Ecological Impact Assessment Report

Ballinacurra Mills LRD, Co. Cork.

December 2025

Prepared for:

Ballinacurra Project Limited Partnership

O'DONNELL ENVIRONMENTAL

CIEEM REGISTERED PRACTICE 2025-2026

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

Summary

Project: Proposed Large-scale Residential Development (LRD) at Ballinacurra Mills, Co. Cork.

Coordinates: W 88861 71652 (IG); 588813 571691 (ITM).

Company Profile: O'Donnell Environmental is an independent environmental consultancy established by Tom O'Donnell BSc (Hons) MSc CEnv MCIEEM in 2019. O'Donnell Environmental is a Chartered Institute of Ecology and Environmental Management (CIEEM) 'Registered Practice' which demonstrates our commitment to high professional standards, accountability and the delivery of the best outcomes for biodiversity and our Clients. O'Donnell Environmental maintains an ISO 9001:2015 certified Quality Management System, ensuring consistent quality and customer focus.

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Table of Contents

Appendices

Non-technical Summary

Ballinacurra Project Limited Partnership proposes to develop a residential and commercial development on a brownfield site in Ballinacurra, Co. Cork.

The site contains a series of derelict structures including Rosehill House and Eastville House. Fire damage has affected a large proportion of the commercial structures. No natural watercourses exist onsite, with the West Ballynacora Stream flowing approximately 10m north of the site and discharging into Cork Harbour.

The site is largely characterised by artificial surfaces and recolonising ground of low ecological value, with portions of scrub and mature trees providing higher ecological value. No high impact or Schedule III invasive plant species have been identified onsite. Bat roosting was identified in Rosehill House and Eastville House, and following Marnell (2022) this roosting is considered to be of relatively low conservation significance. A locally rare population of bee orchids was identified at the east of the site. hedgehog, a species in decline nationally, was recorded in the scrub surrounding Rosehill House. The red-listed Kestrel was identified successfully breeding within the mills complex, with amber-listed Barn Swallow nesting also noted. Potential exists for nesting of other species such as Swift, House Martin and House Sparrow. Overall, the site is considered to be of Local Importance (Higher Value) in terms of its ecological receptors.

O'Donnell Environmental collaborated with the design team to mitigate-by-design where feasible. Cork County Council were consulted during the Section 32B pre-planning process, including Ecologist Joy Barry, on landscape design and retention of mature trees. Continued bat roosting will be facilitated through artificial boxes on structures and the adaptation of the roof spaces of Rosehill House outbuildings and Kiln Building. Continued bird breeding will be facilitated for the above species through a similar integration of bird nesting structures throughout the site. bee orchids will be facilitated within their own designated meadow, alongside other measures such as native hedgerow and tree planting and establishment of flowering lawns.

With the implementation of the avoidance and mitigation measures outlined herein, and with consideration of cumulative effects, the overall ecological impact of the proposed project (relative to the ‘do-nothing’ scenario) is considered to be **slight negative at a local level** during construction. Following completion of construction, a **neutral** effect overall is expected, and following establishment of landscaping measures in the operational phase the predicted ecological effect of the proposed development is considered to be **a slight, positive effect at a local level** (following EPA, 2022). Following CIEEM (2024) the ecological effect of the proposed development is considered to be ‘**not significant**’.

1 Introduction

O'Donnell Environmental were commissioned by Ballinacurra Project Limited Partnership to undertake an ecological survey of the former Ballinacurra Mills site located within Ballinacurra, Co. Cork, in support of a planning application. The site measures approximately 3.63ha and contains a series of derelict buildings and residences namely Eastville House, Rosehill House and structures associated with the former mills. The site is dominated by recolonising artificial surfaces, encroaching scrub and mature trees.

The proposed works involve the renovation or removal of existing structures on the former mills site, and the development of a mixed residential and commercial development. A site location map is presented in **Figure 1.1**. A detailed project description is proposed in **Section 1.1** below.

