echo Meter Touch2 Pro (Apple IOS) were used throughout the emergence survey. Bat calls were recorded digitally using Edirol Roland R-05 recorder and Echo Meter Touch2 Pro and stored on these devices for data analysis at a later time.

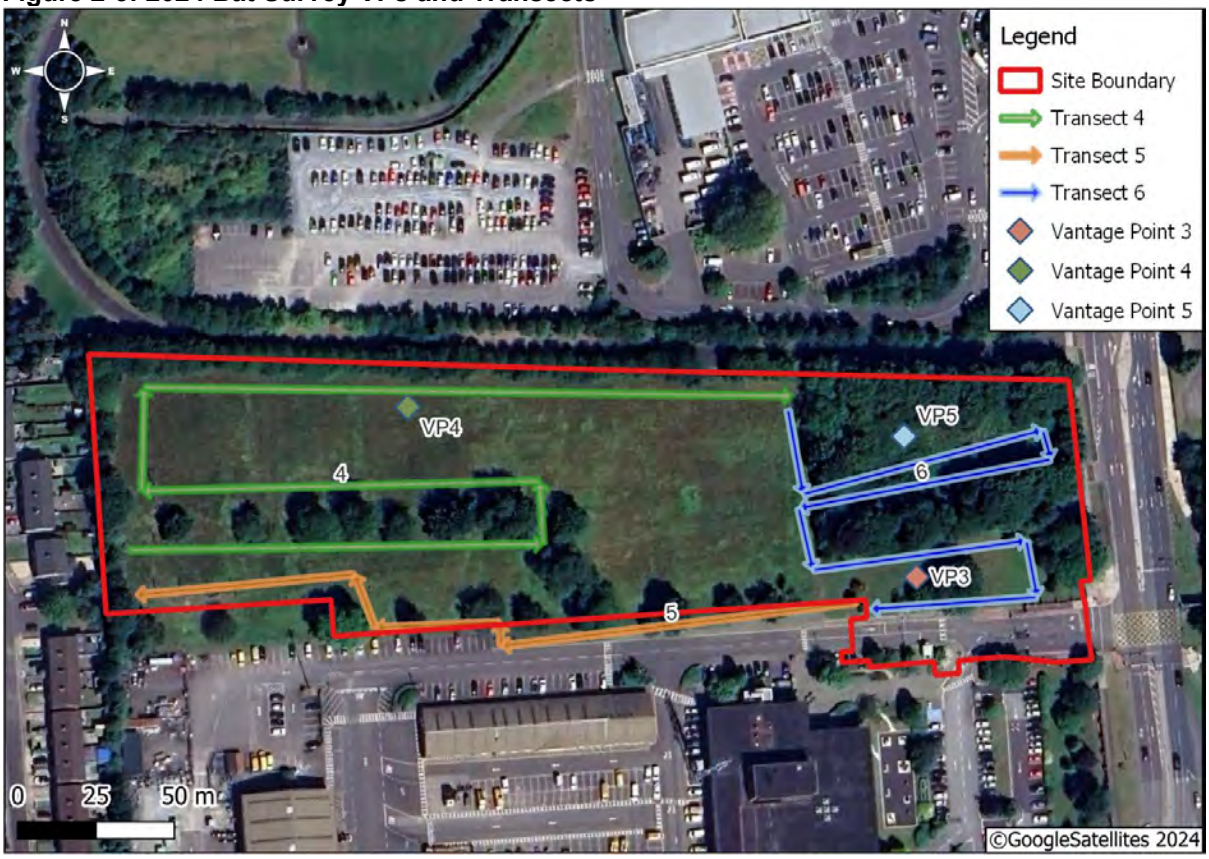
Figure 2-2: 2023 Bat Survey VPs and Transects



2.2.3.2 2024 Dusk Emergence and NBW[1] Surveys

Three dusk emergence and nighttime bat walkover ('NBW') surveys took place in 2024 – the first on 23rd May 2024, the second on 13th June 2024 and the third on 27th August 2024. Based on the results of the 2023 and 2024 surveys, the VPs and transects were modified for the 2024 surveys (see Figure 2-3 below). VP3/T5 and VP4/T4 were used during all three surveys in 2024, but VP5/T6 was only used during the final survey in August 2024.

Figure 2-3: 2024 Bat Survey VPs and Transects



The methodology followed during these surveys was the same as the 2023 survey, where the VPs lasted one hour and 15 minutes (commencing 15 minutes before sunset), and the NBW survey took place after this for one hour.

A combination of visual observation and listening to ultrasonic bat calls were used during the emergence and NBW survey. Each surveyor used one HIKMICRO Lynx 2.0 Pro Thermal Monocular as a night vision aid ('NVA') during the emergence survey to aid in monitoring the building onsite for bat emergence. See Plate 2-1 below for the viewshed from VP3 and Plate 2-2 below for the viewshed from VP4.

[1] The 4th edition of Bat Conservation Trust's *'Bat Survey for Professional Ecologists – Good Practice Guidelines'* refers to activity/transect surveys as 'Nighttime Bat Walkover' (NBW) surveys. It should be noted that the methodology for these surveys is the same as previously regarded transect/activity surveys.

Plate 2-1: VP3 Viewshed

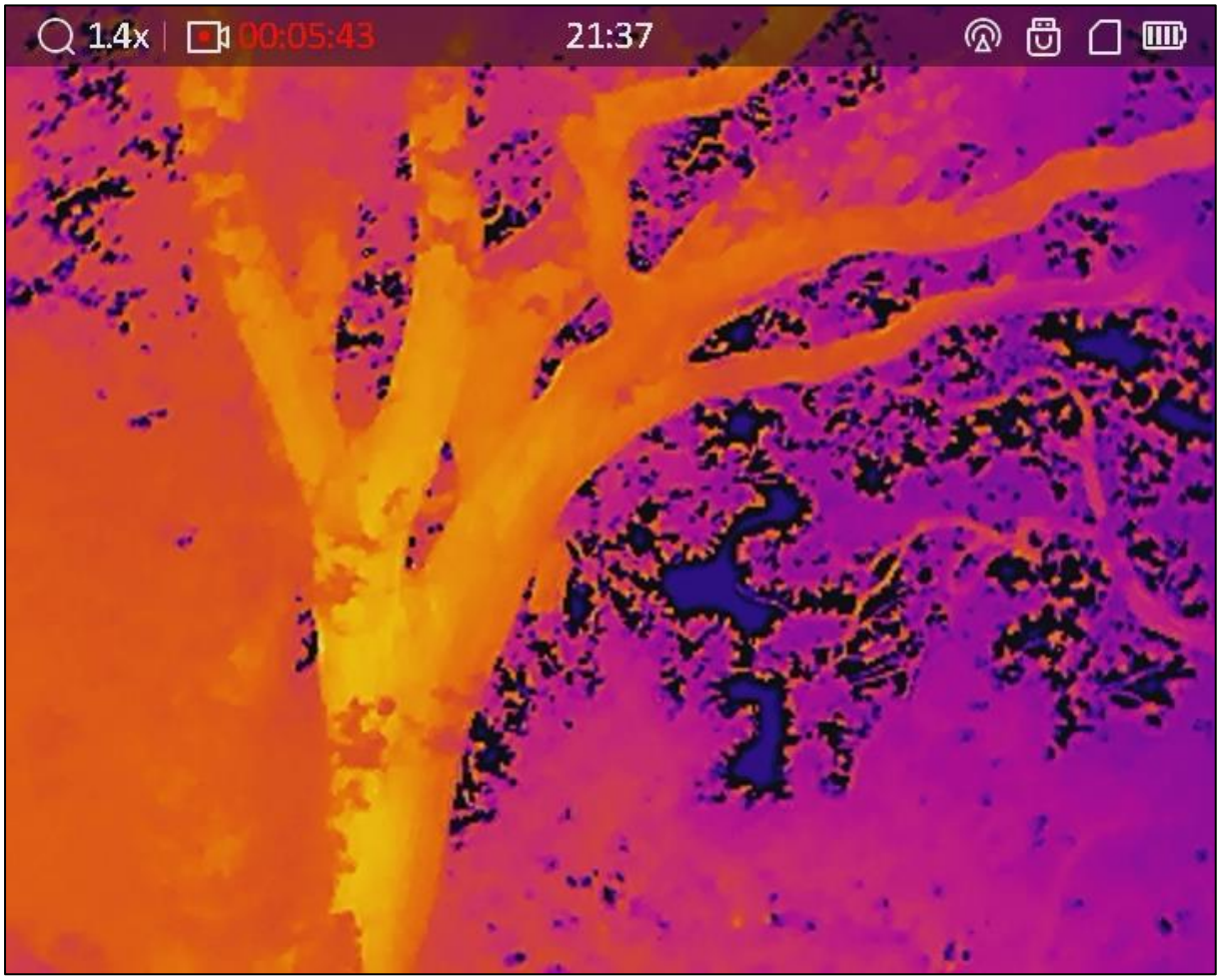


Plate 2-2: VP4 Viewshed

2.2.4 Data Analysis

The bat recordings taken during the surveys were analysed using the software KaleidoscopePro to aid in the identification of bat species present. A combination of the visual observations taken during the survey and the number of bat passes[2] identified on the recordings were used to determine bat activity levels within the area.

All sound file data recorded during the bat surveys was analysed using Kaleidoscope Pro Software. The 'auto-ID' function was used to batch assign the top auto-ID species for each sound file. This approach allows identification of bats to genus level for *Myotis* species, and to species level for other bats found in Ireland. Separation of *Myotis* species is complicated by the high degree of overlap between call characteristics. This software can also automatically sort sound files that contain only noise ('non-bat') from sound files that contain bat passes.

Following the batch analysis, all non-pipistrellus calls (excluding Nathusius' pipistrelle) and no ID calls were manually checked by a capable bat acoustic analyst. Auto-ID calls from common pipistrelle and soprano pipistrelle were not manually checked as it is generally accepted that due to the lack of complexity within these species calls the auto-ID function is sufficient.

2.3 Survey Limitations

As mentioned in Section 2.2.1 above, during the 2023 surveys, the most up-to-date guidance at the time was the 3rd edition of the Bat Conservation Trust's 'Bat Surveys for Professional

[2] It is important to acknowledge that bat calls provide a measure of bat activity rather than the number of individuals in a population. In practice, bat activity (as, for example, represented by 100 recordings) could be from 100No. bats passing the detector or one bat passing 100No. times [9].

Ecologists - Good Practice Guidelines' [9]. In October 2023, an updated 4th edition of this guidance was released by Bat Conservation Trust [3]. Therefore, during the 2024 emergence surveys, the most up-to-date guidance was followed, which was the 4th edition of 'Bat Surveys for Professional Ecologists'.

Bat surveys are a snapshot of the bat activity within an area at the time of surveying. Therefore, it is important that bat surveys are comprised of a number of surveys designed to provide as much information on bat usage of the area. Therefore, a combination of surveys was used to determine the importance of the Site on local bat populations.

All survey work was conducted in accordance with current best practice guidelines. All of the surveys were undertaken when there was no rain or wind, and the temperature was above 10°C (see Table 2-1). In these weather conditions, bats will not have been deterred from flying and no survey limitations were encountered.

However, during the second half of the second dusk bat survey in 2024, there was rain and the survey had to end before the full 2 hours and 15 minutes. However, as the survey covered the typical emergence time of most bat species it is not considered that this survey limitation significantly impacts the results of the survey.

Table 2-1: Bat Survey Metadata

Date	Survey Type	Sunset	Survey Times (Start-End)	Weather	Temperature (°C) Start - End
2023 Survey					
27/09/2023	Dusk	19:23	19:08 – 21:23	Dry, gentle breeze	16°C - 14°C
2024 Surveys					
23/05/2024	Dusk	21:35	21:20 – 23:30	Dry, light breeze	12°C - 10°C
13/06/2024	Dusk	21:54	21:39 – 23:15	Dry until 23:15, moderate breeze	13°C
27/08/2024	Dusk	20:31	20:16 – 22:31	Dry, light breeze	18°C - 17°C

2.4 Evaluation of the Importance of the Site for Bat Species

The value of the importance of the Site for bat species was evaluated using the ecological evaluation guidance given in the National Roads Authority ('NRA') guidance on assessment of ecological impacts of National Road Schemes [10]. This guidance provides ratings for resources based primarily on geographic context and allows for resources at the following levels:

- International Importance;
- National Importance;
- County Importance (or vice-county in the case of plant or insect species);
- Local Importance (Higher Value); and,
- Local Importance (Lower Value).

3 RESULTS

3.1 Desk-Based Results

Prior to conducting the field surveys, a desk-based review of information sources was completed.

According to the NBDC, seven of the nine resident Irish bat species have been recorded within 2km of the Site in the past 10 years - Daubenton's bat, Leisler's bat, Natterer's bat, common pipistrelle, soprano pipistrelle, whiskered bat and brown long-eared bat (Grid Codes: W66J, W66P, W66U, W67F, W67K W67Q) [6].

Table 3-1 provides details of the habitat suitability index for the Site [6]. The habitat suitability index identifies the geographical areas that are suitable for individual species. The index ranges from 0 to 100, with 100 being the most favourable to bats. The index presented is for all species combined, in addition to the individual species indices within the Site.

From the indices, it can be established that the Site has an overall high habitat suitability index range of 28-36. Excluding lesser horseshoe bats and Nathusius' pipistrelle, which have very low and low suitability, respectively, all other bats could be expected to occur within the vicinity of the Site.

Table 3-1: Habitat Suitability Index

Bat Species	Suitability Index Range	Suitability Index Level
All Bat Species	28-36	High
Soprano Pipistrelle *(Pipistrellus pygmaeus)*	39-45	High
Brown Long-eared Bat (*Plecotus auritus)*	39-49	High
Common Pipistrelle (*Pipistrellus pipistrellus)*	39-47	High
Lesser Horseshoe Bat (*Rhinolophus hipposideros)*	0-4	Very Low
Whiskered Bat *(Myotis mystacinus)*	32-44	High
Daubenton's Bat *(Myotis daubentonii)*	22-29	Moderate
Leisler's Bat *(Nyctalus leisleri)*	38-46	High
Nathusius' Pipistrelle *(Pipistrellus nathusii)*	6-15	Low
Natterer's Bat *(Myotis nattereri)*	27-36	Moderate

3.2 Field Based Results

The initial Site assessment identified a number of mature trees and treelines that have the potential to support commuting and foraging bat species.

3.2.1 Tree Inspection

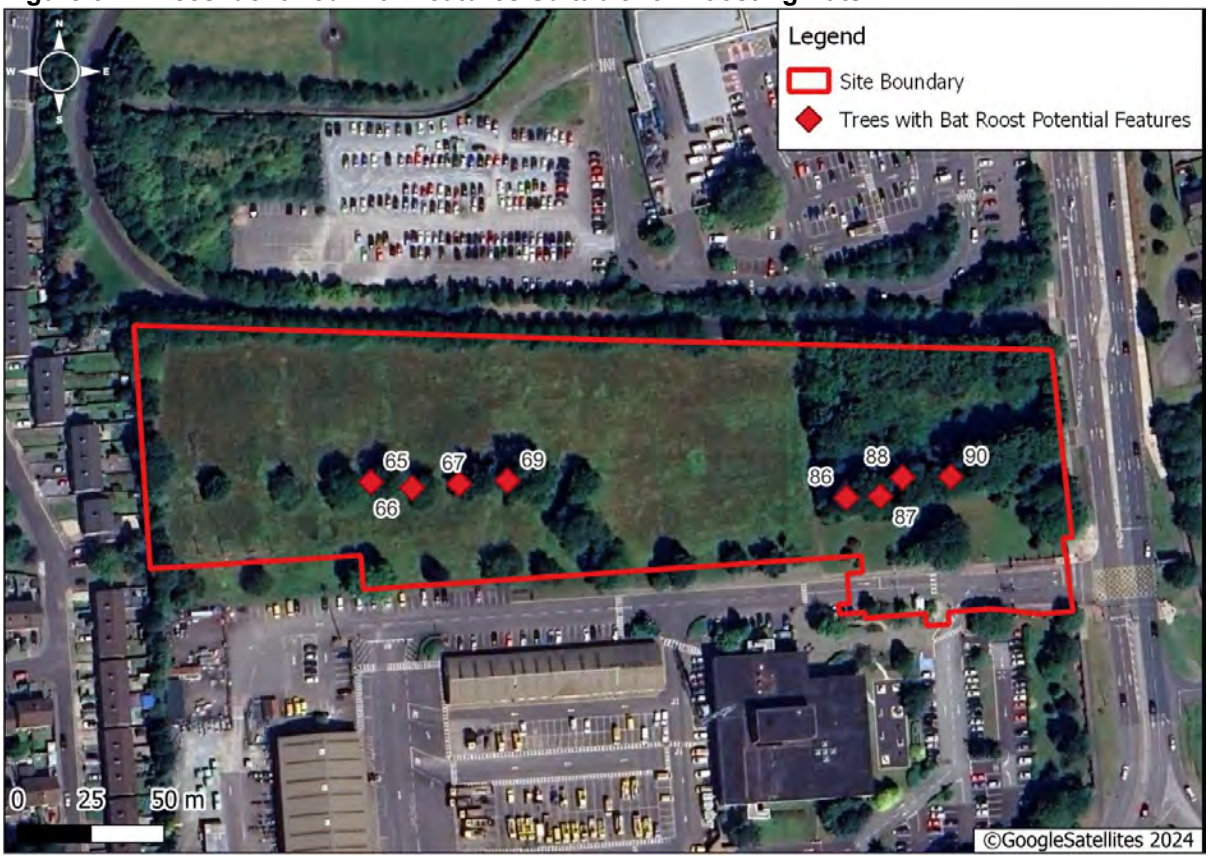
The tree inspection survey identified eight trees with features suitable for potential roosting bats (Table 3-2 and Figure 3-1). It should be noted that the tree numbers in Table 3-2 and Figure 3-1 correspond to the numbers presented in the Tree Constraints Plan prepared by John Morris in 2023 [7].

It should be noted that two bat boxes were installed on the mature oak trees in the east of the Site.

Table 3-2: Tree Survey Results

Tree No.	Species	Bat Potential	Ivy	Knotholes	Loose Bark	Cracks and Crevices
69	Ash (*Fraxinus excelsior*)	√	√	X	X	√
67	Ash (*Fraxinus excelsior*)	√	√	X	X	X
66	Ash (*Fraxinus excelsior*)	√	√	X	X	X
65	Ash (*Fraxinus excelsior*)	√	√	X	X	X
86	Oak species (*Quercus* spp.)	√	√	X	X	√
87	Oak species (*Quercus* spp.)	√	√	X	X	√
88	Oak species (*Quercus* spp.)	√	√	X	X	√
90	Oak species (*Quercus* spp.)	√	√	X	X	√

Figure 3-1: Trees Identified with Features Suitable for Roosting Bats



3.2.2 Dusk Emergence and Transect / NBW Survey Results

The surveyors identified bats using the trees in the centre of the Site as flight paths and foraging over areas of grassland and the trees onsite. Soprano pipistrelle were also observed roosting in tree No.88 and bat boxes on tree No.87 onsite. Common pipistrelle, Nathusius' pipistrelle, Leisler's bats and brown long-eared bats were also recorded during the bat surveys onsite.

It was concluded that the Site was of high local importance for foraging and commuting bats, and of high local importance for roosting bats.

Further details from the surveys are provided below.

3.2.2.1 Dusk Emergence and Transect Survey 27/09/23

Sunset was at 19:23. VP3/T3 had the highest levels of bat activity and a bat roost was identified.

VP1/T1

The first bat recorded at this VP was a soprano pipistrelle at 19:22, one minute before sunset. This bat was not observed by the surveyor at VP1. Soprano pipistrelle continued to be recorded (but not observed) from 19:22 – 19:30. A Leisler's bat was also recorded but not observed passing multiple times from 19:25 – 19:29. The first bat observed was a soprano pipistrelle at 19:33, seen commuting from east to west between the trees onsite. Common pipistrelle were recorded during the survey passing from 19:58 – 20:00, but not observed by the surveyor. A common pipistrelle was first observed between 20:07 – 20:08 foraging onsite. At 20:17 a common pipistrelle was also observed flying from south to north between trees. The last bat seen was a common pipistrelle at 20:52 foraging onsite, but common pipistrelle and soprano pipistrelle continued to be recorded infrequently throughout the survey. The last bat recorded was at 21:10.

Overall, there was moderate activity recorded at VP1/T1, with ca. 27 bat passes recorded per hour. Soprano pipistrelle had ca. 11 passes per hour, common pipistrelle had ca. 11 passes per hour and Leisler's bats had ca. five passes per hour.

VP2/T2

The first bat recorded and observed by the surveyor at this VP was a soprano pipistrelle at 19:29, seen commuting to the east of tree 66 onsite. Shortly afterwards at, 19:32 a soprano pipistrelle was seen commuting west and north between trees 65 and 66. Between 19:50-19:56 a common pipistrelle was observed foraging over the amenity grassland to the south of VP2. For the remainder of the emergence survey, common pipistrelle and soprano pipistrelle were observed infrequently commuting between the trees onsite and foraging over the grassland.

During the transect survey, no bats were observed and activity was very low. The only bats recorded were a common pipistrelle at 21:10 when the surveyor was walking by the trees in the centre of the Site, and a soprano pipistrelle at 21:16 when the surveyor was walking along the hedgerow / treeline at the western boundary of the Site.

Overall, there was low activity at VP2/T2, with ca. seven bat passes recorded per hour. Soprano pipistrelle had ca. two passes per hour, common pipistrelle had ca. four passes per hour and Leisler's bats had ca. one pass per hour.

VP3/T3

The first bat activity observed at VP3 was at 19:27, four minutes after sunset. This was a soprano pipistrelle flying out of a bat box attached to tree No.87 onsite. Shortly afterward, on an adjacent tree (number 90), three soprano pipistrelle were observed emerging from and re-entering this tree. These bats were also observed commuting over the trees in this area at this time and also entering into tree 88. At 19:43, two soprano pipistrelle were observed flying out of tree 90, into trees 87 and 88 and back out again from these trees. At 19:51, one soprano pipistrelle was seen flying out of tree 88, over the surveyor at VP3 and into tree 87 multiple times until 19:53. At 19:55, a soprano pipistrelle was observed flying out of the bat box on tree No.87 to an adjacent bat box multiple times. At 19:58, a soprano pipistrelle emerged from tree 88 and flew back into tree 90. At this time, a soprano pipistrelle was also observed foraging over the trees in this area. The final roosting activity during the emergence survey was observed at 20:06, where a soprano pipistrelle was observed flying between trees No.87, 88 and 89. The only other species recorded during the emergence survey was brown long-eared bats from 19:56 – 20:16, but not observed by the surveyor.

Activity was much lower during the transect survey. No bats were observed by the surveyor, but soprano pipistrelle and common pipistrelle were recorded during the activity survey. The last bat recorded was at 21:09. However, this bat was a soprano pipistrelle observed flying into a bat box on tree No.87 onsite.

Overall, there was high activity VP3/T3, with ca. 32 bat passes recorded per hour. Soprano pipistrelle had ca. nine passes per hour, common pipistrelle had ca. 21 passes per hour and brown long-eared bats had ca. two passes per hour.

As bats were using four trees and bat boxes for roosting, further surveys were needed on the Site to classify the roost types onsite.

3.2.2.2 Dusk Emergence and NBW Survey 23/05/2024

Sunset was at 21:35.

VP3/T5

The first bat recorded at VP3 was a common pipistrelle at 21:44 but not observed by the surveyor. Soprano pipistrelle and one singular Nathusius' pipistrelle call were also recorded from 21:48 – 21:53. At 21:53, two soprano pipistrelle were observed flying in and out of tree 88 in the east of the Site (see Plate 3-1 and 3-2 below). These bats were also observed foraging above the trees in this area. Soprano pipistrelle, common pipistrelle and one Nathusius' pipistrelle were recorded but not observed at VP3 until the NBW survey commenced at 22:35.

The first bat recorded at T5 was a soprano pipistrelle from 22:49 – 22:52. Shortly afterwards at 22:55 a soprano pipistrelle was observed foraging over trees No.86, 87, 88 and 89. This was the last bat observed during the NBW survey, but soprano pipistrelle were also recorded when the surveyor was in the same location, and also when the surveyor was walking along the scattered trees along the southern boundary of the Site. The last bat recorded was at 23:17.

Overall, there was moderate activity at VP3 with ca. 26 bat passes recorded per hour. Soprano pipistrelle had ca. 21 passes per hour, common pipistrelle had ca. three passes per hour and Nathusius' pipistrelle had ca. two passes per hour.

There was less activity during the NBW survey, with ca. 16 bat passes recorded during the hour-long survey. Soprano pipistrelle were the only species recorded at T5.

As bats were seen emerging from / re-entering into trees onsite, it is considered that bats are roosting within these trees.