The aims of the study were to describe the current ecological status the site and evaluate the ecological importance of key features, to identify potential impacts and to design appropriate enhancement, avoidance and reduction measures in response, and to determine the overall effect of the proposed development on ecological receptors.

This report is informed by the following documents which are submitted as part of the current planning application including:

- Arboricultural Impact Assessment Report – dated 28/10/2025 (Holly Arboriculture, 2025a)
- Tree Constraints Plan – dated 12/07/2025 (Holly Arboriculture, 2025b)
- Tree Protection Plan (Holly Arboriculture, 2025c) – dated 31/10/2025 (see **Appendix B**)
- Green Infrastructure and Landscape Strategy (Fourem, 2025) – dated 12/2025 (see **Appendix C**)
- Construction and Environmental Management Plan (CEMP) – dated 09/12/2025 (MHL, 2025a)
- Engineering Design Report – December 2025 (MHL, 2025b)
- Drainage Impact Assessment Report – December 2025 (MHL, 2025c)
- Outdoor Lighting Report – dated 27/10/2025 (Lighting Reality, 2025)
- Natura Impact Statement (O'Donnell Environmental, 2025a)
- Environmental Impact Assessment Screening Report (O'Donnell Environmental, 2025b).

O'Donnell Environmental consulted with Cork County Council, including Ecologist Joy Barry, during the Section 32B pre-planning process.

1.1 DESCRIPTION OF THE PROPOSAL

Ballinacurra Project Limited Partnership seek permission for development on lands measuring 3.63 hectares at the former Ballinacurra Mill Buildings (Protected Structure Ref. 523), Rosehill House (Protected Structure Ref. 520), and Eastville House (NIAH Ref. 20907636), Ballinacurra, Midleton, Co. Cork.

The proposed development consists of:

- The demolition of 1,165sq.m of structures associated with the former Mill, 3 no. vacant dwellings and an extension to the rear of Rosehill House.
- The provision of 128 residential units (103 dwellings and 25 no. apartments) as follows:
  - 92 no. new dwelling houses ranging from 2 to 3 storeys in height (comprising of 39 no. 2 bedroom houses, 36 no. 3 bedroom houses and 17 no. 4 bedroom houses)

- The conversion/change of use of existing structures to 11 no. dwelling houses (including 1 no. 4 bedroom dwelling in Rosehill House, 1 no. 3 bedroom dwelling in Rosehill outbuildings, 1 no. 2 bedroom dwelling and 1 no. 3 bedroom dwelling in Eastville House, and 3 no. 2 bedroom dwellings and 4 no. 3 bedroom dwellings in the Mill Buildings),
- The conversion/change of use of existing mill building structures ranging from 3 to 4 storeys in height to 25 no. apartments (comprising of 1 no. ground floor Studio and 10 no. 1 bedroom apartments and 14 no. 2 bedroom apartments in existing Mill buildings from first to third floor),
- Also, the construction of 1 no. single storey creche, 1 no. single storey café, 2 no. ground floor retail units, 1 no. ground floor commercial office unit, 1 no. ground floor medical centre unit, 1 no. ESB substation.

Ancillary works including provision of roads, footpaths, public open space, communal open space, private open spaces, 214 car park spaces, 114 cycle spaces, EV charging spaces, drainage infrastructure, 2 no. access points (one off Rose Lane and one off Cloyne Road, R629) and all associated site works including play area, landscaping and boundary treatments.

It is also proposed to carry out new car parking arrangements along part of Rose Lane to the north of the site measuring 0.057 hectares (bringing gross site area to 3.687 ha).

1.2 STATEMENT OF AUTHORITY

O'Donnell Environmental Ltd. is an independent environmental consultancy established by Tom O'Donnell BSc (Hons) MSc CEnv MCIEEM in 2019. Since then, O'Donnell Environmental has established itself as a provider of quality, Client-focused ecological and environmental services to public and private sector Clients nationwide. O'Donnell Environmental is a Chartered Institute of Ecology and Environmental Management (CIEEM) 'Registered Practice' which demonstrates our commitment to high professional standards and accountability.

Tom O'Donnell is a Chartered Environmentalist and a full member of the Chartered Institute of Ecology and Environmental Management. He was awarded a BSc in Environmental and Earth System Science [Applied Ecology] in 2007 and an MSc in Ecological Assessment in 2009, both from UCC. Tom has 17 years professional experience in the environmental industry, including working on projects such as windfarms, overhead power lines, roads, cycleways and residential developments. Tom is licensed by NPWS for roost disturbance (Ref: DER/BAT 2023-16) and to capture bats (C25/2023).

Colm Breslin BSc (Hons) is a Qualifying member of the Chartered Institute of Ecology and Environmental Management. He was awarded a BSc in Biological, Earth and Environmental Sciences [Ecology and Environmental Biology] in 2023 from UCC. Colm has experience in habitat mapping, bat activity surveys and preliminary roost assessments for a variety of windfarm and residential developments. Colm is licenced by NPWS for roost disturbance (Ref: DER/BAT 2025-108) and to capture bats (C03/2025).


Eastville House
Former Residence
Mill Buildings Complex
Rosehill House
0
25
50 m
Figure 1.1
Study Site Location
Project:
Ballinacurra Mills Redevelopment
Prepared for:
Ballinacurra Project Limited Partnership
Colm Breslin BSc (Hons)
D: 09/12/2025
Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation
O'DONNELL ENVIRONMENTAL
Legend
Fire Damage
Site Boundary
Passive Bat Monitor
Underground Service Tunnel
Watercourses [EPA]


Commuting Corridor
0
25
50 m
Figure 1.2
Lux Contours
Project:
Ballinacurra Mills Redevelopment
Prepared for:
Ballinacurra Project Limited Partnership
Colm Breslin BSc (Hons)
D: 26/11/2025
Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation
O'DONNELL ENVIRONMENTAL
Legend
Site Boundary
Watercourses [EPA]
Lighting Design
Luminaires
1.5 lux
3.0 lux
5.0 lux
10 lux

2 Methodology

Ecological surveys were informed by desk studies ecological surveying carried out from 2023 to 2025.

2.1 DESKTOP REVIEW

A desktop review of publicly available relevant data was undertaken on the National Biodiversity Data Centre (NBDC) and National Parks & Wildlife Service (NPWS) websites to identify any relevant rare or protected species records located within the relevant national grid squares encompassing the site. The Environmental Protection Agency (EPA) website was reviewed for relevant hydrological and environmental information.

The NBDC was reviewed for relevant data, specifically i) existing species records for the 10km square in which the study site is located (W87) and ii) an indication of the relative importance of the wider landscape in which the study site is located, based on Model of Bat Landscapes for Ireland (Lundy et al., 2011). In the latter, the index ranges from 0 to 100, with 0 being least favourable and 100 most favourable for bats.

Designated nature conservation sites within the wider hinterland of the proposed redevelopment were identified through a desktop review. Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) form part of a European Conservation network known as Natura 2000 sites. SACs are designated under the EU Habitats Directive[1] while SPAs designated under the EU Birds Directive[2].

Nature Reserves and Refuges for Fauna are protected under the Irish Wildlife Acts (1976 as amended). Nationally designated conservation sites include Natural Heritage Areas (NHAs) and proposed Natural Heritage Areas (pNHAs). NHAs are designated to protect habitats, flora, fauna and geological sites of national importance. While NHAs are legally protected by the Irish Wildlife Acts (1976 as amended), pNHAs are not. Many designated sites overlap, e.g. a site can be designated as both a SAC and NHA.

2.2 HABITAT AND INVASIVE PLANT SURVEYS

A Phase 1 habitat and flora assessment was carried out by Tom O'Donnell and Colm Breslin on 2nd June 2023 and 15th November 2023 in accordance with the Heritage Council's guidelines (Smith et al., 2011). Habitat data was validated on 17th January 2025 to confirm the description of habitats remained as previously described. This involved a walkover of the proposed development site where the habitats present were classified to level three using the classification scheme presented in *A Guide to Habitats of Ireland* (Fossitt, 2000). The extent of habitats was recorded on a field map along with notes of species present and their relative abundance described using the DAFOR[3] scale. In addition, any other observations of interest (e.g. invasive plant species, etc.) were recorded using a Garmin eTrex10 GPS handheld unit.