Plate 3-1: Soprano pipistrelle emerging from tree 88 onsite

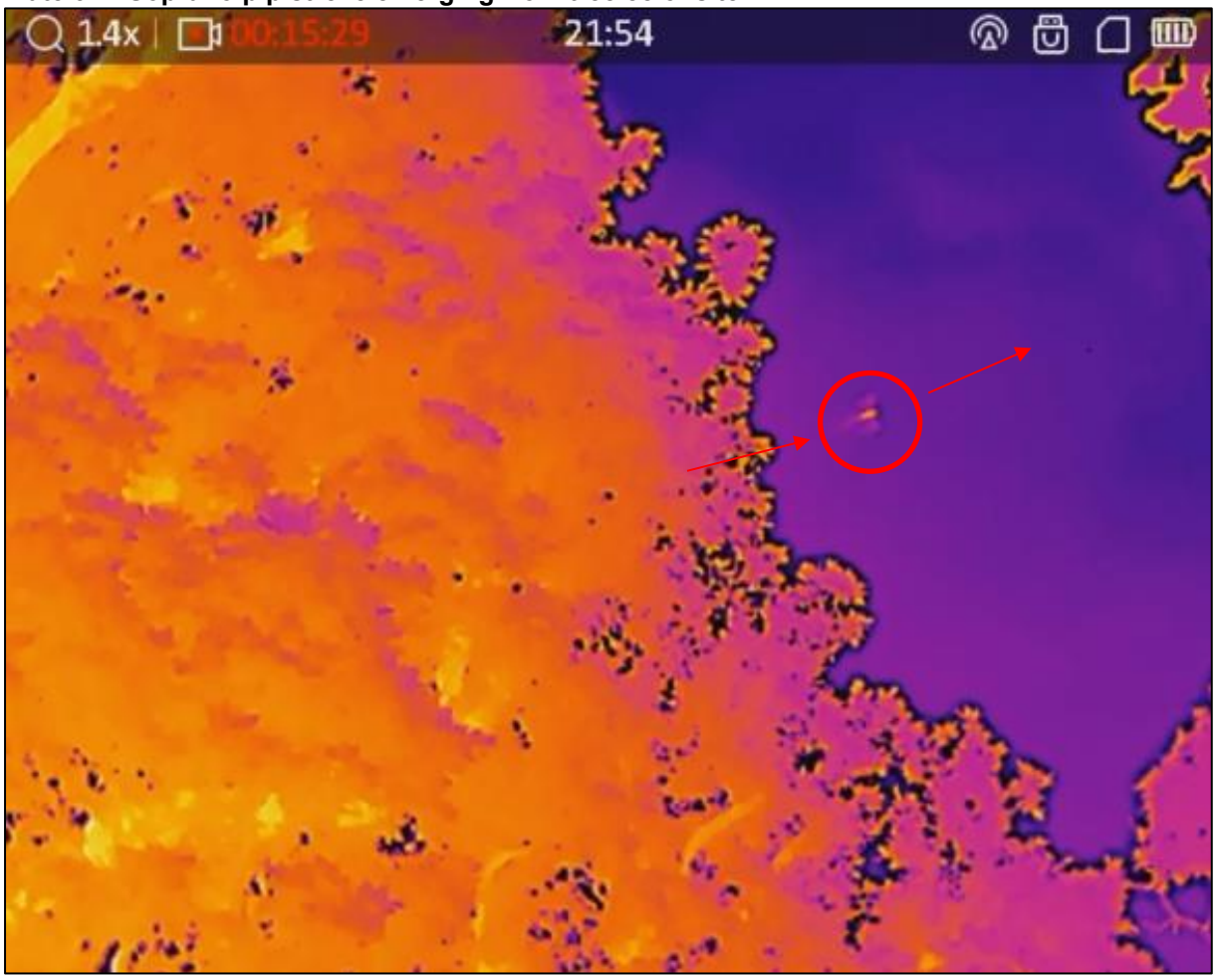
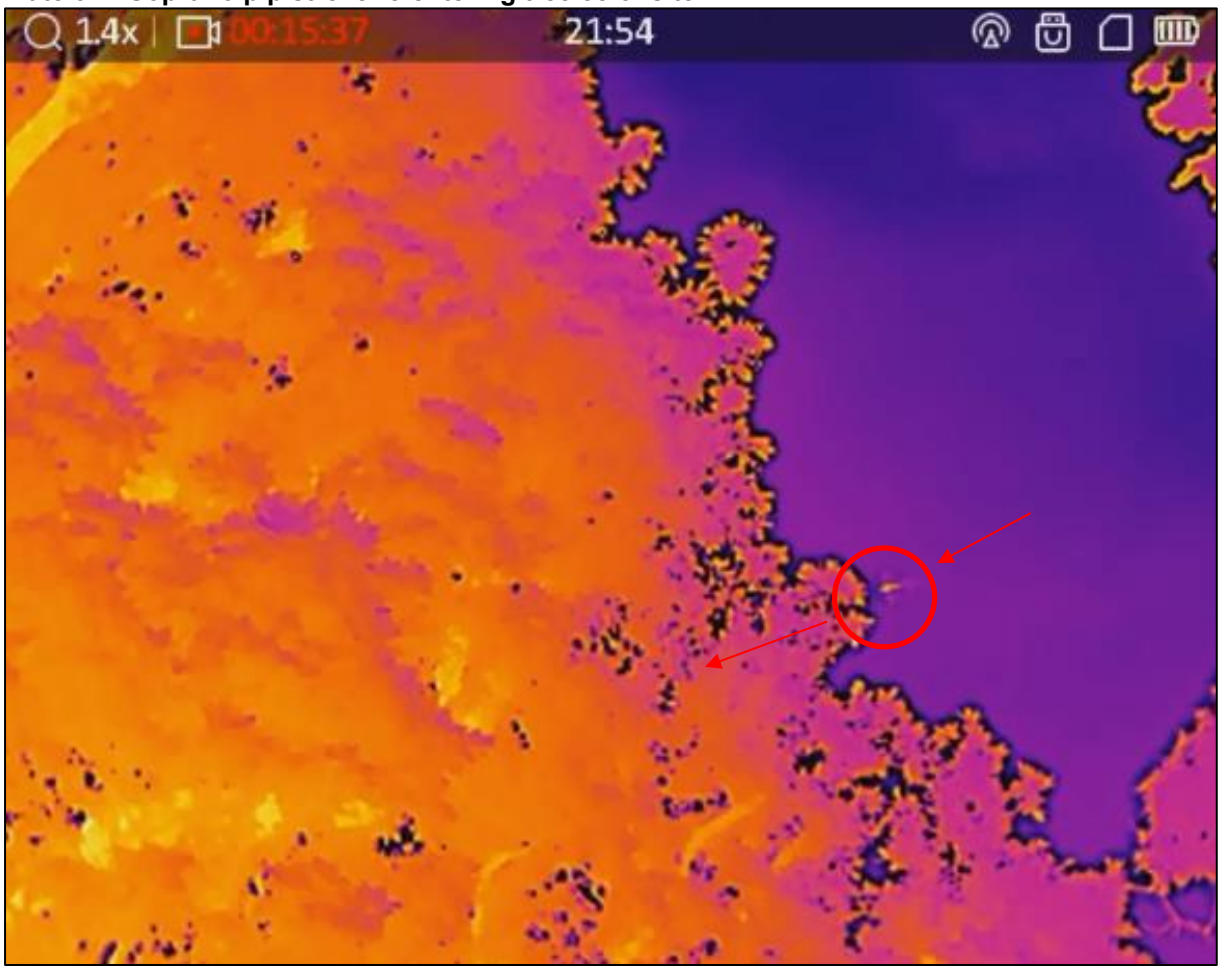


Plate 3-2: Soprano pipistrelle re-entering tree 88 onsite



VP4/T4

The first bat recorded at VP4 was a Nathusius' pipistrelle at 21:51, but not observed by the surveyor. A common pipistrelle was also recorded but not observed at 22.07. A singular call from a Leisler's bat was also recorded at 22:29. These were the only bats recorded during the emergence survey at VP4.

There was slightly more activity during the NBW survey. The first bat recorded and observed was a soprano pipistrelle foraging between trees ca. 2.5m above the ground in the centre of the Site. At 22:49 a common pipistrelle was observed commuting east along the hedgerow / treeline at a height of 4m at the northern boundary of the Site. Shortly afterwards, at 22:51, two common pipistrelles were observed commuting over the same hedgerow treeline at the same height but towards the west. These were the last bats observed at T5, but common pipistrelle and soprano pipistrelle were recorded infrequently for the remainder of the NBW survey while the surveyor was walking along the eastern and northern boundaries of the Site. The last bat recorded was at 23:34.

Overall, there was very low activity at VP4, with three bats (Nathusius' pipistrelle, common pipistrelle and Leisler's bat) recorded during the emergence survey. There was moderate activity during the NBW survey, with ca. 14 bat passes recorded during the hour-long survey. Soprano pipistrelle had ca. five passes per hour and common pipistrelle had ca. nine passes per hour.

No bats were observed emerging from/re-entering into the trees identified as containing bat roosts during the 2023 survey and the first 2024 survey.

3.2.2.3 Dusk Emergence and NBW Survey 13/06/2024

Sunset was at 21:54.

VP3/T5

The first bat recorded at VP3 was a Nathusius' pipistrelle at 22:09, but not observed by the surveyor. Shortly afterwards, at 22:12, a Leisler's bat was recorded, and at 22:13, a common pipistrelle was recorded. Neither bat was observed by the surveyor. The first bat observed at VP3 was common pipistrelle at 22:25, observed flying from the direction of the ESB substation into tree number 88. This was the only bat observed at VP3, but Leisler's bats, soprano pipistrelle and common pipistrelle were recorded infrequently for the remainder of the emergence survey.

Common pipistrelle were the only species recorded during the NBW survey. No bats were observed by the surveyor, but bats were recorded along the transect when the surveyor was walking by the trees in the east of the Site. The last bat was recorded at 23:07.

Overall, low activity was recorded at VP3/T5, with ca. eight bat passes recorded per hour. Soprano pipistrelle had ca. two passes per hour and common pipistrelle had ca. six passes per hour. There was one individual recording each of Nathusius' pipistrelle and Leisler's bat.

As bats were seen emerging from / re-entering into trees onsite, it is considered that bats are roosting within these trees.

VP4/T4

The first bat recorded and observed at VP4 was a Leisler's at 22:10. This bat was foraging above VP4 for ca. 10 minutes, over the trees and grassland in the centre of the Site. Shortly afterwards, two bats were observed foraging over a tree to the east of VP4. The recordings taken during the survey at this time identified calls from Leisler's bats and soprano pipistrelle. There were no bats recorded or observed during the NBW survey.

Overall, there was moderate activity recorded at VP4/T4, with ca. 21 bat passes recorded per hour. Common pipistrelle had ca. 2 passes per hour and Leisler's bats had ca. 19 passes per hour.

3.2.2.4 Dusk Emergence and NBW Survey 27/08/2024

Sunset was at 20:31.

VP3/T5

The first bat recorded at VP3 was a common pipistrelle at 20:46 but was not observed by the surveyor. Shortly afterwards at 20:51, two common pipistrelle were seen around tree 90. One bat was observed commuting around this tree towards the east of the Site. One of these bats was seen emerging from tree 90 and flying into tree 88. Shortly afterwards at 20:52, another common pipistrelle was observed emerging from tree 90 from a different emergence point (see Plate 3-3 below). No other bat emergence from the trees surveyed at this VP was recorded for the remainder of the emergence survey. Common pipistrelle and soprano pipistrelle were observed foraging and commuting over the trees throughout the emergence survey.

During the NBW survey, bats were observed foraging over the grassland in the southwest of the Site and commuting over the trees in this area of the Site. Common pipistrelle, soprano pipistrelle, Leisler's bat and brown long-eared bat calls were recorded during the NBW survey. The last bat recorded was at 22:30.

Overall, there was moderate activity at VP3/T5, with ca. 38 bat passes recorded per hour. Common pipistrelle had ca. 28 passes per hour, soprano pipistrelle had ca. five passes per hour, Leisler's bat had ca. three passes per hour and brown long-eared bat had ca. two passes per hour.

Two common pipistrelle were observed to be emerging from tree 90, and one bat was observed entering into tree 88. Therefore, it is considered that a bat roost is present in trees 88 and 90.

Plate 3-3: Common pipistrelle emerging from tree 90 onsite

VP4/T4

The first bats recorded and observed at VP4 were two Leisler's bats at 20:42, seen commuting from the east of the Site over towards the west, and then out of the Site towards the south. Further calls from Leisler's bat and soprano pipistrelle were recorded after this, but no bats were observed by the surveyor. The next bat observed at VP4 was a soprano pipistrelle at 21:06, seen commuting west over the trees towards the west of the Site. At 21:06 a common pipistrelle was seen commuting through the trees in the west of the Site towards the hedgerow / treeline along the northern boundary of the Site. No bats were seen for the remainder of the emergence survey, but calls from Leisler's bat, common pipistrelle and soprano pipistrelle were infrequently recorded.

Activity was higher during the NBW survey. A common pipistrelle was recorded from 21:33-21:39 passing multiple times and foraging over the grassland in the northwest of the Site. Soprano pipistrelle and common pipistrelle were recorded when the surveyor was walking to the north of the trees in the centre of the Site. From 22:18-22:28, common pipistrelle were observed constantly foraging over the grassland in the same area as above in the northwest of the Site. One singular soprano pipistrelle and brown long-eared bat were also recorded during this time. The last bat was recorded at 22:28.

Overall, there was moderate activity at VP4/T4, with ca. 34 bat passes recorded per hour. Common pipistrelle had ca. 24 passes per hour, soprano pipistrelle had ca. five passes per

hour, Leisler's bat had ca. four passes per hour and brown long-eared bat had ca. one pass per hour.

No bats were observed roosting in the trees or bat boxes at this VP during this survey.

VP5/T6

The first bat recorded and observed at VP5 was two bats commuting from the north towards the vegetation in the east of the Site, constantly from 20:42-20:29. The recordings taken during this time recorded bat calls from common pipistrelle, soprano pipistrelle and Leisler's bat, so it is likely that the bats observed were a combination of these species. Two bats were also seen commuting north out of the Site at 20:52. The recordings taken during this time recorded bat calls from common pipistrelle, soprano pipistrelle and brown long-eared bat. Bats were also observed commuting and foraging around the trees in the east of the Site and commuting out towards the north of the Site. Bats were also observed commuting from these trees towards other areas in the west of the Site. Based on the recordings taken during the emergence survey, it is likely that the bats observed were a combination of common pipistrelle, soprano pipistrelle, Leisler's bat and brown long-eared bat.

During the NBW survey, bats were predominantly recorded when the surveyor was walking the transect along the vegetation in the east of the Site. A singular call from a *Myotis* species was also recorded at 21:57, but this bat was not observed by the surveyor. A soprano pipistrelle and brown long-eared bat call was recorded at 22:18 when the surveyor was walking along the southern boundary of the Site by the road to the south of the Site. The final bat call was recorded at 22:31.

Overall, there was moderate bat activity at VP5/T6, with ca. 42 bat passes recorded per hour. Common pipistrelle had ca. 14 passes per hour, soprano pipistrelle had ca. 12 passes per hour, brown long-eared bat had ca. 12 passes per hour, Leisler's bat had ca. three passes per hour and *Myotis* species had ca. one pass per hour.

No bats were observed roosting in the trees or bat boxes at this VP during this survey.

Figure 3-2: Bat Activity within the Site

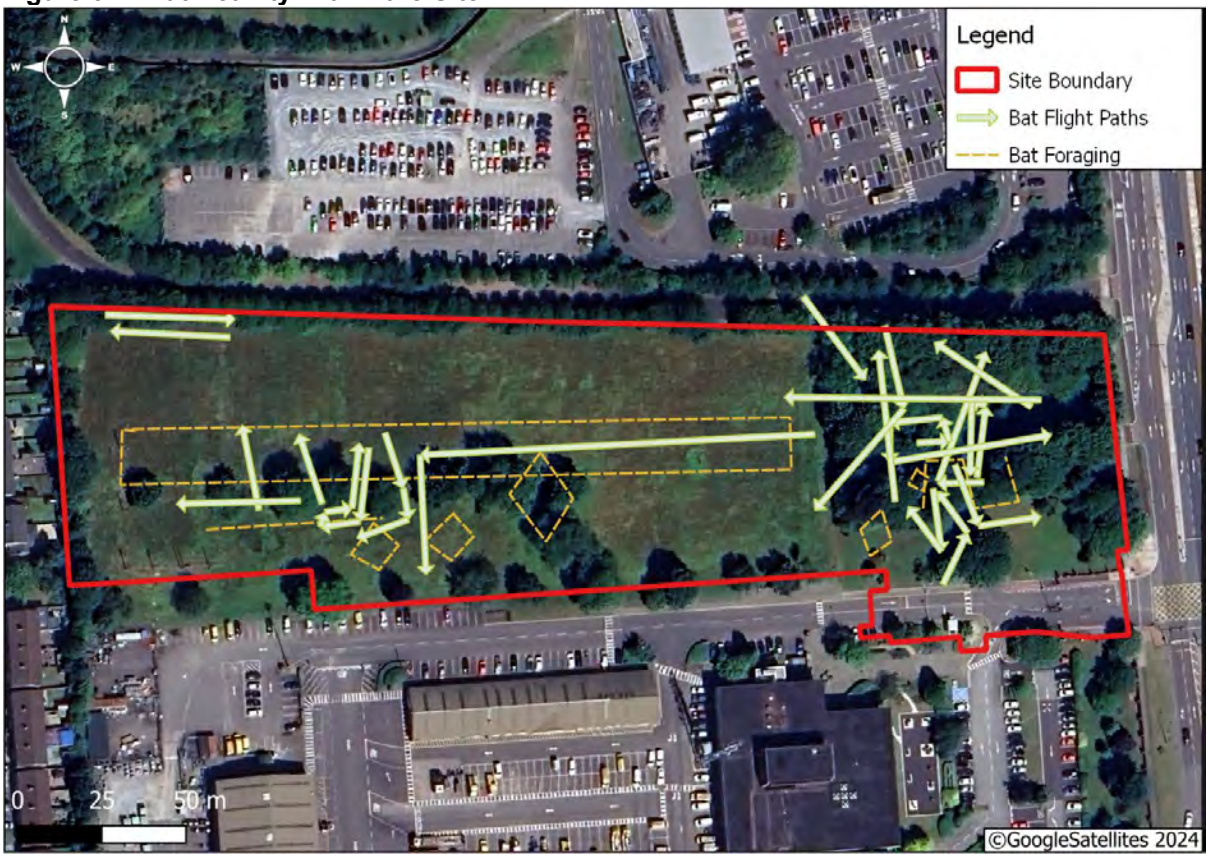
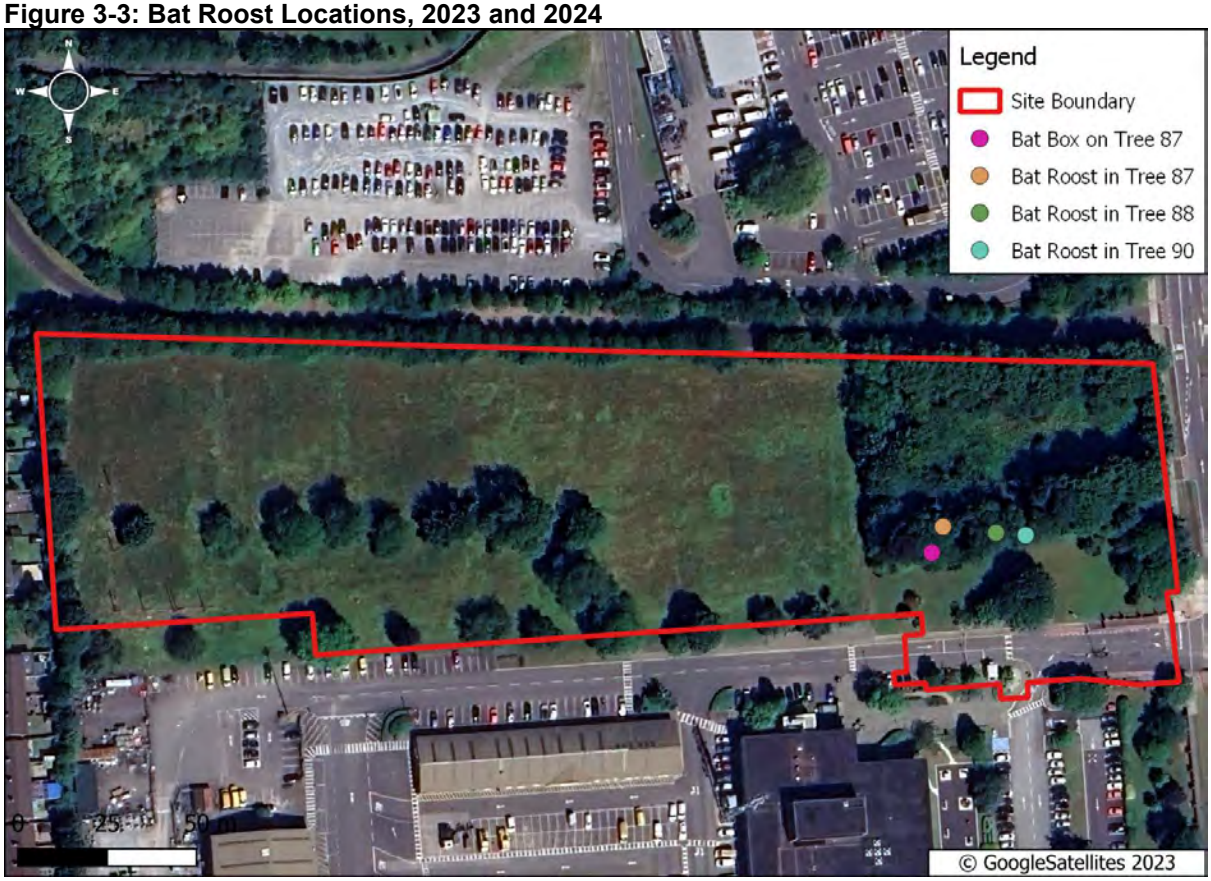


Figure 3-3: Bat Roost Locations, 2023 and 2024



3.3 Overall Results

The following bats were recorded as a result of the 2023 emergence and transect survey and the 2024 emergence and NBW surveys:

- Soprano pipistrelle, common pipistrelle, Leisler's bats, brown long-eared bats and Nathusius' pipistrelle were recorded during the surveys onsite;
- The 2023 surveys identified bats (soprano pipistrelle) roosting in trees 87, 88 and 90 two bat boxes on tree 87; and,
- The 2024 surveys identified bats roosting (soprano pipistrelle and common pipistrelle) in trees 88 and 90.

3.4 Roost type

Table 3-3 below shows an excerpt from the *Bat Surveys for Professional Ecologists - Good Practice Guidelines* (4th ed.) on the roosting preferences of common pipistrelle and soprano pipistrelle.

Table 3-3: Roosting preferences of different species

Species scientific names	Species common names	Roosting preferences
Pipistrellus pipistrellus and P. pygmaeus	Common pipistrelle and soprano pipistrelle	Maternity colonies are found mainly in buildings, usually roosting out of sight in crevices. Colonies may use a number of sites through the summer but are often loyal to the same sites for many years (Thompson, 1992). Maternity colonies are extremely variable in terms of numbers, from 20 to over 1,000 bats (Speakman *et al.,* 1999). Barlow and Jones (1999) found that soprano pipistrelle colonies (median of 203) tended to be larger than those of the common pipistrelle (median of 76). Davidson-Watts *et all.* (2006) reported common pipistrelle shifting roosts between pregnancy and lactation. Davidson-Watts (2007) found that roost selection was based on temperature for common pipistrelle and on surrounding habitats (woodland and water) for both species. Males roost singly or in small groups in the summer, in buildings or trees (Lundberg and Gerell, 1986). Churches are used for roosting sites. Bat boxes are used by both males and females, but generally only males use them during the summer (Park *et al.,* 1998). These species do not use underground sites for hibernation, but are sometimes found in cracks and crevices or buildings in the winter (BCT/BMT Cordah Limited, 2005). Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten *et al.,* 2016). Swarming by common pipistrelle has been observed in the UK (Bell, 2022 and Tomlinson, 2020) but this phenomenon requires further research. Ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in large buildings in highly urbanised environments.

During the 2023 survey, soprano pipistrelle were observed emerging from / entering into the following locations onsite:

- Tree 90;
- Tree 88;
- Tree 87; and,
- Bat boxes on Tree 87.

While the exact number of individual bats was difficult to classify during the 2023 survey due to multiple instances of emergence and re-entry, taking a precautionary approach, it was assumed that each bat recorded was a new individual. Therefore, the roost size in 2023 was 11.

During the 2024 surveys, soprano pipistrelle and common pipistrelle were observed emerging from / entering into the following locations onsite:

- Tree 88; and,
- Tree 90.

Two soprano pipistrelle were observed roosting in the trees onsite during the May 2024 survey, one common pipistrelle was observed roosting in the trees onsite during the June 2024 survey and two common pipistrelle were observed roosting in the trees onsite during the August 2024 survey. It can be concluded that the roost size in 2024 was five.

As soprano pipistrelle and common pipistrelle maternity roosts can consist of 20 to over 1000 individuals [9] it is considered reasonable to conclude that **a maternity roost is not present onsite**. Based on the numbers of soprano pipistrelle and common pipistrelle recorded during the 2023 and 2024 surveys, it is more likely that the bats roosting within the trees and bat boxes onsite are a small group of males using these features as a **night roost / feeding roost**. The soprano pipistrelle night / feeding roost present within the trees and bat boxes onsite will henceforth be referred to as one collective roost ('the soprano and common pipistrelle night / feeding roost').

4 IMPACT ASSESSMENT AND MITIGATION

The following bat species were recorded during the 2023 and 2024 bat surveys: common pipistrelle, soprano pipistrelle, Leisler's bat, brown long-eared and Nathusius' pipistrelle. This represents five of the nine resident bat species in Ireland. The lesser horseshoe bat and *Myotis* species were not recorded during the surveys. All bat species recorded during the bat surveys are Annex IV species under the EU Habitats Directive and all have a favourable status in Ireland.

The impact assessment and mitigation will be undertaken in relation to the five bat species recorded within the Site: common pipistrelle, soprano pipistrelle, Leisler's bat, brown long eared and Nathusius' pipistrelle.

Additionally, the surveys identified a soprano and common pipistrelle night / feeding roost onsite. While the trees that bats were identified to be roosting in during the 2023 and 2024 surveys will be retained as part of the Proposed Development (numbers 87, 88 and 90, and the bat boxes on tree 87), it is considered that there could still be a significant negative effect on this bat roost due to the installation of lighting onsite and the change in land use.

4.1 Potential Impacts on Bats

The Proposed Development will require the removal of hedgerow / treelines and individual trees, ground clearance works and installation of lighting. The Proposed Development could result in the temporary loss of a soprano pipistrelle night / feeding roost due to disturbance during construction, change in land use and installation of lighting.

Bat species within the Site could potentially be affected during both the construction phase and operational phase of the Proposed Development. The principal potential impacts of the Proposed Development on bat fauna may be summarised as follows:

- Loss of flight paths and foraging habitat;
- Impacts associated with lighting during the construction and operational phase; and,
- Temporary loss of a soprano and common pipistrelle night / feeding roost.

4.1.1 Loss of Flight Paths and Foraging Habitat

Based on the levels of bat activity recorded during the 2023 and 2024 bat surveys, it was concluded that the Site was of high local importance for commuting and foraging bats. Bats were observed foraging over and commuting over the trees onsite, in addition to commuting along the northwestern boundary and over the trees in the centre and east of the Site.

To facilitate the Proposed Development, some individual trees in the centre and south of the Site and areas of hedgerows / treelines and scrub will be removed.

It is considered that without the appropriate consideration of the loss of the foraging and flight path habitats for bats as mentioned above, the Proposed Development could have a negative impact on commuting and foraging bat species. However, subject to an appropriate lighting strategy being implemented during the construction and operational phases of the Proposed Development (see Section 4.2 below), bats will be able to continue to utilise habitats on the perimeter of the Site.

4.1.2 Lighting of the General Area (street lighting, security lighting etc.)

Lighting for the Proposed Development has the potential to impact bat species in relation to commuting and foraging potential within the Site and the wider area. The degree of this impact is dependent on the sensitivity of the bat species, as some bats are more tolerant of lighting. Pipistrelle species and Leisler's bats will tolerate low levels of lighting, while brown long-eared bats and *Myotis* species are very sensitive to lighting and require the light levels to be below 1lux.

As brown long eared bats were recorded within the Site, it is important to ensure that lighting is directional and that there are buffer zones or screen plantings established to reduce light spillage onto the hedgerow / treelines that bats were observed using during the surveys.

In the absence of an appropriate lighting scheme, it is considered that the Proposed Development could have a negative impact on foraging and commuting bats.

4.1.3 Temporary loss of a soprano and common pipistrelle night / feeding roost

Given that the Proposed Development will require a change in land use, elevated levels of disturbance onsite and installation of lighting, there is the potential for the soprano and common pipistrelle night / feeding roost to be temporarily lost. The mitigation detailed below will be followed during the construction phase of the Proposed Development.

As per the '*Bat Mitigation Guidelines for Ireland'* prepared by the NPWS, it is considered that the scale of impact due to temporary disturbance (outside the breeding season) and temporary destruction, then reinstatement of a night roost is '*Low'* [11]. Additionally, as the roost status of the night / feeding roost onsite is considered to be '*small numbers of common species, not a maternity site',* the mitigation requirement is considered to be flexible [11].

4.2 Mitigation Measures

As previously mentioned, all bat species in Ireland, including soprano pipistrelle are protected under Annex IV of the Habitats Directive and the Wildlife Acts 1976. Mitigation measures should also be proposed and meet the requirements for protecting roosting, foraging and commuting bats within the vicinity of the Site.

The following mitigation measures are proposed:

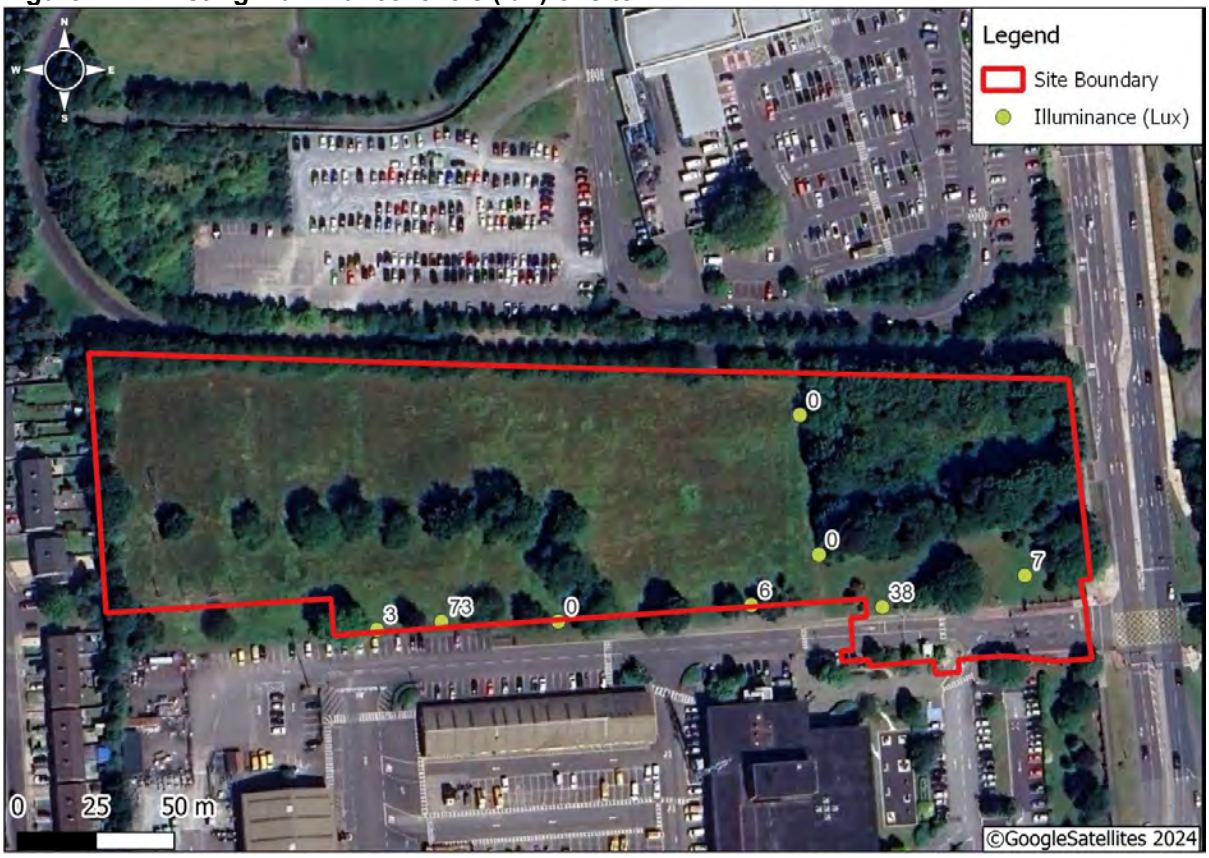
4.2.1 Lighting Plan

Bats are averse to excessive lighting, subsequently, impacts could occur as a result of an inappropriate lighting strategy. Therefore, it is important that the lighting installed for the Proposed Development will be completed with sensitivity for local wildlife while still providing the necessary lighting for human usage.

Existing Lighting

During the bat survey on 13/06/2024 between 22:15 and 23:15, one MOR Environmental ecologist used a Reed R1930 lux meter to take readings of the illuminance levels in different areas of the Site once the sun had completely set. Figure 4-1 below shows the illuminance levels in lux (lx) taken onsite.

Figure 4-1: Existing illuminance levels (lux) onsite



The Site ranges from complete darkness (0lx) to very brightly lit (73lx). The area in the east of the Site where bats were identified to be roosting was mostly dark (between 0lx and 7lx). However, bats were identified foraging in an area close to where lighting levels were 38lx, suggesting that bats are adapted to a certain level of lighting onsite.

Proposed Lighting

Following consultation with the NPWS and Cork City Council, EDC Mechanical & Electrical Consulting Engineers have produced a revised Outdoor Lighting Report that is submitted as part of the overall planning application.

In the ecological sensitive area of the Site (the location of the soprano and common pipistrelle night / feeding roost) on page 9 of the Outdoor Lighting Report the illuminance levels have been calculated as:

- A minimum of 0.26lux (lx);
- A maximum of 4.72lx; and,
- An average of 1.01lx.

It should be noted that these illuminance levels have been revised following consultation with the NPWS and Cork County Council and that the previous average lx levels in the ecologically sensitive area of the Site were an average of 7.5lx. Additionally, no luminaire columns will be installed directly adjacent to the soprano and common pipistrelle night/feeding roost.

In some locations around the ecologically sensitive area, lux levels will spill up to 3lx onto retained trees. However, the majority of the ecologically sensitive area will remain relatively dark for bats. Additionally, a mostly dark corridor will be maintained along the northern boundary of the Site as drawings show that lux levels of up to 1lx will spill onto this hedgerow / treeline (page 5 of the Outdoor Lighting Report). Directional downward lighting will be

installed in this area of the Site, allowing bats to continue commuting over the hedgerow / treeline as they were observed doing during the bat surveys.

The areas in the south of the Site where the main road and pedestrian paths will be located have higher illuminance levels for health and safety reasons. As illuminance levels will reach up to 28lx in some areas here, it is unlikely that bats will use this area of the Site.

As mentioned in Section 4.1.2 above, *Pipistrellus* species and Leisler's bats will tolerate low levels of lighting, while *Myotis* species and brown long-eared bats usually require light levels to be below 1lx. Brown long-eared bats were recorded in very low amounts during the surveys. It should be noted that the majority of the activity recorded onsite were attributed to common pipistrelle, soprano pipistrelle and Leisler's bats, which are considered to be less sensitive to light pollution than brown long-eared bats.

It is considered that this revised Outdoor Lighting Plan will result in minimal disturbance to roosting, foraging and commuting bats, especially in the ecologically sensitive area and along the northern hedgerow / treeline. Additionally, given the location of the Site within an urban area and adjacent to the ESBN, bat species in the area are considered to be habituated to increased lighting levels.

Following the installation of the lighting associated with the operational phase of the Proposed Development, the ecological clerk of works ('ECoW') for the project will undertake a further Site inspection to inspect the lighting patterns and lux levels along the hedgerows / treelines on the Site and the findings will be presented to the planning authority.

4.2.2 Protection for Retained Hedgerow / Treelines and Individual Trees

Details and locations of the trees that are to be retained as part of the Proposed Development can be found in Appendix C of the EcIA – Landscape Strategy Report prepared by Park Hood Chartered Landscape Architects and in the Tree Report prepared by John Morris Arboricultural Consultancy [7].

The following mitigation measures will be followed in order to ensure that there are no adverse impacts to the retained hedgerows / treelines onsite. These mitigation measures are included in the Arboricultural Impact Assessment & Method Statements Report:

Tree Protective Fencing

- *'A protective fence will be erected around retained trees, prior to the commencement of materials or machinery being brought onto site, removal of soil or any form of construction. The area within this fencing will form the construction exclusion zone (CEZ) and it will be afforded protection at all times. No works will be undertaken within this zone that causes compaction to the soil, severance of tree roots or damage to tree canopies;*
- *The fence is to be sited in accordance with the Tree Impact & Protection Plan attached to this report;*
- *Details of the minimum distance for fencing from trees can be found in the Tree Schedule attached to this report;*
- *The precise form of fencing can vary provided it is fit for purpose and prevents damaging activities within the CEZ. For a proposal of this nature, a number of fencing/protection solutions will be required including the Heras 151 system of fencing, timber boards and hessian sacking wrapped in chestnut cleft pale;*
- *Details of the various types of fencing is provided in Appendix 3;*
- *The fence will gave signs attached to it stating that defines a CEZ that no works are permitted beyond it;*
- *An example of a tree protection sign is provided in Appendix 4;*

- *The protective fencing may only be removed following completion of all construction works; and,*
- *The following principles will be adopted by site personnel within the CEZ during construction, to ensure protection of retained trees:*
    - *No level changes.*
    - *No excavations.*
    - *No fires.*
    - *No use of herbicides.*
- *No storage of materials, machinery or access for construction workers.'*

Site Compounds & Facilities

- *'Site compounds and facilities will be located outside of all Root Protection Areas (RPAs) and CEZs as identified on the Tree Impact and Protection Plan (TIPP*).'

Site Cranes, Piling Rigs and Machinery

- *'The location of all drilling rig, supporting vehicles / equipment should be sited outside of RPAs to avoid soil compaction.'*

Pollution Control

- *'Any storage or mixing station located outside of the construction exclusion zone will be located in a place that minimises the risk of contaminated runoff entering to prevent adverse physiological impacts on trees that may result from contact with rooting environments. This may be achieved by using a non-permeable membrane on the ground, surrounded by sandbags or sawdust to contain any spillage.'*

Temporary Ground Protection

- *'Where it is not practical to protect RPAs by use of protective fencing, BS5837 allows for the fencing to be set back and the soil shielded by ground protection. A range of methods can be used including retaining existing hard surfaces or structures that already protect the soil, installing new temporary surfaces, or a combination of both. Whatever the choice of method, the end result must be that the underlying soil remains undisturbed and retains the capacity to support existing and new roots;*
- *If fences are to be set back on a temporary the following specifications are recommended for use as temporary ground protection to protect roots and soil;*
- *For pedestrian traffic, a plywood board with a minimum thickness of 40mm should be laid on a minimum of 100mm deep woodchip, with geotextile membrane beneath;*
- *For small plant machinery with a gross weight of up to 2 tonne, interlinking aluminium or composite tracks with sufficient load bearing capacity should be laid on a minimum of 150mm deep woodchip, with geotextile membrane beneath;*
- *For heavy machinery with a gross weight of up to 3.5 tonne, interlinking aluminium or composite track with sufficient load bearing capacity should be laid over a minimum layer of 200mm deep woodchip, with a geotextile membrane beneath;*
- *For weights above 3.5tonne a specialist temporary ground protection should be used that is capable of both supporting the required loads whilst providing protection to RPAs;*
- *Any temporary protective surfaces must remain in place until all construction activity is finished;*

- *Upon completion of construction works, the temporary ground protective measures should be removed working backwards from on top of the system. This will need to be done carefully ensure that there is no excavation or compaction of the original surface or change in ground levels; and,*
- *Once this material has been removed vehicular access to this part of the Site will not be permitted.'*

Excavations and Removal of Existing Surfaces

- *'All excavation must be carried out carefully using spades, forks and trowels, taking care not to damage the bark and wood of any roots. Specialist tools for removing soil around roots using compressed air such as an Air Spade may be an appropriate alternative to hand digging, if available;*
- *All soil removal must be undertaken with care to minimise the disturbance of roots beyond the immediate area of excavation. Where possible, flexible clumps of small roots, including fibrous roots, should be retained if they can be displaced temporarily or permanently beyond the excavation without damage;*
- *If digging by hand, a fork should be used to loosen the soil and help locate any substantial roots. Once the roots have been located the trowel should be used to clear the soil away from them without damaging the bark. Exposed roots that are to be removed should be cut cleanly with a sharp saw or secateurs 100-200mm behind the final face of the excavation; and,*
- *Roots temporarily exposed must be protected from direct sunlight, drying out and extreme temperatures by appropriate covering. Roots greater than 25mm in diameter should only be cut in exceptional circumstances. Roots greater than 100mm in diameter should only be cut after consultation with the project arboriculturist.'*

Upgrading Existing Surfaces

- *'Where upgrading of existing hard surfaces is required, the preferred option will be to leave the surface in place and install the new surface specification on top;*
- *If the retained surface is impermeable, it may be appropriate to remove or puncture sections to create a more favourable environment for roots beneath, before the new surface is laid, through consultation with the project arboriculturist;*
- *Where the existing surface is to be removed or upgraded, the surface layer should be excavated down the existing subbase and the new surface specification installed on top, to prevent any damage to roots beneath;*
- *It is recommended that where possible, new and upgraded hard surfaces should be porous (e.g. permeable brick paving, porous resin bound aggregate or tarmac) to allow the flow or water and oxygen to roots. Wet concrete should only be poured if an impermeable geotextile fabric has first been installed to prevent soil contamination from toxic leachate; and,*
- *New surfaces and upgraded surfaces should be set back from the base of stems by a minimum of 500mm to allow space for future growth and minimise the risk of distortion with new surface.'*

Permanent 'No-Dig' Ground Protection

- *'Where permanent hard surfaces are required within the RPA, there must be no excavation into the soil, either through the lowering of levels, other than the removal of turf or other surface vegetation. This is typically achieved using a three-dimensional cellular confinement system, which is capable of meeting load bearing needs while also protecting roots from the effects of compaction from regular vehicular movement;*

- *A method statement and product specification is provided in Appendix 5;*
- *The methodology has been provided by the product manufacturer and it will be the responsibility of the contractor to ensure that whatever system is used, it is installed in accordance with the latest guidelines provided by the manufacturer;*
- *It is recommended the final product to be used is specified by a Structural Engineer to meet the required load bearing requirements.'*

Installation of Boundary Treatments & Lighting Columns

- *'The erection of a new posts or lighting columns will require 'hand-digging' in the location where any foundations or posts are required within RPAs, to prevent damage to tree roots;*
- *Any soil removal during excavations must be undertaken with care to minimise root disturbance and avoid any damage to root bark;*
- *Exposed roots that are to be removed should be cut cleanly with a sharp saw or secateurs 10- 20mm behind the final face of the excavation;*
- *Roots greater than 25mm diameter should only be cut in exceptional circumstances and following approval by the project arboriculturist;*
- *Fibrous clumps of roots must be retained where possible, with any exposed roots protected from desiccation by covering them with a damp hessian sack or damp sharp sand (builders' sand must not be used); and,*
- *Prior to backfilling, roots must be surrounded with topsoil or sharp sand before the excavated earth is replaced. The soil must be free of contaminates and any foreign objects that may be potentially harmful to roots.'*

Installation of Services

- *'All services and utilities will be installed within existing service routes and where possible outside of RPAs;*
- *Where installation of utilities or services is required within RPAs, working practices will be adopted in accordance with the National Joint Utilities (NJUG) 10, Vol 4, Issue 2, 2007 'Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees';*
- *In accordance with 4.1.3 of NJUG 10 2007, acceptable techniques in order of preference include: a) Trenchless; b) Broken Trench; and c) Continuous Trench. Trenchless methods involve the use of thrust boring machinery, whilst broken and continuous trench methods require that excavations within RPAs are carried out using hand tools only; and,*
- *For a proposal of this nature, broken or continuous trench methods are the most appropriate and should be employed as per NJUG 10, to prevent any damage to tree roots or disruption to soil rooting environments.'*

4.2.3 Protection for Bats during the Felling of Mature Trees

In order to ensure that vegetation clearance works in relation to the Proposed Development do not have a significant impact on bats, the following procedures and mitigation measures will be implemented as part of the Proposed Development:

- In advance of construction commencing, updated bat inspections will be required to confirm the presence / absence of roosting bats within the trees that will be removed as part of the Proposed Development;

- The felling of trees with suitable roosting features will be carried out under the supervision of the ECoW and will be felled using hand tools only;
- The ECoW will visually inspect the trees following the felling for the presence of bats;
- Felled trees should be pushed gently to allow potential bats within to become active;
- Felled trees should then be left in place for at least 24 hours to allow bats to escape before removal offsite;
- If bats were to be found to be roosting within the trees, further measures will be considered in order to protect bats against disturbance and the NPWS will be consulted for advice and a derogation licence will be obtained if required; and,
- The management and removal of trees at the Site will be undertaken in a systematic way to ensure that retained trees will not be damaged by the works.

4.2.4 Landscape Plan

A Landscape Strategy Report has been prepared by Park Hood Chartered Landscape Architects and attached as Appendix C of the EcIA. This report details the key areas that will be created as part of the landscape plan, including retaining some existing trees and planting high and medium shrubs, low planting, low shrubs, understory planting and hedgerows. The planting onsite will attract insects, which may provide additional foraging opportunities for bats onsite.

The following landscape recommendations are also advised:

- Avoid the use of herbicides and chemicals (weed killers, etc.) within the development zone where possible.

4.2.5 Provision of Alternative Roosting Habitats

It is proposed to install artificial bat boxes within the Site. Artificial bat boxes will be erected on suitable mature trees within the Site. Artificial bat boxes can provide vital roosting places in habitats devoid of natural roosting opportunities. Bat boxes can also provide additional suitable roosting habitats for bats in an area.

Bat boxes should be placed in a position sheltered from strong wind and exposed to the sun for part of the day. The boxes will be located in / close to linear features, such as the treelines and placed a minimum of 2m above the ground. The number and location of which will be specified by an ecologist. Figure 4-3 below shows suitable bat roost box examples including a Pole Mounted Bat Box, Bat Box Schwegler 1FF and Vivara Small Bat Box.

The exact location of the bat boxes will be determined by an experienced ecologist after the completion of the construction phase of the Proposed Development. This is to allow the ecologist to assess the onsite conditions and will ensure that the bat boxes are situated in the most appropriate location possible.

Figure 4-2: Examples of suitable bat boxes

4.2.6 Monitoring

An ECoW will be appointed for the duration of the works and will undertake the necessary monitoring works as required to ensure the implementation of the ecological mitigation measures.

The following monitoring works will take place to ensure that the works comply with the recommendations detailed in this report:

- Following the installation of the lighting associated with the operational phase of the Proposed Development, a suitably qualified and experienced ecologist will undertake a further Site inspection to inspect the lighting patterns and lux levels along the hedgerows / treelines onsite;
- For the protection of the existing roost, ongoing monitoring and surveys of the identified bat roost will be undertaken during the construction works associated with the Proposed Development; and,
- When the construction works have finished an updated dusk emergence bat survey will be undertaken at the Site to ensure that the trees onsite are still being used by roosting bats and the surrounding habitats are still being utilised by foraging and commuting bats. The findings will be presented to the Planning Authority.

5 CONCLUSIONS

The bat surveys undertaken for the Proposed Development included a walkover of the lands within the Site during a daytime visit, tree inspections, one emergence and activity survey in 2023 and three emergence and NBW surveys in 2024. A soprano and common pipistrelle night/feeding roost was identified within three trees and two bat boxes onsite. Other bat species recorded onsite included Nathusius' pipistrelle, Leisler's bats and brown long-eared bats. It was concluded that the Site is of high local importance for roosting bats and high local importance for foraging and commuting bats.

The Proposed Development will result in the loss of linear habitats suitable for commuting and foraging, as some individual trees that bats were observed foraging and commuting over will be removed in the centre and south of the Site. However, the majority of bat activity on the Site was observed in the southeast corner of the Site where treelines will be protected and retained, the trees and bat boxes that bats were observed to be roosting in will also be retained. Additionally, the planting onsite of insect-friendly flowers and shrubs will attract insects which may provide additional foraging opportunities for bats onsite.

Subject to the implementation of the lighting plan, bats will continue to be able to use the Site as a night / feeding roost, and for foraging and commuting purposes. While the lighting onsite will result in some light spillage onto retained hedgerow/treelines that bats were observed foraging and commuting along, *Pipistrellus* species and Leisler's bat will likely still use the Site for foraging and commuting.

It is considered that provided the mitigation measures presented within this report are followed, significant impacts on bats will be reduced and the overall impact from the Proposed Development on bats will not be significant.

6 REFERENCES

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APPENDIX C

LANDSCAPE MANAGEMENT AND MAINTENANCE PLAN

LDA Wilton, Sarsfield Road, Cork

prepared on behalf of

LDA

March 2025 / Project No.7848

parkhood.com

Project Title: Wilton Cork

Document Title: Landscape Management and Maintenance Plan

Client Name:	LDA
Document Reference:	7848/LMMP/GB
Project Number:	7848

Quality Assurance

Approval Status in accordance with Park Hood's IMS (ISO 14001:2015, ISO 9001:2015 and ISO 45001:2018 & SSIP).

Issue	Date	Report Prepared by	Planting and Landscape Management Advice
Planning	*08.04.2025*	*Giulia Bellacoscia*	*Tom Kaiser*

Disclaimer

All feasible and reasonable attempts have been made to ensure that the information provided by a range of public sector institutions and presented in this report is accurate and up-to-date. Park Hood is not responsible for accidental perpetuation of inaccuracies in these records and any consequent effect on the conclusions in this report.

This report has been prepared by Park Hood with all reasonable skill, care and diligence within the General Terms and Conditions of the Contract with the client.