[1] Council Directive 92/43/EEC on the conservation of natural habitats and wild flora and fauna, as amended by Council Directive 97/62/EC.
[2] Directive 2009/147/EC (Birds Directive) on the conservation of wild birds (the codified version of Council Directive 79/409/EEC as amended).
[3] The DAFOR scale has been used to estimate the frequency and cover of the different plant species as follows: Dominant (D) - >75% cover, Abundant (A) – 51-75% cover, Frequent (F) – 26-50% cover, Occasional (O) – 11-25% cover, Rare (R) – 1-10% cover., The term 'Locally' (L) is also used where the frequency and distribution of a species are patchy and 'Edge' (E) is also used where a species only occurs on the edge of a habitat type.

The conservation status of habitats and botanical species was also considered. The conservation status of habitats and botanical species within Ireland and Europe is indicated by inclusion in one or more of the following: Irish Red Data Book for Vascular Plants (Wyse Jackson et al., 2016); Flora (Protection) Order 2022 and the EU Habitats Directive (92/43/EEC).

2.3 NON-VOLANT MAMMAL SURVEYS

Survey for non-volant mammals was undertaken by Tom O'Donnell and Colm Breslin of O'Donnell Environmental on 15th November 2023 and 17th January 2025. Survey involved a walkover of the site to identify any mammal species present or signs of mammal activity such as droppings, tracks, burrows etc. Observations were recorded using field notes and/or handheld GPS units. Techniques used to identify mammal activity followed recognised guidelines (e.g., Bang & Dahlstrom 2004, JNCC 2004 and Muir et al., 2013).

The conservation status of mammal species was considered. The conservation status of mammals within Ireland and Europe is indicated by inclusion in one or more of the following: Irish Wildlife Acts (1976 - 2010); Red List of Terrestrial Mammals (Marnell et al. 2009); EU Habitats Directive (92/43/EEC).

2.4 VISUAL BAT ROOST SURVEYS

Daytime visual assessments of structures and trees were carried out by Tom O'Donnell BSc (Hons) MSc CEnv MCIEEM, Colm Breslin BSc (Hons) and Claire McCarthy BSc (Hons) MSc on 30th May 2023, 24th July 2023, 22nd September 2023, 15th November 2023, and 17th January 2025 to identify any bat roosting potential which may be associated with the study area. Signs of bat use include bat droppings, feeding remains, potential bat access points identified by characteristic staining and scratches, noise made by bats etc. Photographs of the study area are shown in **Appendix A**.

2.4.1 Structures

A detailed preliminary roost assessment (PRA) of all interior and exterior spaces of relevant structures was carried out following guidance set out in Collins (2023) and classified according to the scheme outlined in **Table 2.1**. The structures surveyed included Rosehill House, Eastville House, structures associated with the former mills, and a disused residence at the northeast of the proposed site. Locations of these structures are outlined in **Figure 1.1**.

Table 2.1. Scheme for describing the potential suitability of structures for bats.

Suitability	Description
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).
Negligible	No obvious habitat features likely to be used by roosting bats, but a degree of uncertainty remains as seemingly unsuitable features may be used on occasion.
Low	A feature with one or more potential roost sites that could be used by individual bats opportunistically. Potential roost sites which do not provide appropriate conditions and / or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).
Moderate	A structure with one or more potential roost sites that could be used by bats due to characteristics and surrounding habitat but unlikely to support a roost of high conservation status.
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

After 'Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edition)', Collins (2023).

2.4.2 Trees

In relation to trees, Collins (2023) has moved away from the subjective approach used in Collins (2016) for categorising individual PRFs in trees. Collins (2023) acknowledges the subjectivity of the previous approach, and the many constraints associated with surveying trees for bats. The preliminary ecological appraisal (now termed the Daytime Bat Walkover (DBW)) of trees present on site follows the categorisations scheme outlined in **Table 2.2.**

Table 2.2. Scheme for describing the potential suitability of PRFs in trees on a proposed development site for bats.