Contents

Notes

This document is to be read in conjunction with the following drawings and documents:

- Drawing No. 7848 -SW-XX-DR-L-0001 Development Impact drawing
- Drawing No. 7848-00-XX-DR-L-1001 Boundary Treatment
- Drawing No. 7848-SW-XX-DR-L-1100 Landscape General Arrangement
- Drawing No. 7848-SW-XX-DR-L-1200 Hardscape Layout
- Drawing No. 7848-SW-XX-DR-L-1300 Softscape Layout
- Drawing No. 7848-ZZ-ZZ-DR-L-1400 Landscape Sections 1 of 2
- Drawing No. 7848-ZZ-ZZ-DR-L-1401 Landscape Sections 2 of 2
- Report 7848 – Landscape Strategy Report

1.0 INTRODUCTION

Purpose and Scope

1.1 The Landscape Management and Maintenance Plan has been prepared with regard to the *Cork City Development Plan 2022-2028* which is the relevant plan covering the subject site. It is part of a standard requirement for the planning application process and relates to the management proposals for open space / external landscape areas which are part of this proposed residential development.

1.2 The Plan shall be taken to include this document and any supporting plans, reports and specifications approved as for this proposed residential development. This includes any documentation containing quantitative and qualitative information about the external areas of the site that will be useful to those responsible for managing and maintaining them.

1.3 The Management Plan sets out the management aims and objectives for the site along with the specific management objectives for each landscape component, and the associated maintenance works required on an Annual and Occasional basis. Annual Works are those works that will be required every year, such as watering, weeding and cleaning. Occasional Works are those that will be required on an irregular or cyclical basis, such as repairs and renewals.

Contract Requirements

1.4 The company undertaking any part of the works:

- must adhere to all local government legislations and regulations concerning their respective industry.
- must adhere to all local government legislations and regulations concerning health and safety; and
- must be a member of the local statutory body representing and regulating their respective industry.

1.5 Any personnel working on site:

- must be supervised by an appointed senior member of staff.
- must be suitable trained in their respective task.
- must hold the necessary government approved certificates if required (i.e., use of chemicals, machinery etc.)

1.6 Any hazardous material:

- has to be correctly labelled, stored and used as per the concerning local government regulations.
- shall only be used by a supervised, trained, certified (if applicable) and appointed member of staff; and
- must be approved for use by a representative of the owner.

Health & Safety

1.7 Management of all areas will be undertaken in accordance with current Health and Safety regulations and Safety, Health and Welfare at Work Acts 2005 and 2010. This will include the Safe System of Work Plan (SSWP) which complements the Safety Statement required under the Safety, Health and Welfare at Work Act.

1.8 This will include staff must undergoing a site health and safety induction course regarding the site-specific issues and submission of a Health and Safety Plan prior to commencement of any works.

2.0 SITE INFORMATION AND INTRODUCTION

Table 1 General Site Information	
Site Location	Lands at Sarsfield Road, Wilton, Co. Cork
Council Authority	Cork City Council
Client	LDA
Nature of Development	The development comprises the following: - • The development will consist of 16 no. 2- storey, 3 no. bedroom townhouses and 332 no. apartment units (152 no. 1 bedroom apartments, 168 no. 2 bedroom apartments, 12 no. 3 bedroom apartments) arranged in 3 no. Apartment blocks (the easternmost block 6 no. storeys in height; the middle block ranges in height from 5-6 no. storeys including parking at ground level under podium level, and the westernmost block is proposed to range from 5 - 6 no. storeys including parking at ground level under podium level); • A crèche. • The provision of landscaped amenity areas (combined total 0.35ha / 13.0% of Site Area), which includes inter alia landscape features, planted areas, pedestrian / cyclist trails, and playgrounds / equipped play areas. • The provision of one vehicular / pedestrian / cyclist access point to the east off the Sarsfield Road (R641), and two pedestrian / cyclist access points to the east/west • The provision of car parking associated with the residential development (148 no. spaces) and crèche / amenity area. • The provision of cycle parking associated with the residential development (503 no. units with rear garden access. • All associated site infrastructure and service works, including internal roads and paths, utilities, lighting and drainage, on a site of 2.61ha.

Table 2 Landscape Works and Types Summary	
Summary description of external Landscape treatments, areas and components	**Soft Landscape Areas** include the following elements: • (Management of) existing trees and hedgerows; • Amenity Grass Seeding and Meadow Seeding; • Groundcover and shrub planting; • Tree and woodland planting; • Shrub and Buffer Planting; and • Hedgerow planting **Hard Landscape Areas** include the following elements: • Footpaths and public realm hard landscape treatments; • Roads; • Walls and Copings; • Railings and fencing; • Outdoor Furniture; and • Play and Amenity equipment.

Landscape Design Objectives

2.1 Public and Communal Open Space include extensive planting with a mix native and ornamental tree species to create a natural environment with colour and seasonal interest.

2.2 The plans and landscape proposals also take into account *Objective 6.18 Public Open Space* and *Section 10.296 Recreation and Open Space* within the Development Plan in term of Open Space provision with recreational and amenity spaces to the core of the site.

2.3 Biodiversity and habitats creation or enhancement will be the objective in terms of landscape design to the site edge (with reference to the any Local Authority Biodiversity Action Plans) and will include appropriate buffer / riparian corridors free from new development alongside the watercourses and existing ditches.

2.4 Planting of semi-mature trees and extra heavy standard trees is included to give instant impact and resonance while providing enclosure and screening.

2.5 Green links connecting peripheral parks and internal open spaces including tree lined avenues, planted embankments, pocket parks, and ecology / biodiversity areas. The connectivity includes set out walking or running trails across the site that can connect on to adjacent lands.

2.6 All streets, open green areas, playgrounds, and major pedestrian routes will be accessible to all members of the community and reflect the principles of universal access design.

2.7 Playgrounds to cater for the recreational and educational requirements of children of residents.

2.8 The open spaces are designed with consideration given to long-term management ensuring this is not onerous with heavy resource requirements. Durability and low maintenance will be the primary considerations of all materials and products within the public realm areas.

Management Plan Objectives

2.9 The aim of the Management Plan is to coordinate a high standard for maintenance and management of landscape elements across the site to ensure successful visual integration of the residential development proposal into the surroundings and to protect and enhance nature conservation interests in accordance with the design objectives in the approved planning documents. This includes the appropriate maintenance of existing retained and proposed landscape components within an easily maintained comprehensive landscape framework that can provide (where possible) a diversity of landscape experiences for the users, residents and visitors.

2.10 The objectives are summarised as follows:

- To ensure a high standard of sustainable management of all landscape areas in a neat, tidy and substantially weed free condition;
- To ensure that all seeded areas are established and maintained in a condition that contributes to the visual amenity of the development;
- To establish and maintain tree and shrub planting to provide an overall landscape framework and landscape character;
- To maintain and enhance biodiversity and fulfil all legal requirements in relation to the protection and management of ecological features and the protection and management of protected species;
- To ensure health and safety to minimise risk of injury and damage to people and property; and
- To provide a mechanism or monitoring and review with practices reviewed on an annual basis in accordance with changing site circumstances and the views of key stakeholders.

2.11 There will be a five-year guarantee after construction that all the proposed planting works still exist and is established in line with landscape design expectations. This is to ensure that no planting has been removed or damaged due to the subsequent construction or plant failure.

2.12 If removal of any tree is necessary, agreement shall be reached with the Council as to replacement with matching or appropriate species in the next planting season.

Landscape Specifications and Drawings

2.13 Landscape works to be undertaken by an ALCI approved landscape contractor and in accordance with BS 4428:1989 Code of practice for general landscape operations (excluding hard surfaces). The general landscape proposals are indicated on **Drawing No. 7848-PHL-00-ZZ-DR-L-1100 - LANDSCAPE GENERAL ARRANGEMENT** with other drawings as listed in the Contents page above.

2.14 When using pesticides, the Contractor must use a certified operator and take appropriate safety precautions in accordance with the European Communities (Sustainable Use of Pesticides) and

Sustainable Use Directive (SUD) Regulations and the Irish National Action Plan for the Sustainable Use of Pesticides (Plant Protection Products) Feb 2019.

2.15 Plant supply shall be obtained from a nursery that are members of the Horticultural Trades Association Nursery Certification Scheme and approved by the project and local authority landscape architect.

2.16 All planting stock shall be of local provenance or if unavailable national provenance. Origin and provenance have the meaning given in the National Plant Specification and grown in Ireland corresponding to the lists provided in the All-Ireland Pollinator Plan 2021-2025.

Ground Preparation

2.17 Prior to cultivation, planted areas shall be cleared of all loose debris, rubbish, stones over 25mm in diameter, roots, and other extraneous matter. Grass and weeds shall be sprayed with 'Glyphosate' or similar *SUP / SUD* approved herbicide.

2.18 Topsoil Depths: spread over prepared subsoil in layers not exceeding 150 mm, each layer firmed before spreading the next. Top Soils shall comply with multipurpose grade within *BS 3882:2015: Specification for Top Soil.* Overall minimum depths after firming and settlement to be: -

- Shrub / Hedgerow areas 450 mm
- Lawn and Grass areas 150mm

2.19 Planted areas to be cultivated to a depth of 300mm by hand or rotovator, incorporating planting compost, soil improver and fertilizer base dressing of the types. The topsoil shall have been reduced to a fine tilth on completion of the cultivation works.

Timetable for Landscape Works

2.20 The landscape works shall be undertaken by the end of the next available planting season and during the following periods:

- Deciduous trees and shrubs: Late October to late March;
- Conifers and evergreens: September/ October or April/ May; and
- Container grown plants: At any time if ground and weather conditions are favourable.

Proposed Standard Tree Planting

2.21 Tree supply and planting shall correspond to *BS 8545:2014 Trees: from nursery to independence in the landscape - Recommendations*. Planting of trees shall be undertaken in favourable weather conditions between October 31st to March 31st.

2.22 Tree pits shall be excavated to suitable dimensions to accommodate roots or root-balls or baskets with bases and sides broken up to a minimum depth of 150mm to assist drainage and root penetration. Any unsuitable material such as large clay lumps, bricks, concrete, timber and sand shall be removed off-site. All tree pits shall be backfilled, after planting, with a 3:1 volume mixture of topsoil and mulching compost/manure or similar approved.

2.23 The planted trees shall be full and well-shaped with crowns thinned by 30% according to good horticultural practice and in a manner that does not affect the overall stature, structure or good appearance of the tree. All work shall conform to a minimum standard as set out in *BS 4043:1989 Recommendations for transplanting root-balled trees.*

Proposed Woodland Planting

2.24 Trees supply and planting shall correspond to *BS 8545: 2014 Trees: from nursery to independence in the landscape - Recommendations*. Planting of trees shall be undertaken in favourable weather conditions between October 31st to March 31st.

2.25 Transplants shall be of the size stated in the schedules and conform to *BS 3936 - Part 1: Nursery stock specification for trees and shrubs*. Planting pockets 400x400x300mm deep with cultivated and evenly incorporated: organic manure 100mm layer over area of pit, fertiliser 35g at 2.0m centres.

Proposed Shrub and Groundcover Planting

2.26 Shrub plants to be planted at 2 to 3 plants per m² to linear strip to base of bank. Transplants and container grown shrubs shall be of the size stated and conform to *BS 3936 - Part 1: Nursery stock specification for trees and shrubs.*

2.27 Planting pockets 400x400x300mm deep with cultivated and evenly incorporated: organic manure 100mm layer over area of pit, fertiliser 35g. 75mm depth bark mulch dressing on completion of planting.

Hedgerow Planting

2.28 Hedgerow plants to be planted at 4 per linear meter (in double staggered row at 500mm centres) to top of bank. Transplants shall be of the size stated, shall conform to *BS 3936 - Part 1: Nursery stock specification for trees and shrubs*.

2.29 Planting pockets 400x400x300mm deep with cultivated and evenly incorporated: organic manure 100mm layer over area of pit, fertiliser 35g. 50mm depth bark mulch dressing on completion of planting.

Grass Seeding

2.30 To be undertake with a grass seed suitable for general amenity areas. Sowing rate 35g per m².

Performance Criteria

2.31 Performance criteria are indicators for assessing the quality and success of the particular plant mixtures used for a purpose i.e., screen planting, seeding, tree planting etc. Such indicators will be based upon aspects such as: -

- Health and condition of planting;
- Plant growth; and
- Achievement of desired visual effect.

Existing Trees and Boundary Hedgerows

2.24 There are existing hedgerows located on the site boundaries that are to be retained and protected (in

accordance with the recommendations included in BS 5837: 2012). This covers: -

- The provision of adequate fencing around trees to prevent harmful encroachment / damage by vehicles or storage of materials during construction;
- The avoidance of any reduction in levels in the root protection area of individual trees; and
- Inspect for disease, dead wood or storm damage and, if necessary, treat or carry out tree surgery accordingly (using advice of qualified tree surgeon if necessary).

Protection Measures during Construction Works – Generally

2.25 A protective barrier, 2.3m high and comprising a vertical and horizontal framework of scaffolding, well braced to resist impacts and securely supporting weldmesh panels, (as illustrated in Figs 2 & 3 of BS5837:2012) shall be erected around the base of all trees to be retained on site. No construction traffic, materials or debris will be permitted within this zone of protection.

Protection Measures – Post Construction

2.26 The management company will be responsible for the maintenance and upkeep of trees within the property boundary. Protected trees should be visually reviewed annually by the managing company and subject of regular ongoing health and condition inspections undertaken at 5-year intervals.

3.0 LANDSCAPE SOFTWORKS – ESTABLISHMENT MAINTENANCE

General Introduction

3.1 Establishment maintenance will form part of the landscape contractors works. The period of establishment maintenance will be 12 months after the completion of the planting and grassing works prior to handover.

3.2 Prior to handing over, all plants deaths shall be replaced, and all defects made good to the satisfaction of the landscape architect and/or the management company.

Establishment Maintenance Operations – Amenity Grass Areas

3.3 The developer and contractor shall be responsible for maintaining all grassed areas in a neat and tidy, weed free and litter free condition, throughout the complete growing season, or when the landscape works are completed, whichever is the later.

Works required prior to First Cut

3.4 When the new sward has reached a height of 50mm the contractor shall remove all loose debris, stones and rubbish above 25mm in any direction prior to cutting. Following the surface clearance and prior to cutting the contractor shall lightly roll all newly grassed areas with a smooth and even weight.

First Cut

3.5 All new grass sward shall be given first cut at least two days after rolling. The first cut shall leave not less than 35mm height.

Subsequent and Management

3.6 Grass shall be cut regularly (a total of 12-16 times during the growth season) to a length consistent with the season and quality of growth. The normal establishment of cut shall be 25mm. All arisings shall be removed if the height of the grass exceeds 100mm prior to cutting.

3.7 All established grass areas shall receive an application of an approved top dressing (N:P:K) (20:10:10) at the rate of 15g/M2 as directed by the site management or landscape architect.

3.8 Any areas of settlement or local depressions shall be made up and re-sown by the contractor at his own expense.

3.9 The edges of seeded areas, adjacent to shrub beds and margins are to be carefully trimmed square and to a true line. The contractor should note that this also applies to the area around the base of trees planted in grass areas.

3.10 All areas of failed grass shall be reinstated using the seed mix as specified within the landscape contract, with ground cultivation prior to seeding meeting the same requirements.

3.11 All new grass areas shall be handed over as complete, well-established sward at the end of the establishment maintenance period.

Establishment Maintenance Operations – Meadow Areas

3.12 Fertility of the ground in meadow areas should be low otherwise grasses will compete and crowd out the flowers. For this reason, Rye grass used for hard wearing lawns should not be used as it is too vigorous.

3.13 Perennial Weeds also need to be removed and ground prepared similar to that for grass seeding. The grass is sown first lightly raked and then the wildflower seed is sown and left unraked. The ground should then be rolled to encourage good contact between seed and ground. Do not over seed the area.

3.14 Management in the first summer is critical to ensure successful establishment. The sward should be cut 6-8 weeks after sowing when it is over 10 cm high using an Allen scythe or rotary mower.

Establishment Maintenance Operations – Planting operations

3.15 Weed Control: All planted areas shall be kept entirely weed free throughout the establishment maintenance period, using approved residual and translocated herbicides, or mechanical means, or a combination of both.

3.16 Wind Firming: All plants shall be inspected at monthly intervals for wind firmness, and re-firmed as necessary.

3.17 Stakes & Tree Ties Checking: Stakes shall be checked monthly for firmness, and re-firmed as necessary, and all tree and plant ties inspected and loosened as required.

3.18 Pruning: Shall be carried out on a monthly basis and will include the removal of minor dead wood or damaged wood. Formative pruning shall be undertaken at the appropriate time of the year for the species involved in order to enhance the plants best feature e.g., flowering, stem colour etc.

3.19 Inorganic Fertilizer: All shrub-planting areas shall receive a fertilizer top dressing in July of 'Osmocote' slow-release fertilizer (N:P:K) (18:11:10) to be lightly raked in.

3.20 Watering: All plants shall be watered as required during the establishment maintenance period to ensure survival of all plant material. Suggested water requirements for tree irrigation are as per following **Table 3 Watering Requirements** below.

3.21 Litter Removal: Litter that may have accumulated in grass and planted areas must be lifted and removed from the site each month.

3.22 Failed Planting Areas: Prior to the end of the establishment maintenance period, the contractor will receive from the landscape architect a list of plant material that must be replaced by the contractor. Any plant material which has failed to establish, or has died, throughout this period must be replaced with healthy plant stock of similar specification at the contractors own expense. Successfully established plant material shall be those plants showing positive signs of growth i.e., shoot extension and growth over time. Breaking into leaf is not to be taken as evidence of successful establishment.

3.23 Handover of Planted Areas: All newly planted areas shall be handed over as complete and well established at the end of the establishment maintenance period.

Table 3 Watering Requirements for Establishment Maintenance Period (in days)						
	Feathered	Light Standard	Standard	Heavy Standard	Extra Heavy Standard	Semi-Mature
Girth (cm)	6	6-8	8-10	10-12	12-14	14-16
Height (m)	1.8-3.0	2.4-2.7	2.7-3.0	3.0-3.6	3.6-4.2	4.2-4.8
Estimated daily* transpiration rate (litres)	1	1	1.2	2	3	4
Suggested first season summer watering requirements (litres per month)	36	36	45	75	115	150
*Calculations for transpiration and suggested watering requirements are based on a typical Plane Tree in a tree pit ameliorate with 25% peat and with a 50mm mulch layer. The figures are approximate and are for guidance only. Allow an extra day for every 10mm of rainfall.						

4.0 LANDSCAPE SOFTWORKS – LONG TERM MANAGEMENT

Amenity Grass Areas

4.1 Performance Criteria: Grassed areas shall have good grass cover without obvious bare patches.

4.2 Maintenance Objectives: To establish and maintain an even cover of grass sward.

Maintenance Operations Years 1 – 20

- Grass Cutting: All grassed areas will be maintained between 20 – 40mm in height during April to August inclusive and between 30 – 50mm at all other times;
- Frequency of cuts may be up to 20 cuts per annum, dependent on the length of the growing season and weather, with the majority undertaken during the spring and summer months. Clippings may be let fly, but all adjacent hard surfaces shall be swept clean after cutting with all clippings removed to contractor's tip;
- Grass Verges & Edges: All edges to grassed areas against buildings, footpaths, roadways, trees and any other obstruction shall be kept neat and tidy. Border edges shall be clipped and not exceed 50mm length at any time;
- Weeding: Spot weeding of isolated areas of weed infestation may be undertaken using an approved selective herbicide; and
- Reinstatement of failed areas: All areas of failed grass shall be reinstated using the seed mix as specified within the original landscape contract, with ground cultivation prior to seeding meeting the same requirements.

Groundcover and Shrub Planting Areas

4.3 Performance Criteria: By year 5 all ground cover planting shall have achieved closed canopy and shall have been thinned and pruned.

4.4 Maintenance Objectives: To establish and maintain a weed free cover of healthy growth, clipped or pruned as necessary to give a neat and tidy finish contained within the planted area.

Maintenance Operations Years 1 – 3

- Monthly inspection for wind firming and watering to establish good growth;
- Annual application of an approved fertilizer in July of 17:17:17, N:P:K at a rate of 30g/M2; and
- Remove and replace all dead, dying and diseased or vandalized plant material, replacements to be as originally specified within the main landscape contract or as agreed with Management Company.

Maintenance Operations Years 3 – 5

- Annual application of an approved residual herbicide in the winter months, with removal or spot treatment with an approved translocated herbicide during the main growing season;

- In the appropriate season for the species involved, prune and tidy the plants removing dead, dying or diseased plant material;
- Selectively thin plants that are restricting the natural and attractive development of their neighbours; and
- Remove all arising from site.

Maintenance Operations Years 5 – 20

Operations to include the above, plus:

- Bi – annually prune and tidy the plants removing all dead, dying or diseased plant material from the site; and
- Replace as necessary all shrubs that are not contributing satisfactorily to overall objectives of the landscape management plan. Replacements shall be approved with the supervising officer.

Hedgerows

4.5 Performance Criteria: All hedges shall have a complete canopy and be managed to form a continuous impenetrable thicket to the desired height by year 5.

Maintenance Operations Years 1 – 3

- Monthly inspection for wind firming and watering as required ensuring establishment and survival of plant material;
- Pruning shall be directed at maintaining true and even levels as necessary during the growing season, with all arisings removed from site;
- The first cut can commence when all danger of frost has receded. When cutting avoid strong sunlight, best carried out on a dull and wet day;
- The last cut shall commence no later than 4 weeks before the first frost. Annual application of an approved fertilizer in July of 17:17:17, N:P:K at a rate of 30g/m2;
- Maintain the planted area weed free by applying an annual dressing of an approved residual herbicide in the winter months and spot treatment with an approval translocated herbicide during the growing season; and
- Remove and replace all dead, dying, diseased or damaged plant material, replacements to be as originally specified within the main landscape contract, or as agreed with management company representative.

Maintenance Operations Years 3-20

Operations to include the above, plus:

- Maintain top and side of hedges in a rectangular profile using suitable, approved mechanical methods, to true and even levels. Remove any cuttings lodged in the surface of the hedge and rake up and remove all arisings; and

- Maintain weeds or grass growth at the base of the hedge to a maximum height of 100mm by regular hand cutting or by application of an approved residual herbicide.

Woodland Belts

4.6 Performance Criteria: By year 7, shrub planting will have achieved closed canopy and have been thinned and pruned; and

4.7 Maintenance Operations: To establish and maintain a wooded landscape, allowing plants to achieve natural form whilst avoiding obstruction to footways and windows.

Maintenance Operations Years 1 – 3

- Hand hoe all planted areas fortnightly during the main growing season in order to maintain a substantially weed free soil surface. This can be reduced to monthly out with the main growing season;
- Monthly inspection for wind firming and watering to establish good growth;
- Annual application of an approved fertilizer in July of 17:17:17, N:P:K at a rate of 30g/M2;
- In the appropriate season for the species involved, prune and tidy the plants removing dead, dying or diseased plant material, and to develop the desired characteristics;
- Remove intermediate plants that restrict the natural and attractive development of their neighbours;
- Remove and replace all dead, dying, diseased or damaged plant material, replacements to be as originally specified within the main landscape contract or as agreed with the supervising officer; and
- Remove all arising from site.

Maintenance Operations Years 3 – 10

Operations to include the above, plus:

- Maintain woodland substantially weed free by applying an annual application of an approved residual herbicide in the winter months, with removal or spot treatment with an approved translocated herbicide during the main growing season.

Maintenance Operations Years 10 – 20

Operations to include the above, plus:

- Prune trees as necessary, in appropriate season to achieve their desirable screening or wooded effect and to prevent them from overgrowing footways or blocking light from windows;
- Replace as necessary all trees and scrub that are not contributing satisfactorily to the overall objectives of the landscape management plan.

Standard Tree Planting

4.8 Performance Criteria: To provide a healthy growing tree that contributes to the overall aesthetics of the landscape.

4.9 Maintenance Objectives: To ensure establishment and maintenance of trees with a well-shaped habit.

Maintenance Operations Years 1 – 3

- Monthly inspection for wind firming and watering as required ensuring establishment and survival of plant material (fortnightly during dry spells);
- Bi-monthly tree tie check to ensure that the trees are not being strangled by support. Loosening of trees ties as necessary;
- Maintain a 1m diameter area of weed free soil around the base of each tree by hand. This to be carried out monthly during the main growing season and bi-monthly thereafter;
- Annual application of an approved fertilizer in July of 17:17:17, N:P:K at a rate of 60g/tree;
- Remove and replace all dead, dying, diseased or damaged plant material, replacements to be as originally specified within the main landscape contract, or as agreed with the supervising officer;
- Prune the trees to remove any dead, dying or diseased shoots and limbs to create a balanced form for future growth, remove; and
- Tree Guards and Grilles: Where supplied and fitted, tree guards (mild steel and 'Weldmesh') are to be inspected, re-fixed or replaced as necessary to original specification and to prevent chaffing of tree.

Maintenance Operations Years 3-5

Operations to include the above, plus:

- Removal of tree stakes, tree ties and tree guards as necessary, as trees become wind firm and established to prevent strangulation of tree.

Maintenance Operations Years 5-20

Operations to include the above, plus:

- Some selective thinning of tree groups may be required during this period, at years 10 and 20;
- Visibility Splays: Any vegetation other than grass on visibility splays or road sight lines will be kept to below 600mm above channel lines on road. In addition, the visibility splay will be kept free of all structures or vegetation other than that approved in the planning consent.

Watering

4.10 In any period of extended drought ensure survival of all plants, for recommended water requirements refer to Table 3 for guidance.

Existing / Mature Trees

4.11 Within the Cork City Development Plan 2022-28, it states that "*To support retaining existing trees and the planting of new trees as part of new developments subject to care on the species of tree and the siting and management of the trees to avoid conflict with transport safety and residential amenity in particular;*" and that "*To promote the planting of pollinator friendly native deciduous trees and mixed forestry to benefit biodiversity*".

4.12 Management Objectives:

- To maintain the trees in as healthy and attractive condition for as long as possible;
- To ensure continuity in tree cover and their contribution to the landscape structure, biodiversity, and screening/amenity value of the site;
- To ensure that trees are healthy and safe, particularly in places in proximity to residential properties and with public access. and
- In certain locations, arising's from woodland management activity can be used as basis for opportunities for amphibians, invertebrates and bryophytes micro-habitats by leaving piles of dead wood or recumbent dead logs.

Maintenance Operations – Annual and Occasional

- Trees should be regularly visually checked for the presence of any diseased or rotten wood; fungal or other infections/disease; and stability. If any such issues are identified then the advice of qualified Arboricultural consultant should be sought immediately;
- The health of the trees shall be monitored and any works required for health and safety or to promote the health and sustainability of existing trees shall be identified, scheduled and actioned at a suitable time of year;
- All works should be completed at an appropriate time of year and in accordance with relevant EU legislation. Where possible this should be outside of the bird nesting season (i.e., between October through to March inclusive). In any event according to the nature of the works, there may be an additional requirement for monitoring or a watching brief by a qualified ecologist to ensure there are no nesting birds or bats present;
- All works shall be carried out by a skilled, qualified and approved Arboricultural Contractor in accordance with *BS3998: 2010 'Tree Work - Recommendations*.
- Where possible, and where health and safety constraints permit, arisings may be formed into habitat piles within public open spaces, and standing dead wood maybe left within the woodland to provide additional dead wood habitats to maximise invertebrate biodiversity. All other brushwood and logs that result from surgery and felling of trees on site shall be removed off site. Brushwood may be chipped on site, but all wood chippings resulting from these operations shall be raked up, bagged and removed;

- Where surgery works affect carriageways or public roads, the Arboricultural Contractor shall ensure the relevant permissions and road control permits are obtained, and all necessary health and safety parameters are met;
- Selective thinning and coppicing of existing scrub and trees is to be assessed on site. This will allow trees and shrubs to develop diversity of form and different types of nesting, feeding and foraging habitat and extend the potential life of individual plants. Additional thinning of the scrub areas may be required at intervals following an initial selective thin and coppice. The timing of thinning should be informed by an assessment on site. A competent person, such as a qualified arboriculturist should plan thinning and coppicing operations. All thinning and coppicing operations should be undertaken between October and February; and
- Possible damage to drainage/services and adjoining building foundations must be considered before choosing a replacement tree species and location.

Monitoring Objectives and Performance Criteria

4.13 At the end of the defect's liability period (1 year), the overall soft landscape areas shall be in a visually neat and tidy condition and completed to the contract specification prior to handing over to the appointed management company. The management company will inspect all areas of seeding and planting regularly throughout the year, to ensure the landscape management objectives are achieved.

4.14 The landscape sub-contractors with responsibility for the site shall record all site visits, maintenance operations undertaken and any other significant events i.e., fire, theft or vandalism of plant materials. This information shall be used to prepare an annual report at the end of each year that will summarize maintenance operations together with an assessment by the contractor of the current state of the site.

4.15 The appointed supervising officer shall prepare a long-term review after years 5, 10, 15 and 20. This report shall summarize the management undertaken together with an assessment of the performance of the landscaped areas against the performance criteria stated within this plan. This review shall include recommendations for improving the management plan, if necessary, dependant on findings.

5.0 LANDSCAPE HARDWORKS – LONG TERM MANAGEMENT

Paved Areas

5.1 Performance Criteria: All hard surface areas shall remain in good repair and free of any trip hazards.

5.2 Maintenance Objectives: To repair any sunken/raised paving elements, making good damaged units or subsistence to match original materials and retain the paved areas in clean condition.

Maintenance Operations

- Annual inspections of hard surface areas and maintenance carried out as necessary e.g., re-pointing as required;
- Sweep with pedestrian equipment and dispose arisings (1 x per month, March – September);
- Apply herbicide, weed wipe (1 x per year); and
- Clean paved surfaces according to manufacturer's recommendations including removal of stained surfaces and removal of chewing gum.

Fencing, Barriers & Bollards

5.3 Performance Criteria: All boundary treatments shall remain in good visual condition. In particular, the wall to the southern boundary of the site should be regularly inspected to ensure stability and security of the boundary with the adjacent ESB Networks facility.

5.4 Maintenance Objectives: To repair any damaged elements and ensure barriers succeed in design objective e.g., maintaining site security, in particular along the boundary with the adjacent ESB Networks facility.

Maintenance Operations

- Annual inspections of hard works areas and maintenance carried out as necessary;
- Extension or strengthening of barriers as required with particular emphasis on maintaining the stability of boundary structures to ensure the long-term security of the adjacent ESB Networks facility is maintained;
- Clean bollards and barriers only according to manufacturer's recommendation; and
- Repaint fencing as required and as per manufacturer's recommendation.

Walls and Copings

5.5 Performance Criteria: All walls, planters and copings shall remain in good visual condition.

5.6 Maintenance Objectives: To repair any structural damage as required and retain surfaces in clean condition.

Maintenance Operations

- Annual inspections of hard surface areas and maintenance carried out as necessary;

- Maintain and clean painted surfaces;
- Remove graffiti as required; and
- Repaint and/or re-point as required and as per manufacturer's recommendation.

Street and Parkland Furniture

5.7 Performance Criteria: All street furniture shall remain in good visual and workable condition;

5.8 Maintenance Objectives: To repair any structural damage as required and retain surfaces in clean condition.

Maintenance Operations

- Annual inspections and maintenance carried out as necessary;
- Maintain and clean surfaces, remove graffiti as required;
- Repaint as required and as per manufacturer's recommendations;
- Remove severely damaged and broken street furniture immediately; and
- All repair works to be carried out according to the latest H&S and BS legislation.

Litter Bins

5.9 Performance Criteria: All litter bins should remain in good visual condition and hygienic condition.

5.10 Maintenance Objectives: To maintain litter bins in clean condition.

Maintenance Operations

- Empty litter bins and remove contents to tip;
- To retain the litter bin in clean condition;
- To replace any damaged litter bin as per original selection; and
- Clean and/or repaint as required and as per manufacturer's recommendation.

Litter Operations

5.11 Performance Criteria: To maintain as far as possible a clean, litter free environment.

5.12 Maintenance Objectives: Collect and remove from site all extraneous matter on a regular basis so that its presence is not detrimental to the appearance of the site.

- Collect and remove to contractor's tip all extraneous rubbish not arising from routine maintenance works which is detrimental to the appearance of the site. This rubbish to include stones, bricks debris, paper, confectionery and other wrappings, bottle, cans and plastic containers;
- Collect and remove to the contractors tip all extraneous matter which has been deliberately deposited on site by persons known or unknown; and

- Particular care to be taken to remove all broken bottles glass, tins likely to constitute a hazard to the general public.

Light Fittings

5.13 Performance Criteria: All external lighting within public realm areas should remain in good working order and good visual condition.

5.14 Maintenance Objectives: To maintain lighting fitting in good working order.

Maintenance Operations

- Regular inspections and repair as necessary;
- Clean and/or repaint as required and as per manufacturer's recommendation;
- All repair works to be carried out according to the latest H&S and BS legislation; and
- All repair works to be inspected and signed off by a certified electrician.

6.0 MAINTENANCE AND INSPECTION OF PLAY AREAS

6.1 *Performance Criteria: All equipped areas of play to remain in safe condition, good repair and in good visual condition. Maintenance of the play area will be in line with the requirements of BSEN 1176 and / or BSEN 1177 or BS 5696, DIN 7926 and BS 7188, with inspections every 2 weeks by qualified personnel, and quarterly and annual inspections by an independent inspection company.*

6.2 *Litter: Play areas shall be kept free of litter, so that at no time it will not be greater than 5%.*

Maintenance Operations

- Every two weeks, all play equipment, fencing, gates and bins will be visually inspected, and any damage reported to the Management Company in accordance with ROSPA Information Sheet 24. If any equipment is damaged, the equipment will be made inoperable at the time of visit pending repair;
- Each play area will receive a post installation inspection with a corresponding report, and will receive three quarterly and one annual inspection from an independent inspection company;
- At each maintenance visit, all extraneous material including stones, bricks, debris, paper, confectionery, bottles, cans, glass, dog fouling, soil washing onto paths and paved areas and any other materials whatever their composition considered detrimental to the appearance of the site will be collected and removed. This excludes any arisings from fly tipping wherein the cost and arrangements for the removal of such material will be agreed separately from the removal of litter;
- Loose surfacing such as Bark chips shall be re-spread to maintain an even depth over the whole of the covered area. Particular attention shall be paid to fall areas around play equipment;
- All equipped areas for play shall be inspected and maintained in accordance with the requirements of BSEN1176 and/or BSEN1177 and amendments; and

6.3 Annual inspections of play equipment in accordance with ROSPA Guidance and EN 1176/7 shall be carried out. Inspections shall be by an independent specialist. A written report shall be generated to included, but not limited to: site safety, safety and condition of equipment, surfacing and ancillary safety items, compliance with EN 1176. The report should include any remedial action required with an assessment of the degree of risk.

7.0 GENERAL SUMMARY

Introduction

7.1 All works, materials and operations will be in accordance with relevant legislation, British Standards, Regulations (including the CDM Regulations) and Codes of Practice.

7.2 It is important that all maintenance activities, significant events, surveys and monitoring activities are recorded. These provide an effective database against which the effects of maintenance and management activities can be assessed.

7.3 The landscape contractor responsible for maintaining the site shall maintain a record of site visits and the maintenance operations undertaken. The landscape contractor shall also record any significant events, i.e., fire, theft or vandalism of plant material or fencing. Specialist Contractors may be used on an as needs basis to complete specialist operations and/or occasional works.

Process for Monitoring and Review

7.4 The Landscape Management Plan and maintenance schedules will be monitored and assessed for their effectiveness on an annual basis for the first five years following the completion of the development. The review will include advice from specialist consultants as required (such as a qualified arboriculturist and ecologist), the Landscape Management Contractor and other stakeholders including representative(s) from the Council and local residents. The review shall include (as appropriate):

- Technical Reports - advising on particular aspects such as protected species, general management and health & safety issues;
- Records / Attendance sheets demonstrating the maintenance work undertaken;
- Site visit to assess landscape components, condition, and need for any mitigation or enhancement; and
- Record and Minutes.

Annual Reviews

7.5 The landscape contractor will prepare an annual report at the end of each year of maintenance that shall be made available to the appointed member of the management committee supervising the maintenance contract.

7.6 The report will include a summary of the maintenance tasks undertaken during the course of the year together with an assessment by the landscape contractor of their perceived effects be they positive or negative. The appointed member will prepare a long-term review report after 5, 10 and 15 years of the maintenance contract.

7.7 The report shall include a brief summary of the preceding period of the management plan together with an assessment of the performance of the landscape areas against the performance criteria stated in this plan. The review shall also include recommendation for future maintenance including potential remedial or enhancement works.

Five Year Review

7.8 The Landscape Management Plan will be reviewed every five years, or as required to ensure the satisfactory management of the landscape in perpetuity.

Appendix A Management and Maintenance Report

SAMPLE MAINTENANCE REPORT			
Date		**Weather**	
Start Time		**Finish Time**	
Personnel on Site			
Staff Names		**Skills**	
Tasks Undertaken			
Management Tasks	**Tick Box**	**Comments**	
Cutting Grass	☐		
Weeding	☐		
Strimming Meadow	☐		
Pruning	☐		
Dead-heading	☐		
Litter Picking	☐		
Weed Spraying	☐	Specify chemicals and location	
		_____	
Other	☐		
Tasks incomplete			
Management Task	**Specify Reasons**		
Management and Maintenance Notes			
Date of next site Visit			
Management Signoff			
Site Foreman		**Signature**	
Approved Manager		**Signature**	

Appendix B Specifications for Replacements - Post planting

Plant Material Generally

B1 Trees, shrubs and other plant materials as specified on the drawing shall be supplied from an approved source. Landscape products will be obtained from sustainable sources and from suppliers committed to sustainability.

B2 All trees and shrubs shall correspond exactly with the species, varieties and sizes shown on the planting plan, and shall comply with the relevant sections of *BS 3936 - Part 1: Nursery stock specification for trees and shrubs.*

B3 All shrubs, hedging plants, whips, feathered whips and climbing plants shall be properly grown, healthy, well established nursery transplants of good form, stock & strain, and shall have a well-developed fibrous root system.

Trees and Woodland Areas

B4 All trees shall have a well – balanced crown with an established framework of branches consistent with the species, a single straight stem and a well-developed fibrous rooting system.

B5 Bare rooted trees, where specified shall conform to the above.

B6 Root-balled trees, where specified shall be supplied with a root-ball of diameter and depth appropriate to the size and species of the tree. The minimum diameter shall be no less than ten times the diameter of the stem measured at 300mm above ground level. The root-ball shall be thoroughly moistened, prior to lifting from the nursery.

Appendix C Maintenance Task Schedules

Month	Location	Task	Duration	Comments
January	Lawn Shrubs/Borders	Cut and collect arising Weeding/Litter picking	Every 3 weeks Every 3 weeks	
February	Lawn Shrubs/Borders	Cut and collect arising Weeding/Litter picking	Every 3 weeks Every 3 weeks	
March	Lawn Shrubs/Borders Roses Rhododendrons Topiary	Apply slow release fertiliser Cut and collect arising Apply Medium release fertiliser Weeding/Litter picking Mulch all beds Apply slow release fertiliser Remove dead buds Prune dead wood Prune into shape	Once Every 2 weeks Once Every 2 weeks Once Once Once Once	10%N:5%P_2O_5:3%K_2O 7%N:7%P_2O_5:7%K_2O 15%N:6%P_2O_5:12%K_2O Only light prune
April	Lawn Shrubs/Borders	Cut and collect arising Weeding/Litter picking	Every 2 weeks Every 2 weeks	
May	Lawn Shrubs/Borders Rhododendrons	Cut and collect arising Weeding/Litter picking Apply herbicide/pesticide Dead Heading	Every 2 weeks Every 2 weeks Once Every 2 weeks	Aphids, Vine Weevil, Black Spot, Mildew etc. Start as soon as the flowers are going over
June	Lawn Shrubs/Borders Rhododendrons	Water on Sulphate of Ammonium Cut and collect arising Weeding/Litter picking Apply herbicide/pesticide Dead Heading	Once Weekly Weekly Every 2 weeks Weekly	Only necessary if lawn appears pale Aphids, Vine Weevil, Black Spot, Mildew etc.
July	Lawn Roses Shrubs/Borders	Water on Sulphate of Ammonium Cut and collect arising Apply slow release fertiliser Dead Heading Weeding/Litter picking	Once Weekly Once Weekly Weekly Every 2 weeks	Only necessary if lawn appears pale 15%N:6%P_2O_5:12%K_2O

	Rhododendrons	Apply herbicide/pesticide Dead Heading	Weekly	Aphids, Vine Weevil, Black Spot, Mildew etc.
August	Lawn Roses Shrubs/Borders Rhododendrons Topiary	Cut and collect arising Dead Heading Weeding/Litter picking Apply herbicide/pesticide Dead Heading Prune into shape	Weekly Weekly Weekly Every 2 weeks Weekly Once	 Aphids, Vine Weevil, Black Spot, Mildew etc. Only guidance prune
September	Lawn Shrubs/Borders Rhododendrons Lavenders	Apply slow release fertiliser Aerate and overseed Cut and collect arising Weeding/Litter picking Apply herbicide/pesticide Apply medium release fertiliser Dead Heading Dead Heading	Once Once Every 2 weeks Every 2 weeks Once Once Every 2 weeks Every 2 weeks	10%N:5%P_2O_5:3:K_2O Aphids, Vine Weevil, Black Spot, Mildew etc. 7%N:7%P_2O_5:7%K_2O
October	Lawn Roses Shrubs/Borders Rhododendrons Lavender Climber Topiary Hedges	Cut and collect arising Prune back Weeding/Litter picking Prune back Apply herbicide/pesticide Prune out dead wood Cut back Prune back Prune into shape Prune into shape	Every 2 weeks Once Every 2 weeks Once Once Once Once Once Once Once	 Aphids, Vine Weevil, Black Spot, Mildew etc. Hard prune and shaping for next year Hard prune and shaping for next year
November	Lawn Shrubs/Borders	Cut and collect arising Weeding/Litter picking Apply herbicide	Every 2 weeks Every 2 weeks Every 2 weeks	
December	Lawn Shrubs/Borders	Cut and collect arising Weeding/Litter picking Apply herbicide	Every 3 weeks Every 3 weeks Every 3 weeks	

LDA WILTON, Sarsfield Road
LANDSCAPE PROPOSAL

Landscape Strategy Report

Park Hood Chartered Landscape Architects

JANUARY 2025

parkhood.com

INTRODUCTION

This report has been prepared in support of a planning application for a proposed Large-Scale Residential Development on lands at Wilton, Cork.

The Land Development Agency (LDA) intends to apply to Cork City Council for permission for a Large Residential Development with a total application site area of c. 2.61ha, on lands adjoining the ESB Networks DAC Office, at Farrandahadore More, Sarsfield Road, Wilton, Cork City.

The development will provide 348 no. residential units and a 156sqm childcare facility, revised access arrangements to Sarsfield Road and all associated development above and below ground.

The proposed vehicular, cycle and pedestrian access into the development is via a reconfigured shared access with the ESB facility to the southeast, via a controlled junction on Sarsfield Road; the existing vehicular entrance to the site from Sarsfield Road on the eastern site boundary will change to cycle and pedestrian only access.

In addition, the proposed development includes bin stores; 182 no. car parking spaces; 175 no. bicycle parking spaces; internal roads and pathways; hard and soft landscaping including an outdoor play area; plant; boundary treatments including retaining walls along the northern boundary, the repair and replacement of some existing boundary treatments.

The provision of new drainage and watermains infrastructure and any required pipe diversion works; SuDS measures including green roof provision; below-ground attenuation structures; changes in level; services provision and related ducting and cabling; electric vehicle charging points; 3 no. ESB substations; generator compound; photovoltaic panels; signage; public lighting and all site development and excavation works above and below ground

EXISTING CONDITIONS

FIG 04. EXISTING SITE CONDITIONS

FIG 05. EXISTING SITE CONDITIONS

FIG 09. PHOTO LOCATIONS

FIG 06. EXISTING SITE CONDITIONS

The Wilton site in Cork is a land parcel that formerly served as a training ground for ESB staff.

It features several practice telephone poles in part of the field, which is interspersed with scattered trees and parkland. The site also contains large expanses of amenity grassland, contributing to its open and green character.

A defining feature of the site is the mature woodland belt along its perimeter with Sarsfield Road.

This belt of trees forms a strong landscape backdrop, providing visual screening and a natural boundary.

In terms of surroundings:
North: The site is adjacent to the Wilton Shopping Centre car park, a busy commercial area.

South: It borders the existing ESB depot.

East: Sarsfield Road, a significant roadway, runs along this boundary, offering access and connectivity.

West: The site is neighboured by the Cardinal Court residential development.

This combination of green infrastructure, and strategic location between residential, commercial, and transportation elements highlights its potential for sustainable development.

EXISTING SITE SETTING

CORK CITY CENTRE

N22

R608

R641

Site

1.5KM
15 MINUTES

2.5KM
20 MINUTES

N40

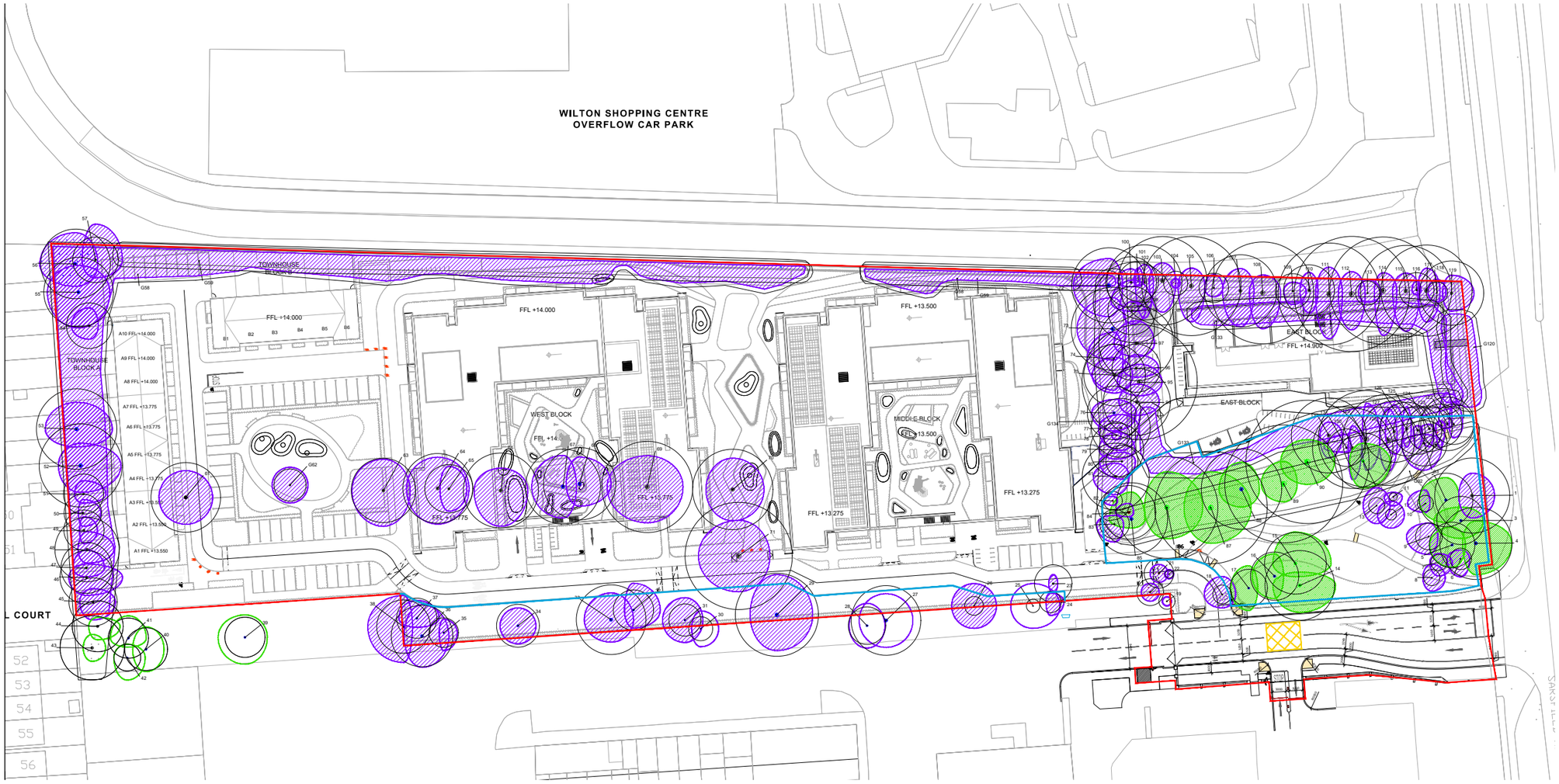
WILTON

N27

N71

N

EXISTING VEGETATION SURVEY & TREE CONSTRAINTS



Total Number of Trees: 123

- Trees to be retained: 15 (12.2%)
- Trees to be removed: 107 (87.0%)

Breakdown of Trees to be Removed (107 trees):

- Category B: 19 trees (18.7% of removed trees)
- Category C: 82 trees (75.7% of removed trees)
- Category U: 6 trees (5.6% of removed trees)

LEGEND:

Canopy spread of existing trees. Trees to be retained and protected in accordance with *BS 5837:2012 Trees in relation to Design, Demolition and Construction. Recommendations*

Tree Protection Zone as defined in accordance with *BS 5837:2012 Trees in relation to Design, Demolition and Construction. Recommendations*

Trees to be felled to facilitate development.

Proposed Tree Protection Fencing: 2.3m high comprising a vertical and horizontal framework of scaffolding, well braced to resist impacts and securely supporting weldmesh panels, (as per in Figure 2 and Figure 3 of BS5837:2012) shall be erected around the base of all trees to be retained on site. Verticals positioned no more than 3.0m apart, driven into the ground approximately 0.6m and fixed to weldmesh panels in a manner to avoid easy removal.

No activities associated with building operations will take place within the area(s) delineated by the tree protection fencing. Within the fenced area there will be no alteration in ground level, no storage of materials, temporary structures or concrete mixing and no material likely to be injurious to a tree will be stacked or discharged within 10 metres of a tree. No fire will be lit within 10 metres of the outside of the crown spread of retained trees.

Notes

Excavation will be carried out using non-mechanised hand tools only and during excavation, care will be taken to minimise damage to roots of trees to be retained. No excavated areas are to remain exposed for extended periods or overnight.

Any roots uncovered during excavations which are in excess of 2.5cm diameter will be retained and treated in accordance with *BS 3998 Tree Work - Recommendations*. Any tree roots exposed which are in excess of 5 cm diameter will be surrounded in sharp sand before replacing soil or other material in the vicinity.