Suitability	Description
None	Either no PRFs in the tree or highly unlikely to be any.
FAR	Further Assessment Required to establish if PRFs are present in the tree.
PRF	A tree with at least on PRF.

After 'Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edition)', Collins (2023).

A ground-level tree assessment (GLTA) was carried out on trees with confirmed PRFs within the site boundary following Collins (2023) and classified according to a separate scheme outlined in **Table 2.3**. The survey utilised the information and identification scheme (Tag No. 2619 – 2667) provided in the accompanying Arboricultural Impact Assessment Report (Holly Arboriculture, 2025a). Trees contained within and bordering the study area were surveyed from ground level using binoculars, torches, and an endoscope where suitable to identify possible roosting locations. The survey was non-destructive, and relevant Potential Roost Features (PRFs) were visually inspected to identify any evidence of bat roosting. Any relevant features not accessible from ground-level were surveyed at height using a ladder and endoscope (see **Appendix A6**).

Table 2.3. Scheme for describing the potential suitability of PRFs in trees for bats.

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

After 'Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edition)', Collins (2023).

2.5 BAT ACTIVITY SURVEYS

Emergence and passive bat activity surveys were carried out within the proposed development boundary. Surveys followed Collins (2023) and aimed to characterise bat activity in the area, significance of interaction with the site, and to seek to identify any bat roosting within structures and trees.

2.5.1 Emergence Surveys

Three active bat surveys were carried out during the bat active season. Two emergence (dusk) surveys were carried out on the 30th May 2023 and 29th June 2023, and one re-entry (dawn) survey was carried out on 22nd September 2023. The surveys were carried out by four surveyors, Tom O'Donnell, Colm Breslin, Claire McCarthy and Keiran Sugrue (BSc Hons). Incidental notes on bat activity, where observed, were made during bird surveys at dusk also.

Surveyors were positioned to maximise views of the structures, in combination with night vision aids (NVAs) following best practice guidelines (Collins, 2023). Particular attention was applied to any

identified access/egress points noted during previous daytime visual roost assessments. Three Guide IR Pro 19 thermal imaging cameras were positioned to optimise views of structures, following Collins (2023). Echolocation recordings were made on handheld Echo Touch Meter Pro 2 and Anabat Scout full spectrum recorders. Additionally, WA Song Meter Mini full-spectrum detectors were placed within the viewsheds of night vision aids to correlate any potential emergence with echolocation data. Surveys were carried out during suitable weather conditions. Surveys are detailed in **Table 2.4**, below. Images showing the field of views from camera placements are shown in **Plate 2.1** to **Plate 2.6**.

Table 2.4 – Bat activity survey details.

Date	Survey	From - To Times	Sunrise / Sunset Time	Weather
30/05/2023	Emergence	21:25 – 23:15	21:40	16°C; F2-4; 7 Oktas; Light rain at sunset.
29/06/2023	Emergence	21:45 – 23:33	21:55	16°C; F1; 1 Oktas; No rain.
22/09/2023	Re-entry	05:30 – 07:40	07:18	8°C; F1; 8 Oktas; No rain.

2.5.2 Passive Bat Monitoring

Passive bat monitoring was carried out between 30th May and 19th June 2023 for a total of 20 survey nights using a WA Song Meter Mini full-spectrum detector. The detector was placed within suitable habitat at the southwestern portion of the site to representatively sample all bat species present (see **Figure 1.1**). Passive monitoring surveys were carried out passively to quantify local bat activity levels, species richness and the significance of interaction with the proposed development site.

Bioacoustics analysis of bat sonograms was carried out according to the parameters set out in Russ (2012; 2021) and Middleton et al. (2014). Kaleidoscope Pro software was used to aid analysis, and all calls were manually verified.

2.6 BIRD SURVEYS

Three dawn / dusk surveys during the bird breeding season were carried out by Noel Linehan on 2nd June, 29th June and 24th July 2023. The purpose of the surveys was to identify the presence of nesting birds within the development boundary, the likely importance of the existing structures and trees for breeding birds, and the significance of interaction of bird species with the site. Surveys were carried out during suitable weather conditions. Surveys are detailed in **Table 2.5** below.

Table 2.5 – Breeding bird survey details.

Date	Survey	From - To Times	Sunrise / Sunset Time	Weather
02/06/2023	Dawn	05:40 – 11:40	05:19	F0-3; 0-7 Oktas; No rain; Excellent visibility.
29/06/2023	Dusk	16:16 – 22:30	21:57	F2-4; 7 Oktas; No rain; Excellent visibility.
24/07/2023	Dusk	20:00 – 22:50	21:34	F3; 3 Oktas; No rain; Excellent visibility.

In addition to breeding birds, bespoke winter bird surveys were carried out monthly by Colm Breslin from December 2024 to February 2025 whereby brief observations were made from suitable vantages in the hinterland surrounding the proposed site. The aim of these bespoke surveys was solely to identify if the proposed development and hinterland surrounding the proposed site was being used by significant

numbers of SCI species, or if significant flightlines occurred through the proposed development. The surveys were carried out in suitable weather conditions and in a range of tidal conditions.

2.7 EVALUATION & IMPACT ASSESSMENT

Evaluation of ecological features follows the NRA (now TII) publication 'Guidelines for Assessment of Ecological Impacts of National Roads Schemes' (2009). Impact assessment follows 'Guidelines on The Information to be Contained in Environmental Impact Assessment Reports' published by the EPA (2022). Reporting generally follows Chartered Institute of Ecology and Environmental Management (2024) 'Guidelines for Ecological Impact Assessment in the UK and Ireland - Terrestrial, Freshwater, Coastal and Marine'.

2.8 SURVEY LIMITATIONS

One residence at the northeast site boundary was not accessible for internal inspection, as the residence was occupied at the time of the survey. No evidence of significant roosting was observed from this structure from available vantages during emergence surveys and therefore the lack of internal access to this structure is not considered a significant limitation in this instance. Areas of the buildings contained within the site such as the upper floors of Rosehill House, and the upper areas of the disused Mill Buildings were not accessible due to the dilapidated state of these buildings, and due to fire damage. However, all buildings were visible externally to surveyors and so lack of internal inspection is not considered a significant limitation in this instance.

No bird survey was completed during the early part of the bird breeding season and as above, not all structures were accessible to Surveyors. Given the high level of coverage in the latter part of the breeding bird season an absence of data from the earlier part of the season is not considered a significant limitation in this instance.

2.9 LIFESPAN OF ECOLOGICAL DATA

Ecological survey data becomes invalid over time, as baselines shift and changes occur in the natural environment. It is important that planning decisions are based on data that is relevant and valid. Should delays in proposed works occur, survey data may become invalid in the interim and repeat surveys may need to be carried out. The Chartered Institute of Ecology and Environmental Management (CIEEM) provides guidance on the lifespan of ecological survey data[4].

CIEEM guidelines recommend that ecological data in relation to mobile species such bats should be considered relevant for a maximum of 12 to 18 months. The validity period of a botanical surveys is likely to be up to three years following CIEEM guidance.

[4] https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf

Plate 2.1 Example image from thermal camera covering the front/eastern aspect of Rosehill House.

Plate 2.2 Example image from thermal camera covering the northern aspect of Rosehill House with Soprano pipistrelle emerging (green).