All arboricultural work shall be carried out in accordance with BS3998:1989 Recommendations for Tree Work (or appropriate BS) by a competent Tree Surgeon, preferably an Arboricultural Association approved contractor.

All numbers within the tree canopies correspond to the Tree Survey and Condition Information within the report prepared by Dr Philip Blackstock in November 2013, amended September 2016.

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Breakdown of Trees to be Removed (107 trees):
Category B: 19 trees (18.7% of removed trees)
Category C: 82 trees (75.7% of removed trees)
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Site Boundary

A tree survey has been prepared to establish the current condition of existing trees on site.
The report identifies the species, height, girth and condition of existing trees and provides recommendation with regards to health and safety and vigour of each tree group.

The purpose is to illustrate the constraints and opportunities posed by trees and hedgerows, to help the design team prepare a layout that is considerate of the existing canopy cover on the site.

Existing trees will be retained along the southern and eastern boundary to maintain this key site feature and provide a clearly defined boundary to these portions of the site.

Trees that are felled to facilitate the development will be compensated by extensive tree planting throughout the proposed development and creation of biodiversity corridors along the eastern, southern boundaries of the site.

All retained trees will be protected during construction operation s in accordance with the requirements of BS5837:2012 in relation to Design, Demolition and Construction

Refer to Drawing:
7848-PHL-SW-ZZ-DR-L-0001 Development Impact

LANDSCAPE STRATEGY

The landscape design strategy for the Wilton Cork residential development seeks to establish a high-quality, visually appealing, and functional setting that enhances the living experience for residents and visitors alike. This will be achieved through the creation of diverse, meaningful public open spaces, each tailored to specific uses and characterised by unique designs that harmonise with their surroundings, and retain existing landscape features.

Key Features of the Landscape Strategy:

Distinctive Public Open Spaces
A variety of open spaces will be introduced across the site, each serving specific functions and incorporating features such as:
- High-quality materials, including paving, lighting, and street furniture, to define the spaces and establish their character.
- An extensive planting scheme, integrating native and pollinator friendly species to promote biodiversity.
- Retention of mature existing trees, supplemented by feature tree planting, shrub and herbaceous borders, lawns, and meadows.
- Accessibility and Connectivity.
- Open spaces are strategically distributed throughout the development to ensure ease of access for all residents. A network of linked footpaths and cycle paths will provide seamless connectivity both within the site and to the wider area.
- Communal and Private Amenities.
Extensive podium gardens will offer apartment residents communal outdoor spaces, designed to encourage social interaction and leisure.

Character Areas and Features

Village Green:
Serving as the welcoming gateway on the eastern side, this space retains mature existing trees and features seating areas and wildflower meadows to create an inviting and tranquil atmosphere while maintaining key landscape features.

Arrival Area:
Positioned near the main block and crèche, this area includes a children's play area, and incorporates a green buffer planting zone for privacy and aesthetic enhancement.

Community Court:
A north-south pedestrian corridor with pocket seating areas, mounded planting zones, and tree clusters, fostering a sense of community.

Formal Square:
A green open space accessible to residents, this area features a kick-about zone, children's play equipment, and seating, catering to both active and passive recreation.

Community Decks:
Two communal podium spaces on the first floor offer a blend of amenities, including seating, enclosed play equipment, and carefully designed defensive landscaping to provide privacy for adjacent terraces. Access is restricted to the residents of each block.

Buffer Zone:
Located along the site's perimeter, particularly the southern boundary, this area prioritises the retention of existing trees and enhances wildlife corridors with additional native buffer planting.

The Development Impact Drawing outlines the number of trees within the site boundary, detailing which trees are to be retained and which are to be felled. Out of a total of 123 trees on-site, 23 trees (18.7%) will be retained, with 7 of these classified as Category A (healthy and worthy of retention) and 16 as Category B (fair condition). The remaining 100 trees (81.3%) are scheduled for felling, including 83 trees (83%) in Category C (low quality or poor condition), 6 trees (6%) in Category U (unfit for retention), and 11 trees (11%) in Category B (fair condition but to be removed for other reasons).

To offset the loss, the felled trees will be replaced by 97 new trees, along with 4,330 m^2 of shrubs, 960 lm of hedge, 815 m^2 of wild-flower meadow, and 3,524 m^2 of lawn.

LANDSCAPE MASTERPLAN

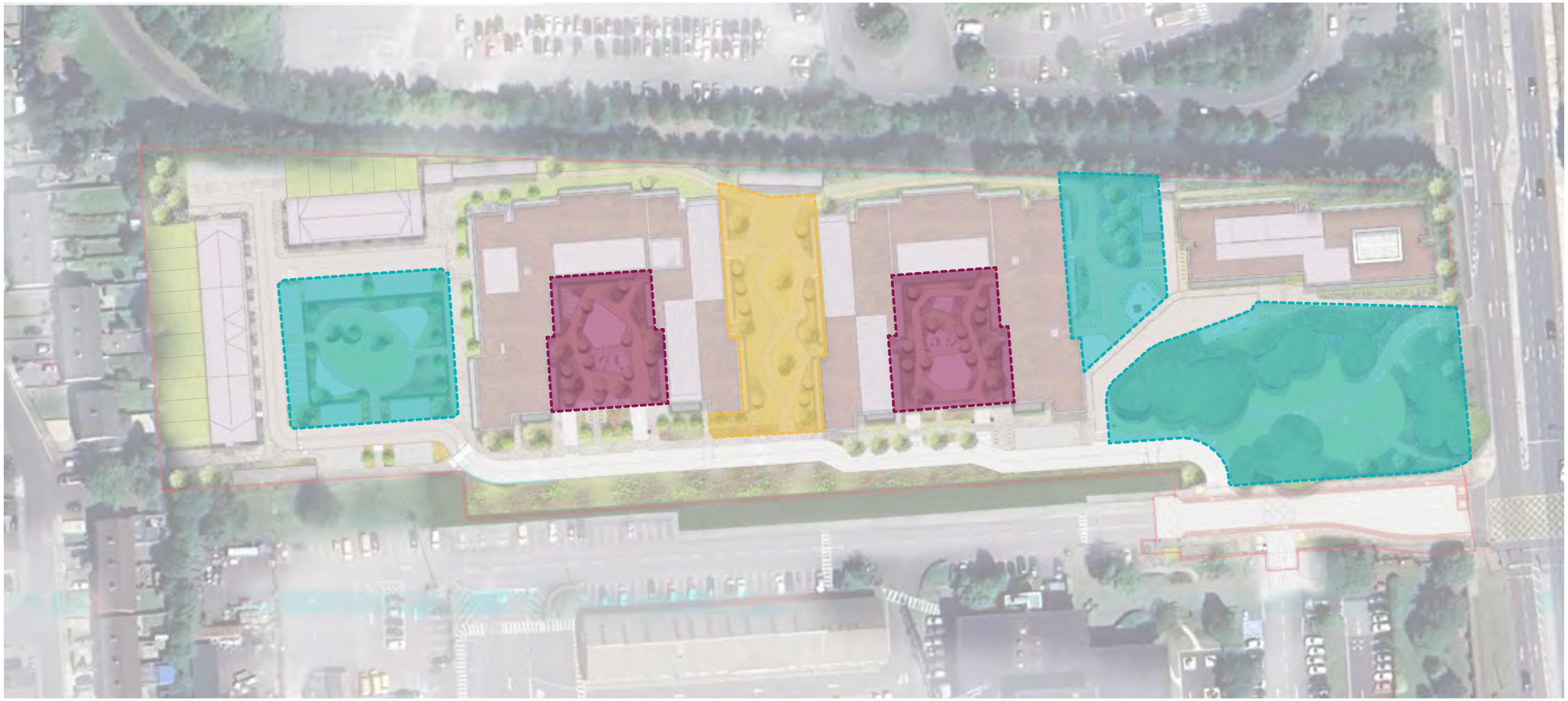
Strategic Objectives

- *Placemaking*:
  Creation of distinct landscape character areas to maximise the sense of place and community identity.
- *Connectivity*:
  Integration of footpaths, cycleways, and public transport links to seamlessly connect the development to the wider urban and rural networks.
- *Accessibility and Activity*:
  Distribution of usable public open spaces throughout the site, catering to a wide range of formal and informal recreational activities
- *Biodiversity and Sustainability*:
  Preservation of boundary vegetation and introduction of native planting to enhance wildlife corridors and ecological resilience.

  This landscape design approach ensures that the Wilton Cork residential scheme delivers not only a functional and attractive living environment but also an ecologically sensitive and socially inclusive community setting

Refer to Drawing:
7848-PHL-SW-ZZ-DR-L-1100 Landscape General Arrangement

OPEN SPACE PROVISION



PUBLIC OPEN SPACE 3545 M²

COMMUNAL OPEN SPACE AT PODIUM LEVEL 1487 M²

HOME ZONE OPEN SPACE 1211 M²

These diagrams illustrate the location and type of open space throughout the site and the anticipated use/activity type for each area.

The site layout provides 0.62ha (23% of 2.61ha total site area) of public open space which is in excess of the 13% requirement noted in Table 11.11 in Chapter 11 of the Cork City Development Plan 2022-2028. The open space areas have been arranged to retain existing mature trees across the site to enhance and protect the natural landscape features of the site.

The arrangement of Communal Open Space within the apartment blocks will ensure they benefit from excellent daylight and sunlight elements as required in Chapter 11. Play space will also be provided within the communal open space areas

PLAY AREA PROVISION

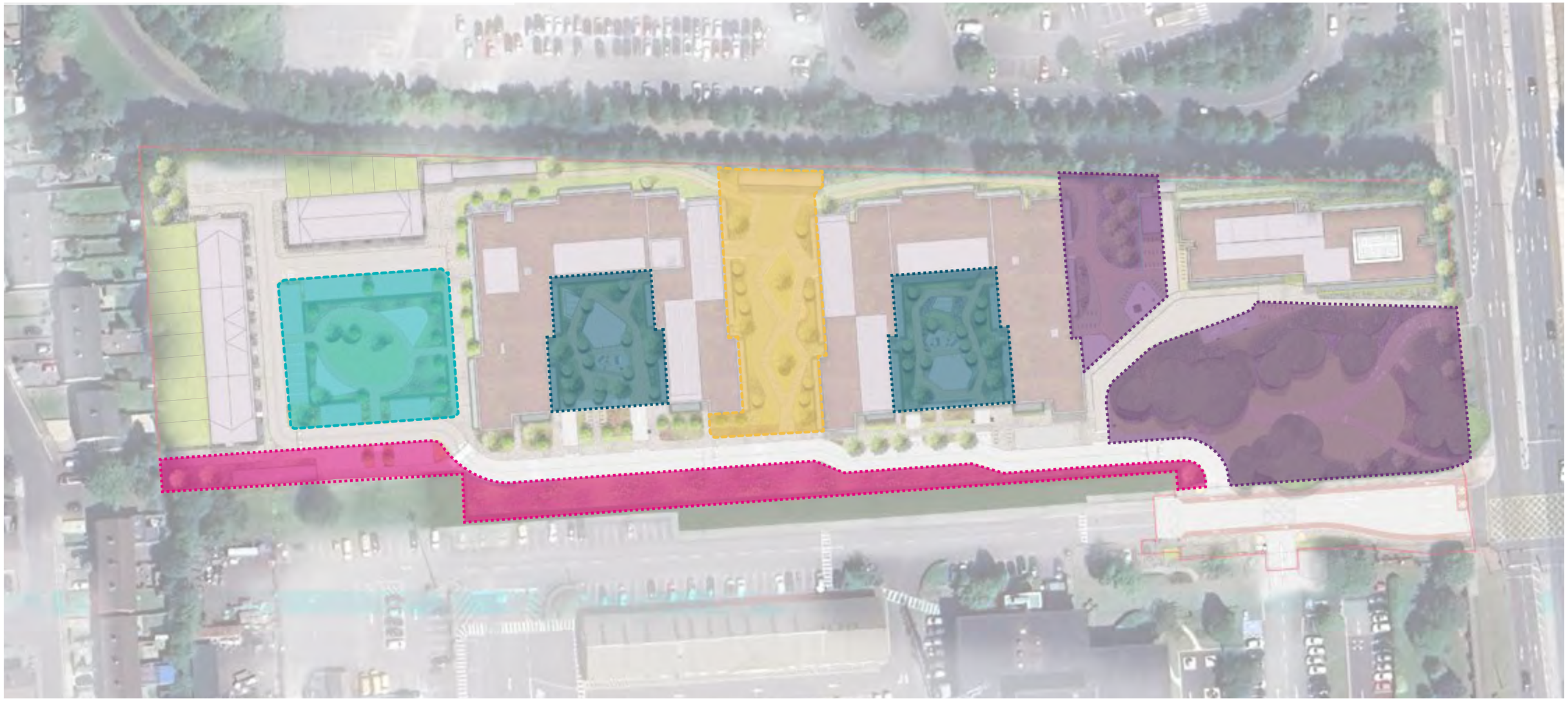
PUBLIC PLAY AREA 156 M²

ADDITIONAL PLAY AREA 154 M²

Play provision is located across five individual play zones, two of which are publically accessible and two of which are located at podium level of the apartment blocks. The play areas at podium level comply with the requirements of the Apartment Guidelines - '*small play spaces for the specific needs of toddlers and children up to the age of six, with suitable play equipment, seating for parents/ guardians, and within sight of the apartment building'*.

Natural play spaces are designed to adapt to the particular place where they are implemented. They provide a space and a setting for play (rather than an over-emphasis on equipment for children to play with) with the emphasis on natural play spaces which focus on the type of play that is most important to younger children in the age bracket 0-6.

OPEN SPACE ANALYSIS



HOME ZONE- WALKING, SEATING & ACCESS

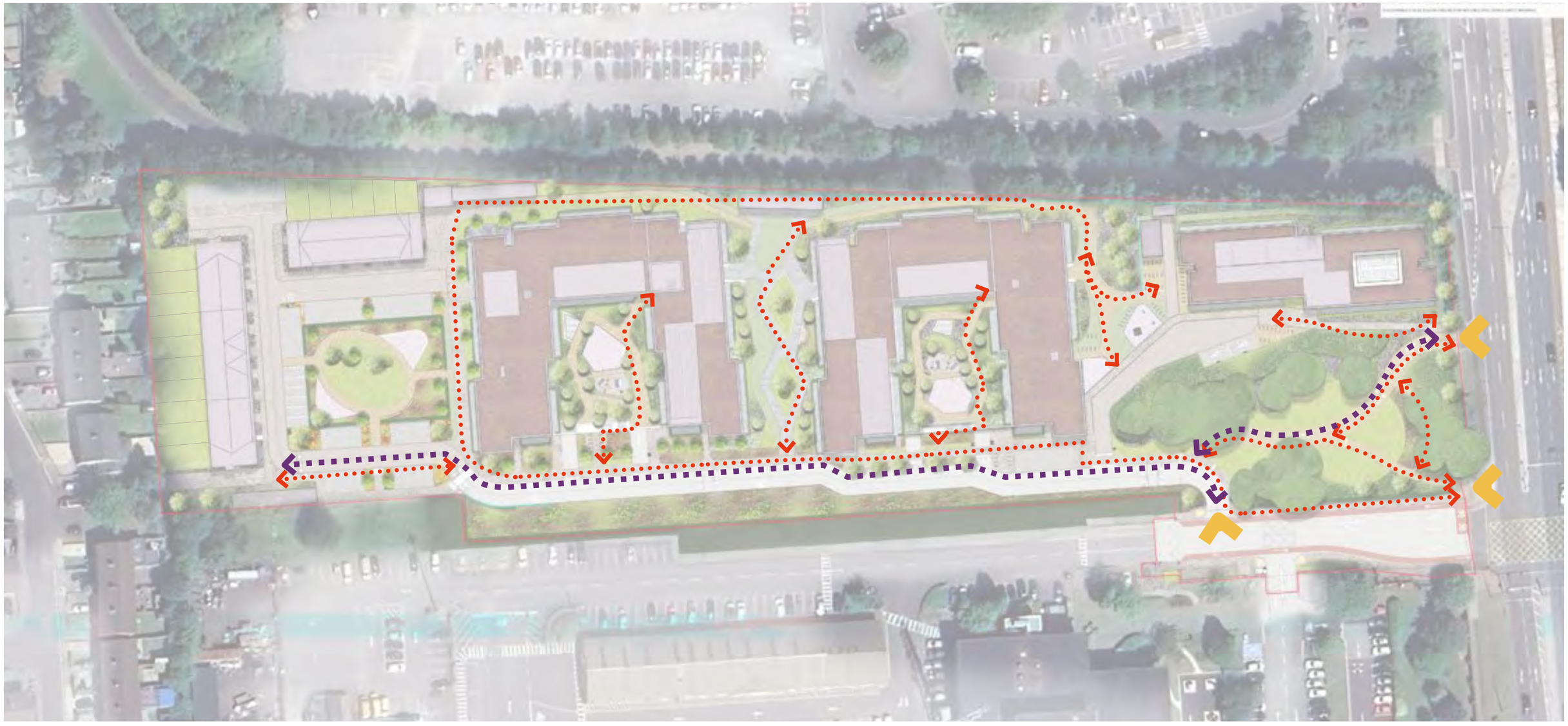
INFORMAL PLAY, SEATING & WALKING- ENTRANCE AREA

COMMUNAL AREA, SEATING, INFORMAL PLAY

ACTIVE PLAY, SEATING

BUFFER LANDSCAPE

ACCESS & CONNECTIONS

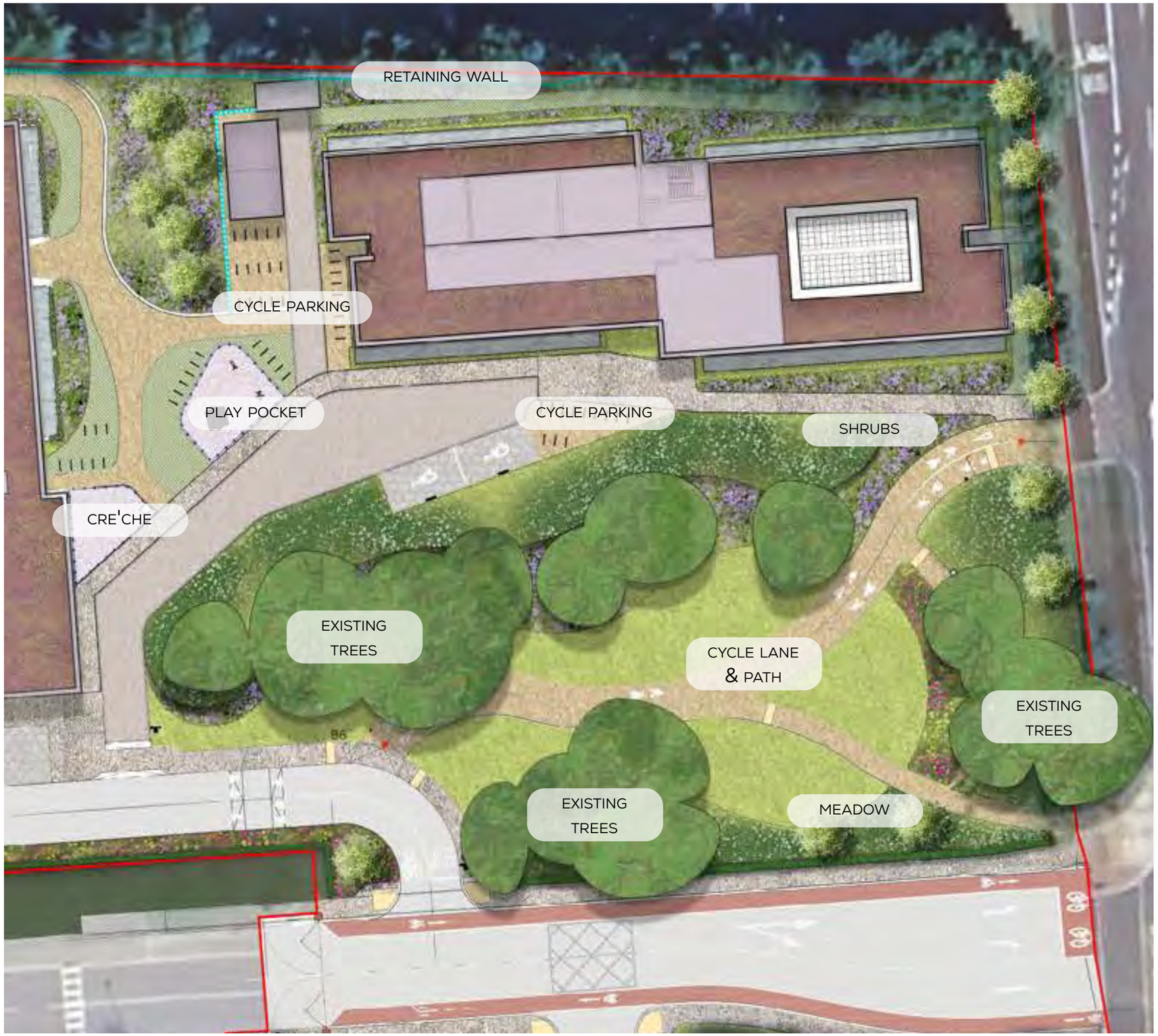


PEDESTRIAN LINKAGE

CYCLE CONNECTION

SITE ACCESS

ARRIVAL AREA & VILLAGE GREEN



The entrance area and village green serve as the welcoming gateway to the eastern side of the development.

This character area combines thoughtful design with natural elements, balancing the necessary removal of some existing trees to accommodate the eastern and middle blocks with the retention of several key mature trees.

These retained trees lend the space its distinctive tranquil atmosphere.

A main pathway forms the central axis of the development's entrance, providing a seamless and inviting connection for pedestrians and cyclists between the eastern and western portions of the site.

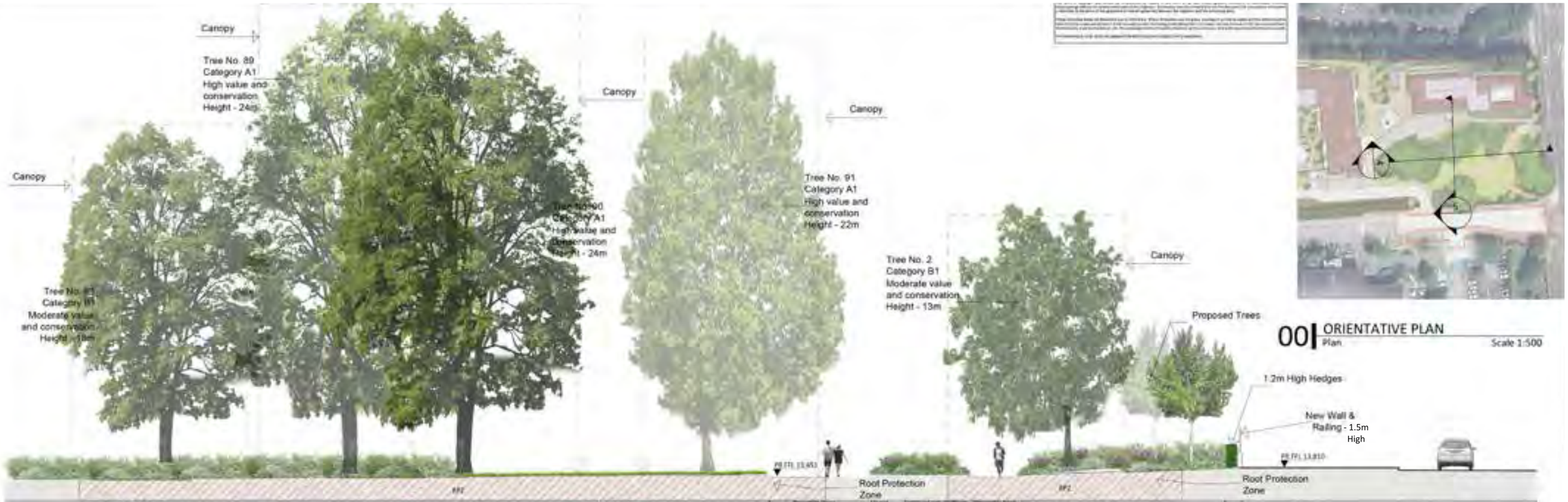
Key features of this space include:

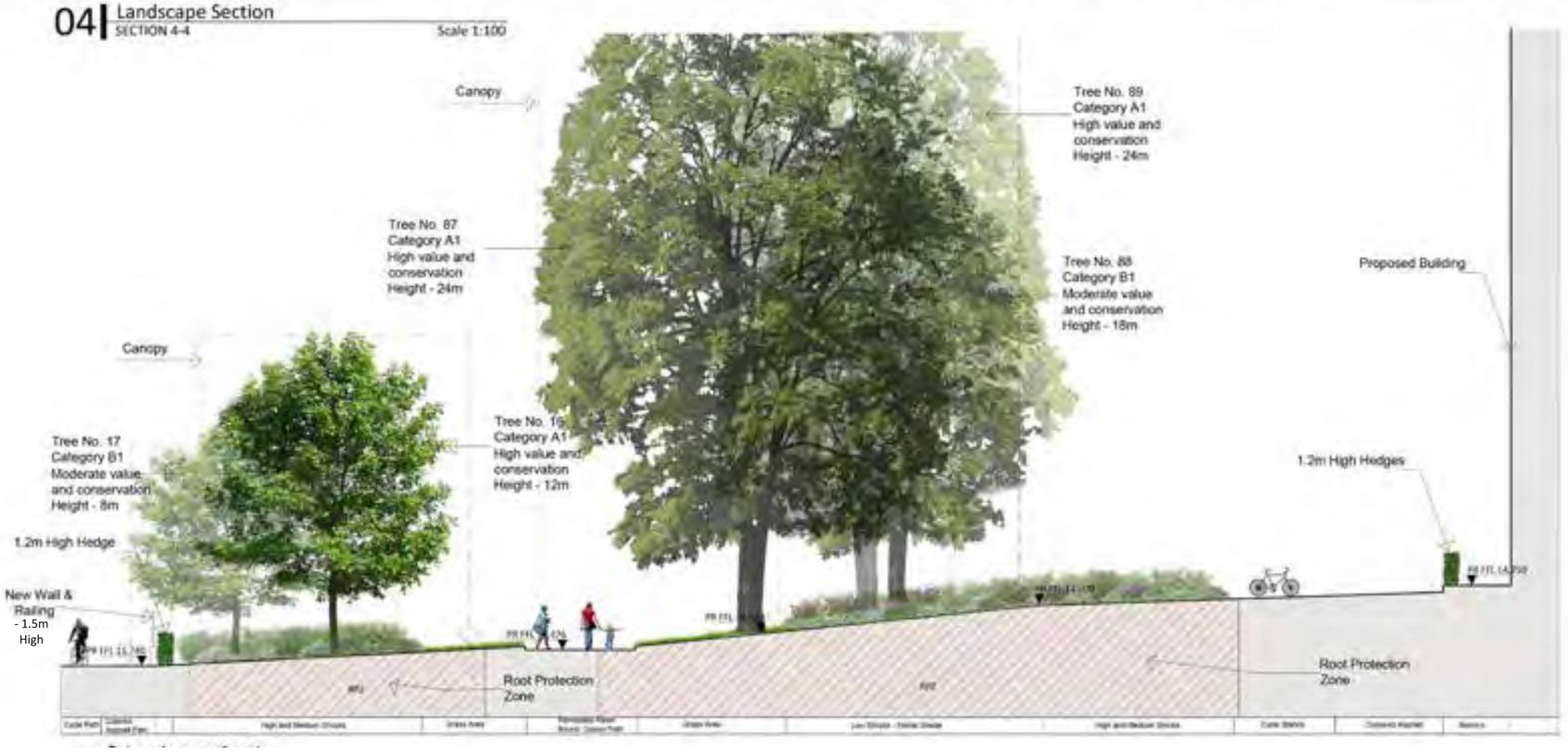
- Cycle parking: Conveniently located to encourage sustainable transport.
- Enclosed play area: Designed for safety and functionality.
- Pocket seating areas: Crafted with high-quality materials to enhance comfort and aesthetics.

To enrich the space further, a carefully selected planting scheme, including a variety of species and wild-flower meadows, has been introduced.

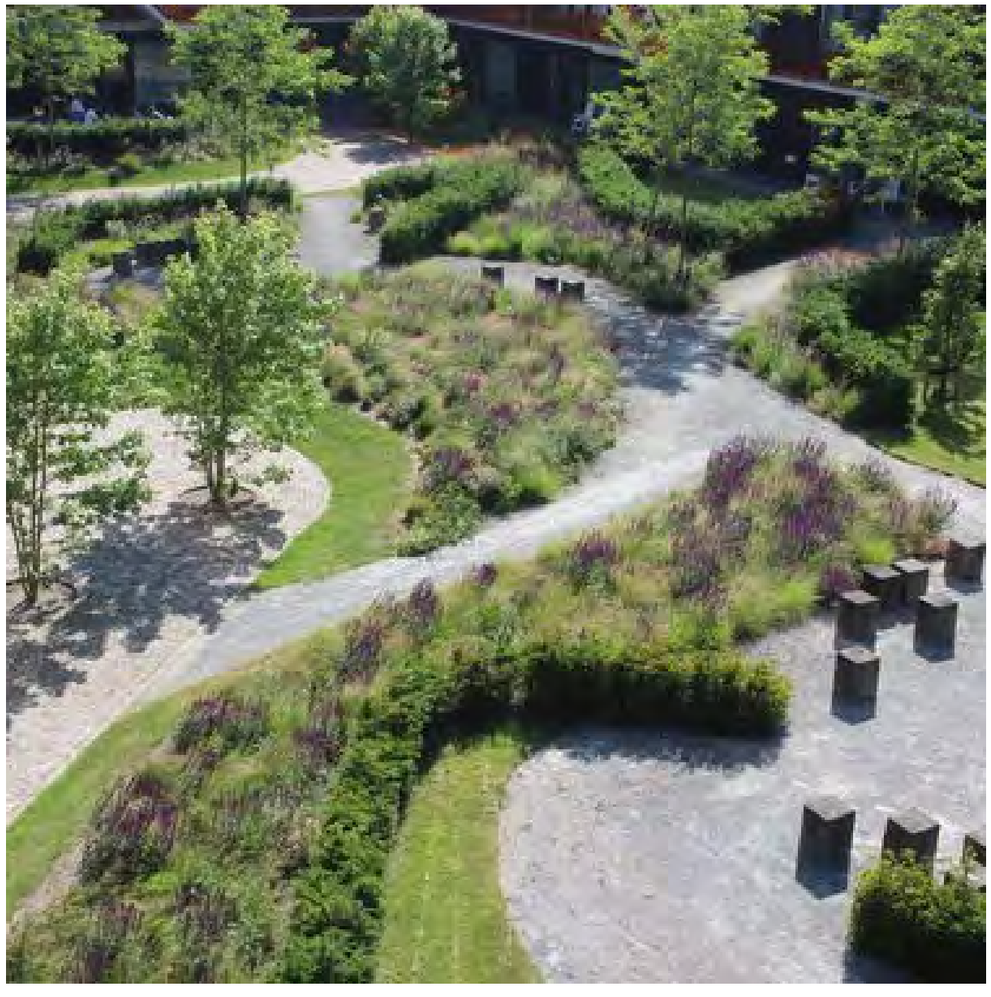
These elements add vibrant seasonal colour and enhance the biodiversity of the development, creating an engaging and environmentally sensitive environment

ARRIVAL AREA & VILLAGE GREEN - LANDSCAPE SECTION





VILLAGE GREEN



COMMUNITY DECK 1

The Western and Middle Apartment Blocks will benefit from central courtyard communal open space areas, situated at podium level above the undercroft car parks.

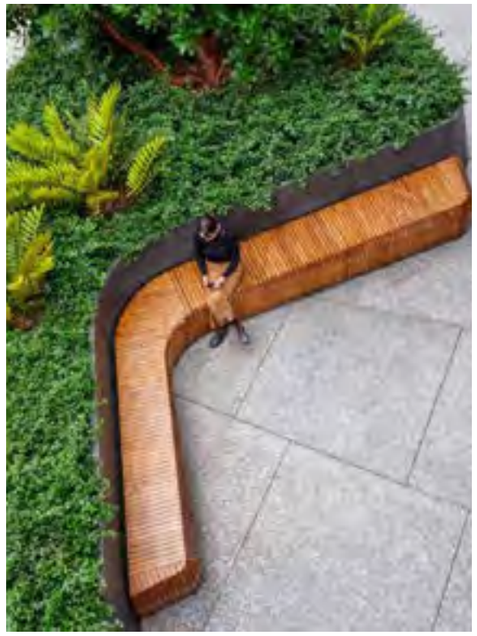
These podium gardens are designed to provide high-quality amenity spaces for residents, featuring a range of elements to cater to both active and passive recreation needs while adhering to the relevant requirements of the apartment design guidelines.

Key features of the podium gardens include:

- Seating and play/exercise features: These elements encourage social interaction, relaxation, and physical activity.
- Shrub planting arrangements: Strategically designed to centralise communal activities within the courtyards while maintaining privacy for the external terrace spaces of podium-level apartments.
- Soft landscaping: A mix of raised beds and mounding will support a variety of planting species, including multi-stem trees, to introduce vertical scale and a sense of maturity to the courtyards.

This carefully curated design ensures that the podium gardens provide functional, aesthetically pleasing, and private spaces, fostering a sense of community while enhancing the overall landscape character of the development

COMMUNITY DECK 2



COMMUNITY DECK

COMMUNITY DECK

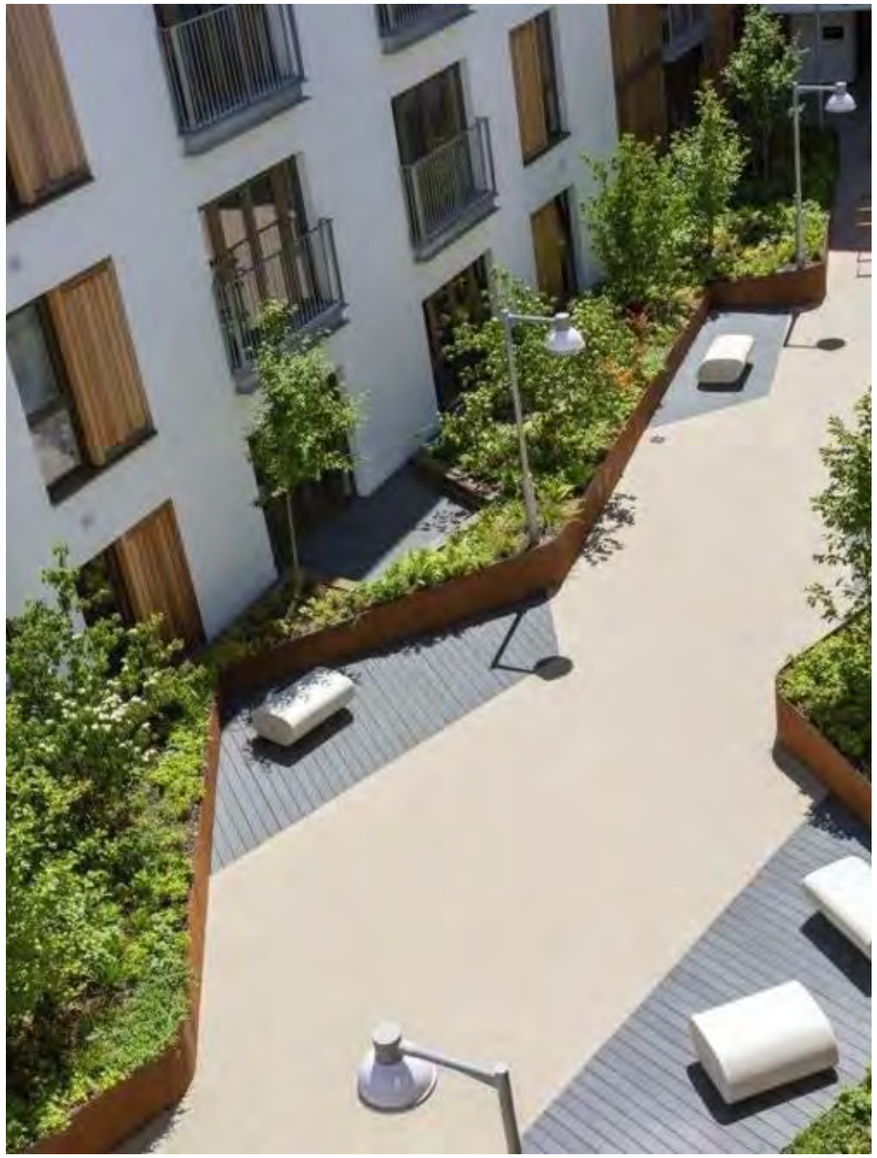
COMMUNITY COURT

The Community Court serves as a key pedestrian link, seamlessly connecting the heart of the development and providing direct access to the main building.

This thoughtfully designed corridor is characterised by:

- Mounded planting zones and tree clusters: These features enhance the aesthetic appeal of the walkway, fostering a sense of community and connection with nature.
- Defensible spaces: Strategically designed to protect and screen the private terraces, ensuring residents' privacy and comfort.
- Amenities at the northern end: A covered cycle parking area is conveniently located for residents, complemented by a pocket seating area that offers a welcoming spot for rest and social interaction.

The Community Court not only facilitates movement through the scheme but also creates a vibrant, inclusive, and visually engaging environment that enriches the overall character of the development.



COMMUNITY COURT

FORMAL SQUARE

This green open space, exclusively accessible to Wilton residents, offers a versatile setting for recreation and relaxation.

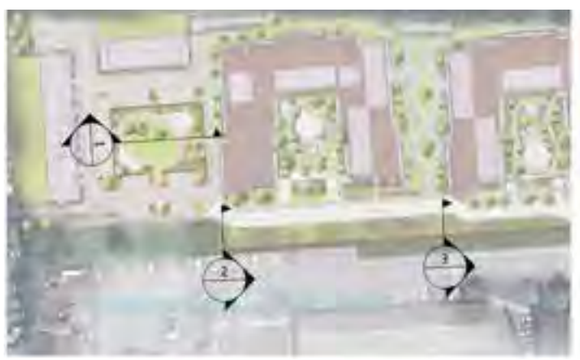
Key features include a kick-about zone, children's natural play equipment, and seating areas, catering to both active and passive activities.

The space is bordered by a low hedge, providing a protective buffer from adjacent car parking areas while fostering a sense of enclosure.

Thoughtfully designed pathways connect different sides of the space, ensuring ease of movement.

Shrub and hedge planting further enhance biodiversity and soften the edges, creating a visually appealing and ecologically friendly environment

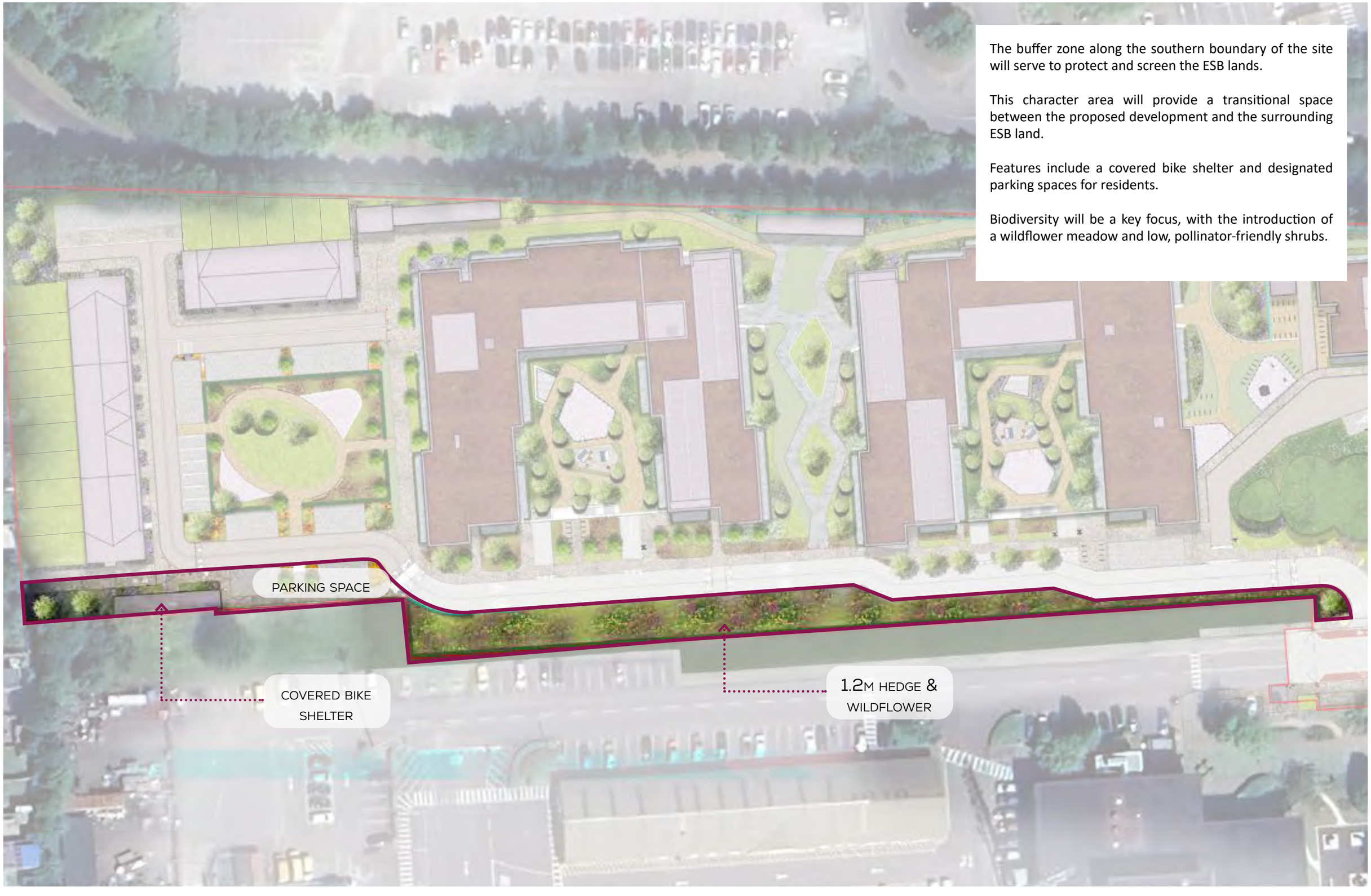
FORMAL SQUARE - LANDSCAPE SECTION



01 | Landscape Section
SECTION 1-1 Scale 1:100

FORMAL SQUARE

BUFFER ZONE



The buffer zone along the southern boundary of the site will serve to protect and screen the ESB lands.

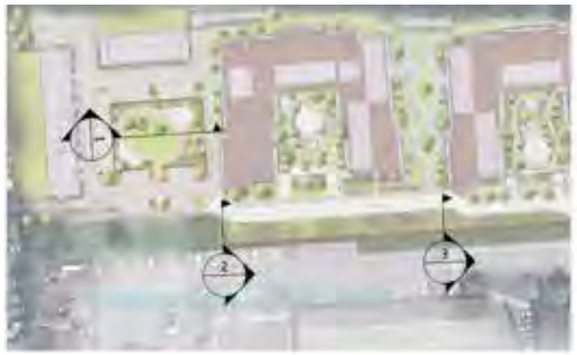
This character area will provide a transitional space between the proposed development and the surrounding ESB land.

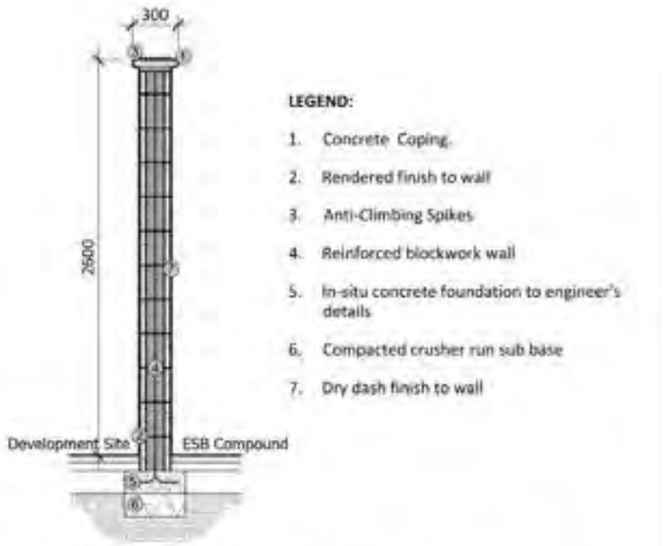
Features include a covered bike shelter and designated parking spaces for residents.

Biodiversity will be a key focus, with the introduction of a wildflower meadow and low, pollinator-friendly shrubs.

BUFFER ZONE – LANDSCAPE SECTION

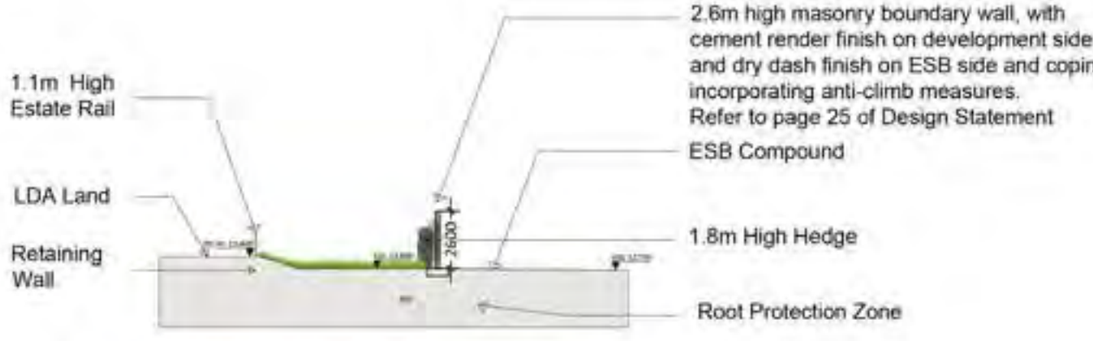
The installation of the concrete plinth will be coordinated during the construction phase (utilising specialist methods of construction and/or technical solutions that will reduce or eliminate the impact to roots and soil environments) under the supervision of a qualified Arborist.





04 MASONRY BOUNDARY WALL
Typical Section Scale 1:30

02 Landscape Section
SECTION 2-2 Scale 1:100



03 Landscape Section
SECTION 3-3 Scale 1:100

WOODLAND
WALKWAY

PLAY AREA PROVISION

Open space areas and communal spaces throughout the development will incorporate a mix of play types to cater for a wide range of ages and uses. These play types include natural play, an equipped larger scale community play area.

Natural play spaces are designed to adapt to the particular place where they are implemented. They provide a space and a setting for play (rather than an over-emphasis on equipment for children to play with); are located close to where children live, with the emphasis on natural play spaces which focus on the type of play that is most important to younger children in the age bracket 0-6.

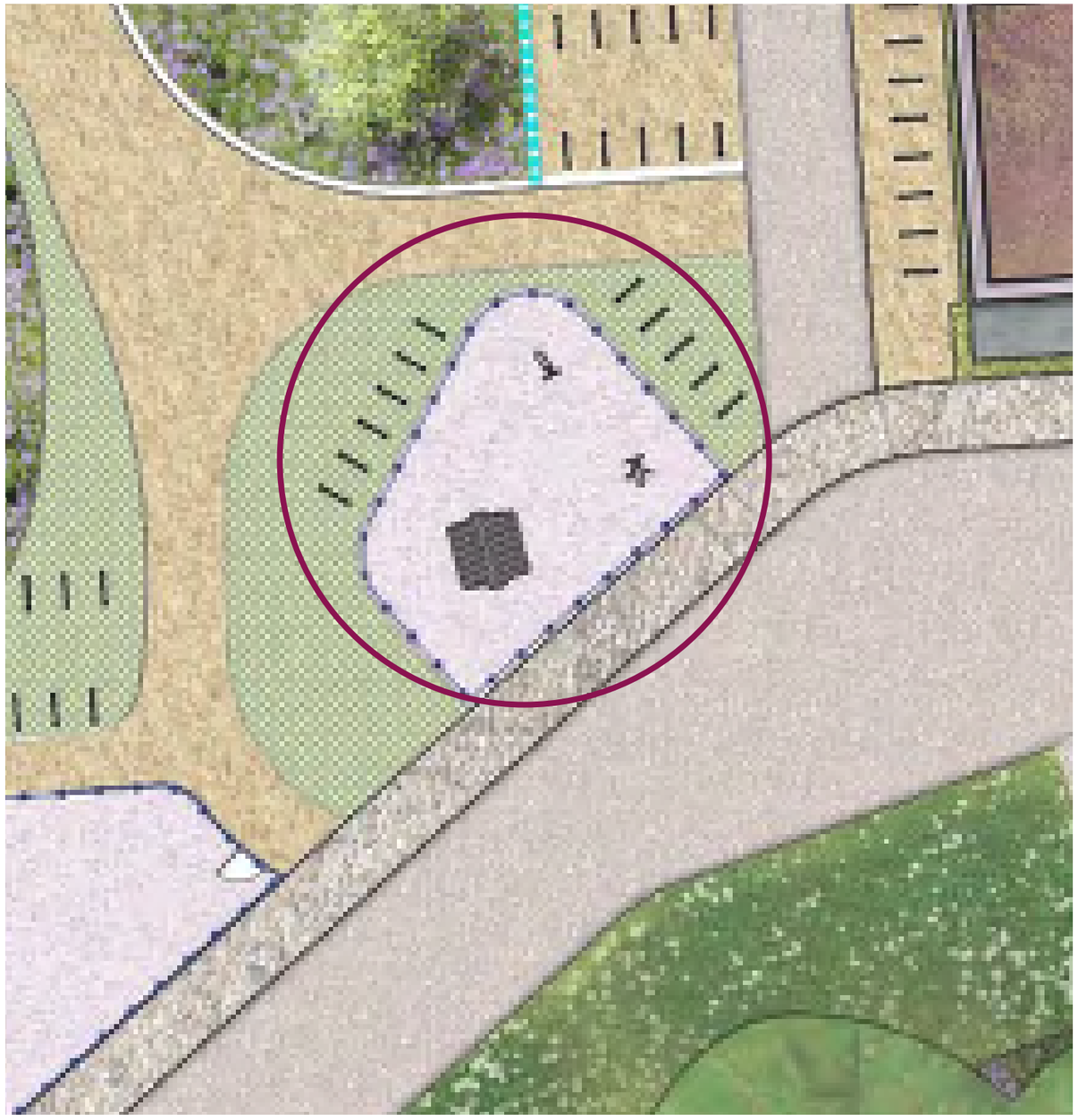
These natural play spaces will incorporate an element of risk (or replicate natural experiences) and encourage contact with nature and the smaller scale is easily relatable to younger children.