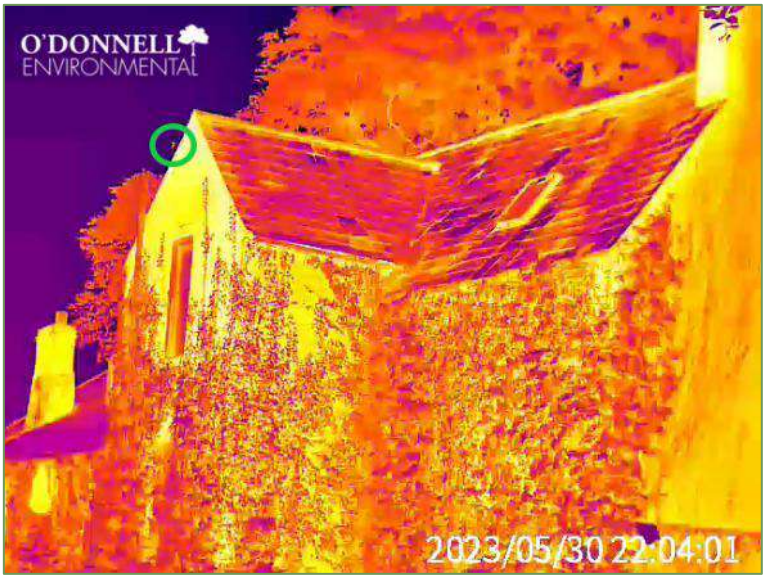


Plate 2.3 Example image from thermal camera covering the rear/western aspect of Rosehill House with Soprano pipistrelle emerging (green).

Plate 2.4 Example image from thermal camera covering the western aspect of Eastville House.

Plate 2.5 Example image from thermal camera covering the western aspect of the former mill buildings complex.

Plate 2.6 Example image from thermal camera covering the eastern aspect of the former mill buildings complex.

3 Results

The proposed development occurs within a brownfield, peri-urban landscape that experiences relatively low levels of light pollution. The proposed development is adjoined by residential and agricultural land uses. The site is exposed in nature and is dominated by artificial surfaces and built structures with portions of scrub and woodland along the southern and western borders.

3.1 SITES OF INTERNATIONAL AND NATIONAL IMPORTANCE

Conservation sites of international and national importance are described separately below.

3.1.1 Sites of International Importance

European sites, Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) have been designated under the EU Habitats Directive (92/43/EEC) and the EU Birds Directive (2009/147/EC) respectively. SACs and SPAs form part of a network of sites designated across Europe in order to protect biodiversity within the community, known as Natura 2000 sites and are legally protected by Irish law.

The proposed development is not located within any Natura 2000 site. Four sites are located within 15km of the proposed site, two SACs and two SPAs (see **Figure 3.1a**; **Table 3.1**). The Great Island Channel SAC (1058) and Cork Harbour SPA (4030) are the most proximal Natura 2000 sites, with both located approximately 200m northwest from the proposed development due to shared boundaries. There exists potential for impacts on both of these sites through fluvial connectivity from nearby watercourses. Ballycotton Bay SPA (4022) and Ballymacoda (Clonpriest and Pilmore) SAC (0077) are the remaining Natura 2000 sites within 15km of the proposed development, located 10.6km southeast and 14.7km east respectively.

Internationally designated sites are discussed separately in the AA Screening and Natura Impact Statement which accompanies the current planning application (O'Donnell Environmental, 2025).

3.1.2 Sites of National Importance

Nature Reserves and Refuges for Fauna are protected under the Irish Wildlife Acts (1976 - 2010). Designated conservation sites include national sites, Natural Heritage Areas (NHAs) and proposed Natural Heritage Areas (pNHAs). NHAs are designated to protect habitats, flora, fauna and geological sites of national importance. While NHAs are legally protected by the Irish Wildlife Acts (1976 - 2010), pNHAs are not. Many designated sites overlap, e.g. a site can be designated as both a SAC and NHA.

The proposed development is not located within any NHAs or pNHAs. Four pNHAs are located within 5km of the proposed development (see **Figure 3.1b**; **Table 3.1**).

The Great Island Channel pNHA (1058) is located 200m northwest of the proposed development and largely overlaps with the Great Island Channel SAC and Cork Harbour SPA. This pNHA shares a number of conservation interests with the mentioned Natura 2000 sites, including intertidal habitats and wetland birds. A hydrological pathway exists between this site and the proposed development through the West Ballynacora stream.