Small scale play structures will be incorporated along the pathways of the Wilton Cork at the entrance open space areas to provide points of interest along the routes and ensure accessibility for young children in the age bracket 0-6 by providing facilities in close proximity to all dwellings.

PLAY AREA PROVISION

PLAY AREA PROVISION - NATURAL PLAY EQUIPMENT

PLAY AREA PROVISION - TODDLER EQUIPMENT



SOFTSCAPE PLANTING

Softworks

Existing Trees to be retained

TREES								
TAG	SPECIES	NATIVE	POLLINATOR FRIENDLY	ATTRACTIVE TO WILDLIFE	SPEC	GIRTH [cm]	HEIGHT [m]	QUANTITIES
Bp	Betula pendula	Y	Y	Y	3XTR, 2m clear stem	16-18	4.5	14
Sa	Sorbus aucuparia	Y	Y	Y	3XTR, 2m clear stem	16-18	4.5	9
Pg	Pyrus calleryana 'Chanticleer'	Y	Y	Y	3XTR, 2m clear stem	16-18	4.5	7
Ac	Acer campestre 'Elsrijk'	Y	Y	Y	3XTR, 2m clear stem	16-18	4.5	5
Tg	Tilia cordata 'Greenspire'	N	Y	Y	3XTR, 2m clear stem	18-20	5	7
Bj	Betula utilis 'Jacquemontii'	N	Y	Y	Multistem 4x tr (RB)	x	3.5-4.0	27
Am	Amelanchier lamarkii	N	Y	Y	Multistem 4x tr (RB)	x	3.5-4.0	12
SUDs TREES								
Ls	Liquidambar stryraciflua	N	Y	Y	3XTR, 2m clear stem	16-18	4.5	11
Bn	Betula nigra	N	Y	Y	3XTR, 2m clear stem	16-18	4.5	11

MIX 01 - HIGH AND MEDIUM SHRUBS 1075 sqm								
	SPECIES	NATIVE	POLLINATOR FRIENDLY	ATTRACTIVE TO WILDLIFE	DENSITY /m2	STOCK	HEIGHT [cm]	%
	SHRUBS							
	Viburnum tinus 'Eve Price'	N	Y	Y	2	C5	40-50	20
	Pyracantha 'Saphyr Orange'	N	Y	Y	2	C5	40-50	20
	Elaeagnus x ebbingei 'Gilt Edge'	N	Y	Y	2	C5	40-50	20
	Viburnum davidii 'Angustifolium'	N	Y	Y	2	C5	40-50	20
	PERENNIALS							
	Euphorbia amygdaloides var. robbiae	N	Y	Y	5	C2	full pot	20

MIX 02 - MEDIUM/LOW PLANTING - SUNNY 620 sqm								
	SPECIES	NATIVE	POLLINATOR FRIENDLY	ATTRACTIVE TO WILDLIFE	DENSITY /m2	STOCK	HEIGHT [cm]	%
	SHRUBS							
	Potentilla fruticosa 'Marian Red Robin'	N	Y	Y	5	C2	30-40	11
	Euonymus fortunei 'Emerald'n'Gold'	N			6	C2	25-30	11
	Spiraea japonica 'Goldflame'	N	Y	Y	5	C2	30-40	11
	Nandina domestica 'Obsessed'	N			6	C2	25-30	11
	PERENNIALS							
	Salvia nemorosa 'Caradonna'	N	Y	Y	7	C2	full pot	11
	ORNAMENTAL GRASSES							
	Sesleria autumnalis	N		Y	6	C2	full pot	11
	Anemanthele lessoniana	N		Y	6	C2	full pot	11
	BULBS							
	Narcissus 'Thalia	N			group of 9	bulbs	-	11
	Narcissus 'Lemon Drop'	N			group of 9	bulbs	-	11

MIX 03- LOW SHRUBS - PARTIAL SHADE 1889 sqm								
	SPECIES	NATIVE	POLLINATOR FRIENDLY	ATTRACTIVE TO WILDLIFE	DENSITY /m2	STOCK	HEIGHT [cm]	%
	SHRUBS							
	Skimmia japonica 'Pink Dwarf'	N	Y	Y	4	C2	25-35	11
	Hebe 'Green Globe'	N	Y	Y	5	C2	20-30	11
	Pachysandra terminalis	N			11	P9	10-15	11
	Leucothoe keiskei 'Burning Love'	N		Y	6	C2	20-30	11
	Euonymus fortunei 'Emerald Gaiety'	N			6	C2	25-30	11
	Pieris japonica 'Little Heath'	N	Y	Y	5	C2	25-30	11
	Hebe 'Caledonia'	N	Y	Y	5	C2	25-30	11
	BULBS							
	Narcissus 'Thalia	N			group of 9	bulbs	-	11
	Narcissus 'Lemon Drop'	N			group of 9	bulbs	-	11

MIX 04 -ATTENUATION AREA PLANTING 310 sqm								
	SPECIES	NATIVE	POLLINATOR FRIENDLY	ATTRACTIVE TO WILDLIFE	DENSITY /m2	STOCK	HEIGHT [cm]	%
	Iris pseudoacorus	Y	Y	Y	7	C2	25-30	10
	Geranium 'Gerwat'	N	Y	Y	7	C2	25-30	10
	Lythrum salicaria	Y	Y	Y	7	C2	25-30	15
	Hemerocallis 'Luxury Lace'	N	N	N	7	C2	25-30	10
	Deschampsia cespitosa	N	N	Y	5	C2	25-30	5
	Caltha palustris	Y	Y	Y	9	P9	10-15	5
	Ajuga reptans	Y	Y	Y	12	P9	10-15	15
	Bergenia cordifolia 'Overture'	N	Y	Y	6	C2	25-30	10
	Monarda 'Cambridge Scarlet'	N	Y	Y	7	C2	25-30	5
	Osmunda regalis	Y	N	Y	5	C2	30-40	15

HEDGE TYPE 01 109 lin m						
SPECIES	NATIVE	POLLINATOR FRIENDLY	ATTRACTIVE TO WILDLIFE	DENSITY / lin m	STOCK	HEIGHT [mm]
Buxus sempervivens	Y	Y	Y	5	RB	900

HEDGE TYPE 02 860 lin m						
SPECIES	NATIVE	POLLINATOR FRIENDLY	ATTRACTIVE TO WILDLIFE	DENSITY / lin m	STOCK	HEIGHT [mm]
Crataegus monogyna	Y	Y	Y	5	RB	1200
Prunus spinosa	Y	Y	Y	5	RB	1800
Corylus avellana	Y	Y	Y	5	RB	1200
Ilex aquifolium	Y	Y	Y	5	RB	1800
Berberis wilsoniae	N	Y	Y	5	RB	1200
Pyracantha 'Teton'	N	Y	Y	5	RB	1800

Lawn Turf 2600 M2

Grass seed with general seed mix e.g. Mix: 30% (Perennial Ryegrass) + 30% (Perennial Ryegrass) + 40% (Strong creeping red fescue) + Sowing rate: 35g/m2 (12.5Kg 20 bags/Ha @ 25/gm2) Cutting height: Between 20-50mm

Wildflower 1735 M2

Traditional Irish Wildflower Native Mix

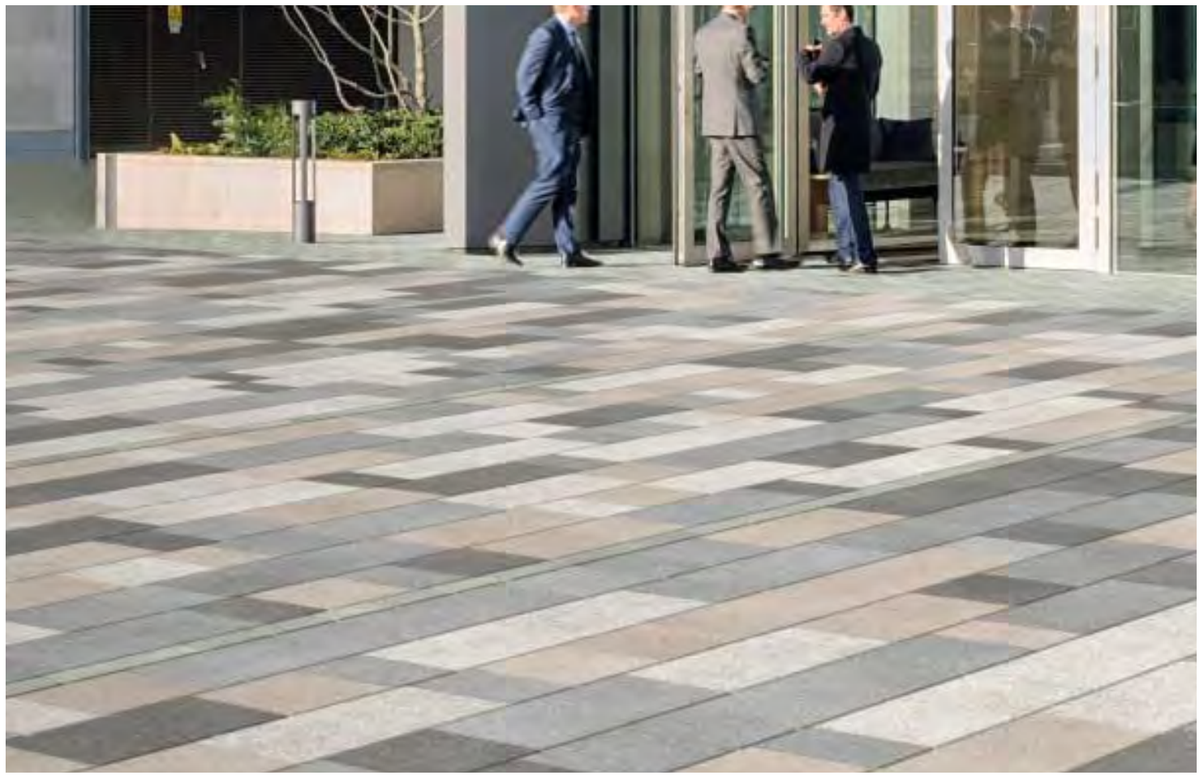
Birdsfoot Trefoil, Bush Vetch. Corn Marigold, Corn Poppy, Corncockle, Cowslip, Meadow Buttercup, Field Scabious, Kidney Vetch, Lady's Bedstraw, Lesser Knapweed, Marjoram, Eyebright, Mullein, Ox-eye Daisy, Hawksbit, Red Bartsia, Red Campion, Red Clover, St Johnswort, Wild Carrot, Yarrow, Yellow Rattle, Species in small quantities: White Campion, Feverfew, Cornflower, Scentless Mayweed, Birdsfoot Trefoil, Purple Loosestrife, White Bedstraw, Ragged Robin, Selfheal, Yellow Agrimony

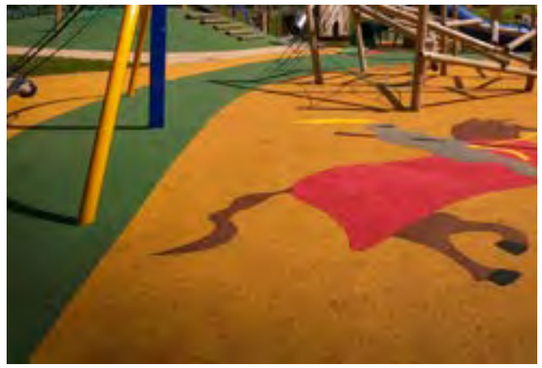
Sedum Blanket - AREA - 3930m2	
	SPECIES
	Sedum Acre Aureum
	Sedum Album Coral Carpet
	Sedum Album Mini
	Sedum Album Athoum
	Sedum Hispanicum
	Sedum Summer Glory
	Sedum Reflexum
	Sedum Weihenstephaner Gold
	Sedum Voodoo
	REFER TO SUPPLIER SPECIFICATION

Site Boundary

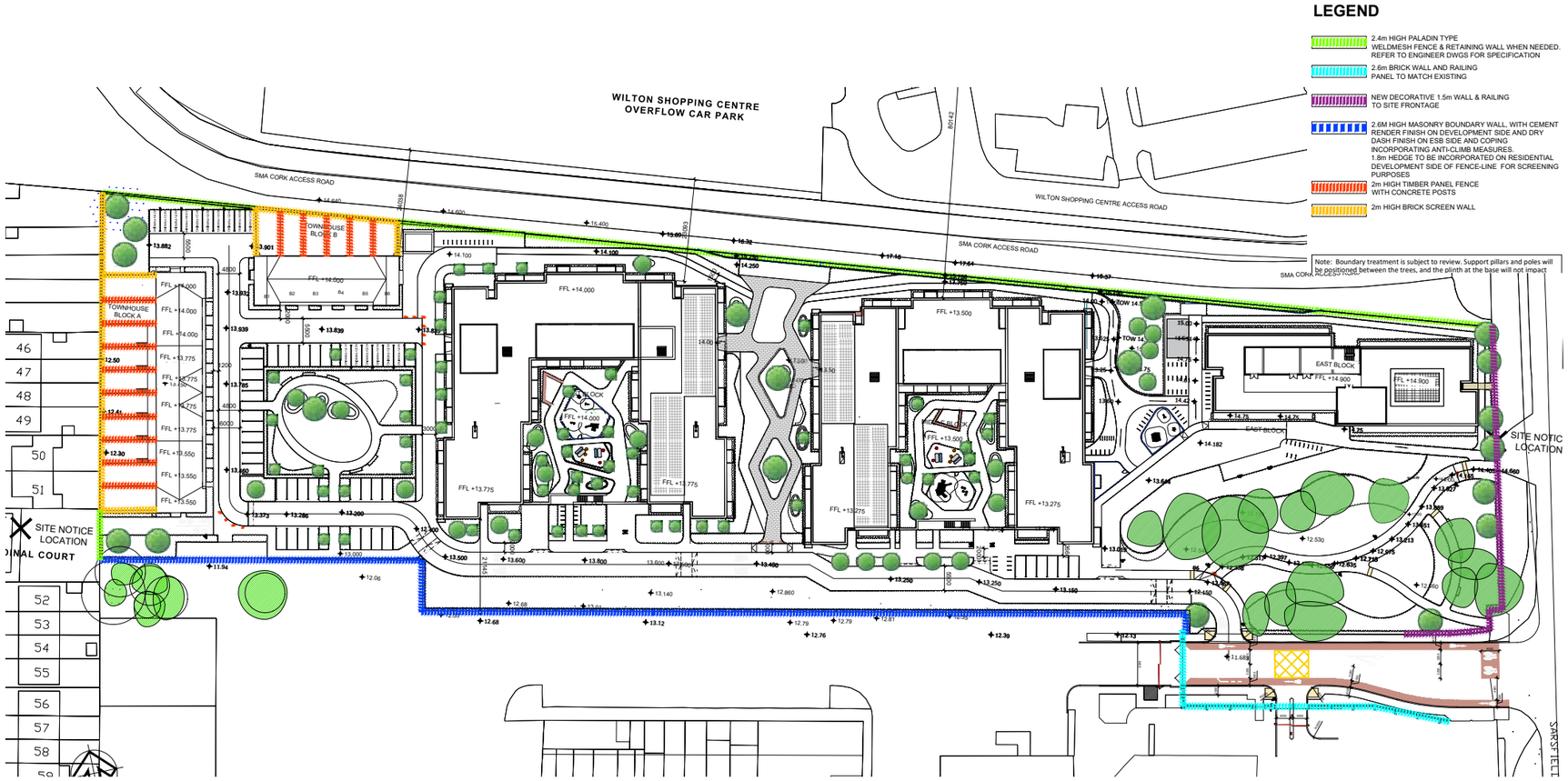
SOFTSCAPE PLANTING

HARDSCAPE





BOUNDARY TREATMENT



2.6M HIGH MASONRY BOUNDARY WITH CEMENT RENDER FINISH ON DEVELOPMENT SIDE AND DRY DASH FINISH ON ESB SIDE WITH CONCRETE COPING INCORPORATING ANTI CLIMB MEASURES
1.8M HEDGE TO BE INCORPORATED FOR SCREENING PURPOSE

DECORATIVE RAILING TO SITE FRONTAGE

PALADIN TYPE MESH FENCE TO ESB LANDS & WESTERN BOUNDARY

TIMBER PANEL FENCE TO REAR GARDENS

Boundary Treatments for Wilton, Cork

Eastern Boundary (Adjacent to Sarsfield Road):

This boundary features a 2.6m high brick wall with railings, providing a combination of security, durability, and aesthetic appeal. The brick complements the architectural character of the development, while the railing allows for visual permeability, ensuring the area remains welcoming and not overly enclosed.

Northern Boundary:

A 2.4m high Paladin fence defines this section, offering a practical, secure, and cost-effective solution. Its open-mesh design maintains visibility while providing a sturdy boundary that is well-suited for the location's functional needs.

Around the Townhouses:

Surrounding the townhouses is a 2m high brick screen wall, which provides privacy and noise reduction for residents. The brick construction ensures durability and integrates well with the development's overall architectural style.

Western Boundary (Townhouse Edge):

Along the edge of the townhouse area, a 2m high timber panel fence with concrete posts has been incorporated. This treatment balances functionality and natural aesthetics, creating a softer boundary that blends harmoniously with the residential environment while maintaining durability with concrete supports.

Southern Boundary (Preservation of Existing Trees):

This boundary features a 2.6m high masonry rendered boundary wall with concrete coping incorporating anti climb measures. Additionally, a 1.8m hedge has been planted to provide extra screening and support biodiversity, creating a green and attractive edge that integrates with the landscape character.

These treatments have been thoughtfully selected to balance privacy, security, and aesthetics while respecting the existing natural features of the site.

DRAINAGE/SUDS

Sustainable drainage is a key focus of the landscape treatment for the entire development.

The roof and podium areas of all apartment blocks will be a combination of permeable hard landscape materials, planting areas and sedum/wild-flower green roof treatments to slow down the flow of water from areas that traditionally contribute to high runoff flow rates during rainfall.

The landscape proposals also seek to create attenuation areas on all on-street car parking areas by using permeable paving and channelling runoff to large planted areas that also aim to visually break up the streetscape and ensure carparking is not visually dominant. These planted areas will contain suitably tolerant planting species.

All relevant SUDs measures have been developed in line with Nature-based Solutions to the Management of Rainwater and Surface Water Runoff in Urban Areas best practice guidelines.

BIODIVERSITY

The landscape design proposals have been carefully coordinated with the project ecologist. A comprehensive landscape design has been developed which will include additional boundary planting with native species and the creation of an ecological buffer zone along the northern and eastern boundaries of the site to ensure existing bat flight routes and wildlife corridors are maintained.

Where trees need to be removed to facilitate development, these will be compensated for by planting new standard trees.

In addition, the landscape proposals include hedge planting, shrub and herbaceous planting, amenity grass and meadow grass.

Roof level of apartment blocks will be developed into green spaces and be planted with a mix of sedum and appropriate wild-flowers to further benefit pollinating species and help attenuate water runoff.

Planting schedules have been developed with reference to Ireland's 4th National Biodiversity Action Plan (NBAP) 2023-2030 and the All Ireland Pollinator Plan 2021-2025 in order to create areas of ecological enhancement and a biodiversity net gain.

UNIVERSAL ACCESS

The scheme has been designed to incorporate the following principles:

• Access routes to the facilities and services within the development have been maximized for all future users of the scheme.

• Accessible routes to adjoining pedestrian routes are proposed, accommodating level changes on the most inclusive and sustainable way.

• Accessible drop-off points will be within 50m of eacha apartment and duplex block with entrance doors designed to ensure that people can use them without requiring assistance.

• All houses and apartments will have Part-M compliant access into the buildings.

All areas of the proposed development will be fully accessible with hard landscape materials selected to ensure universal access. Levels and gradients have been designed in line with DMURS, Part M of the Building Regulations accessibility requirements and DLR Policy Objective PHP36: Inclusive Design & Universal Access. The scheme has been designed to provide accessible routes throughout the site which connect with all open space areas. These routes contain features for all age groups including play provision and seating/ resting areas. All street furniture within public and semi-private areas of the development will meet the required levels of visual contrast with adjacent surroundings to ensure they do not represent a hazard and all stepped level changes will be fully demarcated. The location of all street furniture has been developed to ensure it does not cause a potential hazard for partially sighted people.

Paving selection will comply with current regulations in regard to Part M of the Building Regulations, ensuring safe entry, exit and safe passage throughout the space. LRV values will be compliant to ensure good visual contrast between various landscape elements such as step treads and risers. All designated road crossing points will be defined by tactile paving to the appropriate standards and this has been fully coordinated with the roads engineers.

A mix of high quality natural aggregate finish paving setts and flags will be used for the key public spaces at the Market Square and the entrance plazas to the main apartment blocks to identify these areas as key nodes within the development and maintain the quality feel of the public realm.

LANDSCAPE SPECIFICATION

GENERALLY

Landscape works to be undertaken by an ALCI approved landscape contractor and in accordance with BS 4428:1989 Code of practice for general landscape operations (excluding hard surfaces). When using pesticides the Contractor must use a certified operator and take appropriate safety precautions in accordance with the Control of Pesticides Regulations 1986 (COPR) and the Plant Protection Products Regulations 1993 (PPPR). All fertilisers are to be applied by qualified staff to avoid the action of plasmolysis.

Top soil to be tested and approved by a Top Soil Analyst and any required amelioration or soil improvements to be carried out in line with Analyst's report, if necessary, according to BS 4428: 1989 'Code of Practice for General Landscape Operations'.

All Plants shall be of the size stated, shall conform to BS 3936 - Part 1: Nursery stock specification for trees and shrubs.
All tree works shall conform with BS 8545:2014 Trees: from nursery to independence in the landscape - Recommendations.
All top soil to conform to BS 3882:2015 - Specification for Topsoil.

All planting species shall be carefully selected to survive the potentially harsh coastal conditions.

GROUND PREPARATION

Prior to cultivation, planted areas shall be cleared of all loose debris, rubbish, stones over 25mm in diameter, roots, and other extraneous matter. Grass and weeds shall be sprayed with 'Glyphosate' or similar COSHH approved herbicide. Topsoil Depths: spread over prepared subsoil in layers not exceeding 150 mm, each layer firmed before spreading the next. Top Soils shall comply with BS 3882:2015 - Specification for Top Soil. Overall minimum depths after firming and settlement to be:

Shrub areas	500 mm
Grass areas	150mm

Planted areas to be cultivated to a depth of 300mm by hand or rotovator, incorporating planting compost, soil improver and fertilizer base dressing of the types. The topsoil shall have been reduced to a fine tilth on completion of the cultivation works. Lightweight soil mixes to be used for podium level and roof terrace planting beds.

PROPOSED TREE PLANTING

Trees supply and planting shall correspond to BS 8545:2014 Trees: from nursery to independence in the landscape - Recommendations. Planting of trees shall be undertaken in favourable weather conditions between October 31st to March 31st unless trees have been prepared for out of season planting.

Tree pits shall be excavated to suitable dimensions to accommodate root-balls with bases and sides broken up to a minimum depth of 150mm to assist drainage and root penetration. Any unsuitable material such as large clay lumps, bricks, concrete, timber and sand shall be removed off-site. All tree pits shall be backfilled, after planting, with a 3:1 volume mixture of topsoil and mulching compost/ manure or similar approved.

The planted trees shall be full and well-shaped with crowns thinned by 30% according to good horticultural practice and in a manner that does not affect the overall stature, structure or good appearance of the tree. All work shall conform to a minimum standard as set out in BS 4043:1989 Recommendations for transplanting root-balled trees.

PROPOSED HEDGE PLANTING

Screen hedge to be planted at 4 per linear metre.
Plants shall be of the size stated, shall conform to BS 3936 - Part 1: Nursery stock specification for trees and shrubs.

Planting strip to be 500mm wide x 300mm deep with cultivated and evenly incorporated organic manure 100mm layer over area of strip, fertiliser 35g. 50mm depth bark mulch dressing on completion of planting.

PROPOSED SHRUB PLANTING

Shrub plants to be planted at 3 to 4 plants per m^2. Transplants and container grown shrubs shall be of the size stated and conform to BS 3936 - Part 1: Nursery stock specification for trees and shrubs.

Planting pockets 400x400x300mm deep with cultivated and evenly incorporated: organic manure 100mm layer over area of pit, fertiliser 35g. 75mm depth bark mulch dressing on completion of planting.

PROPOSED TURF AREAS

All grass areas to be high grade turf rolls laid on 150mm depth lightweight soil mix.

PERFORMANCE CRITERIA

Performance criteria are indicators for assessing the quality and success of the particular plant mixtures used for a purpose i.e. screen planting, seeding, tree planting etc.
Such indicators will be based upon aspects such as:
Health and condition of planting;
Plant growth;
and Achievement of desired visual effect.

MAINTENANCE

A Landscape Management & Maintenance Plan will be prepared to include details on weeding, spot herbiciding, watering, planting management, control of insects/diseases and grass mowing.

Initial landscape operations will be undertaken by an ALCI member.

The Contractor will be responsible for plant establishment and one year of establishment maintenance. The Landscape Architect will visit site at end of this year and produce a snagging list identifying all defects and outstanding items. Any trees or shrubs dying, damaged or removed will be replaced in the following planting season with plant of similar size and species.