Carrigshane Hill pNHA (1042) is located approximately 1.03km northeast of the proposed development. This site was designated for its rich calcicole flora which is grazed by cattle but is under threat from

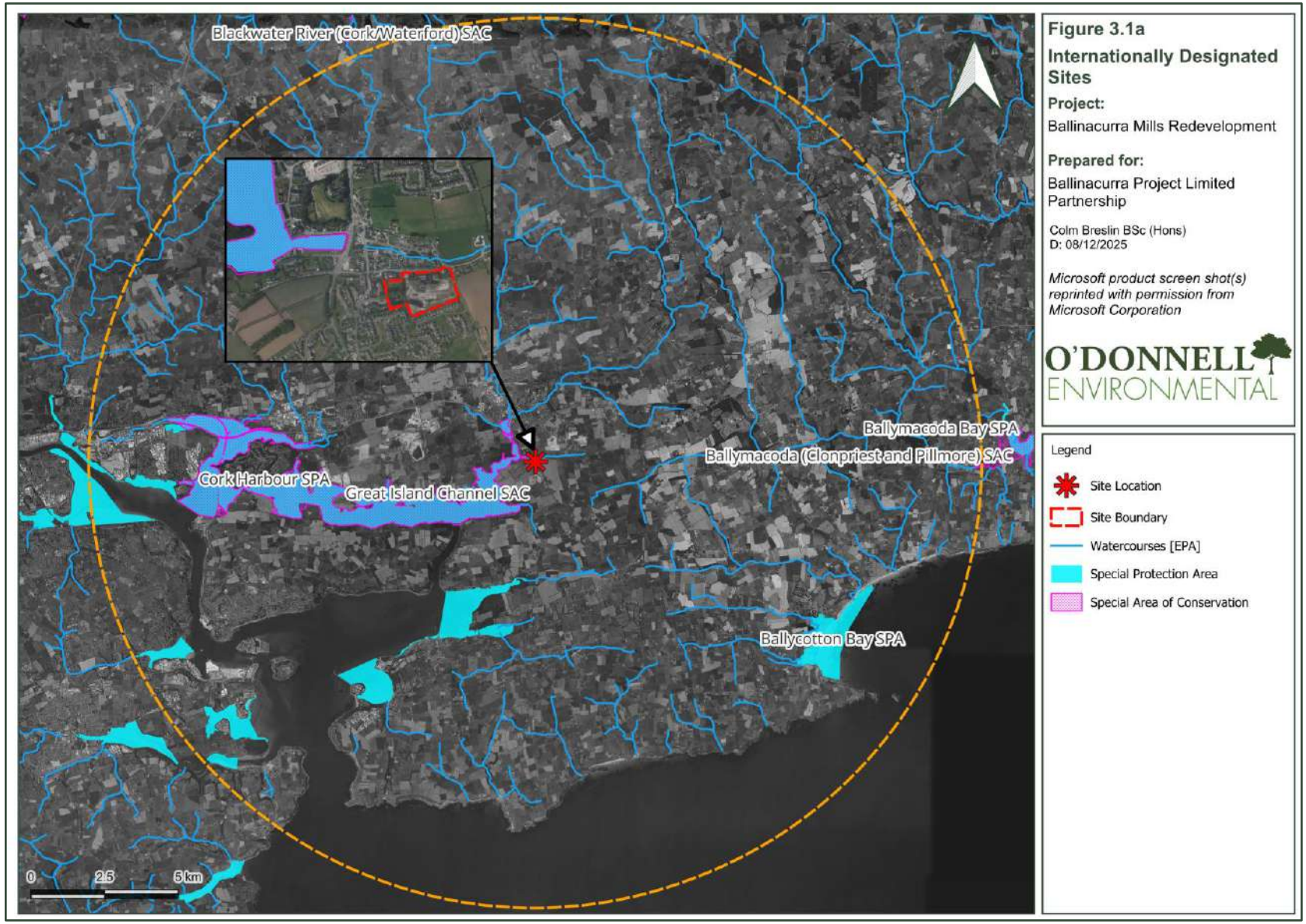
expansion of quarrying operations. No viable source-receptor pathway exists between the proposed development and this pNHA.

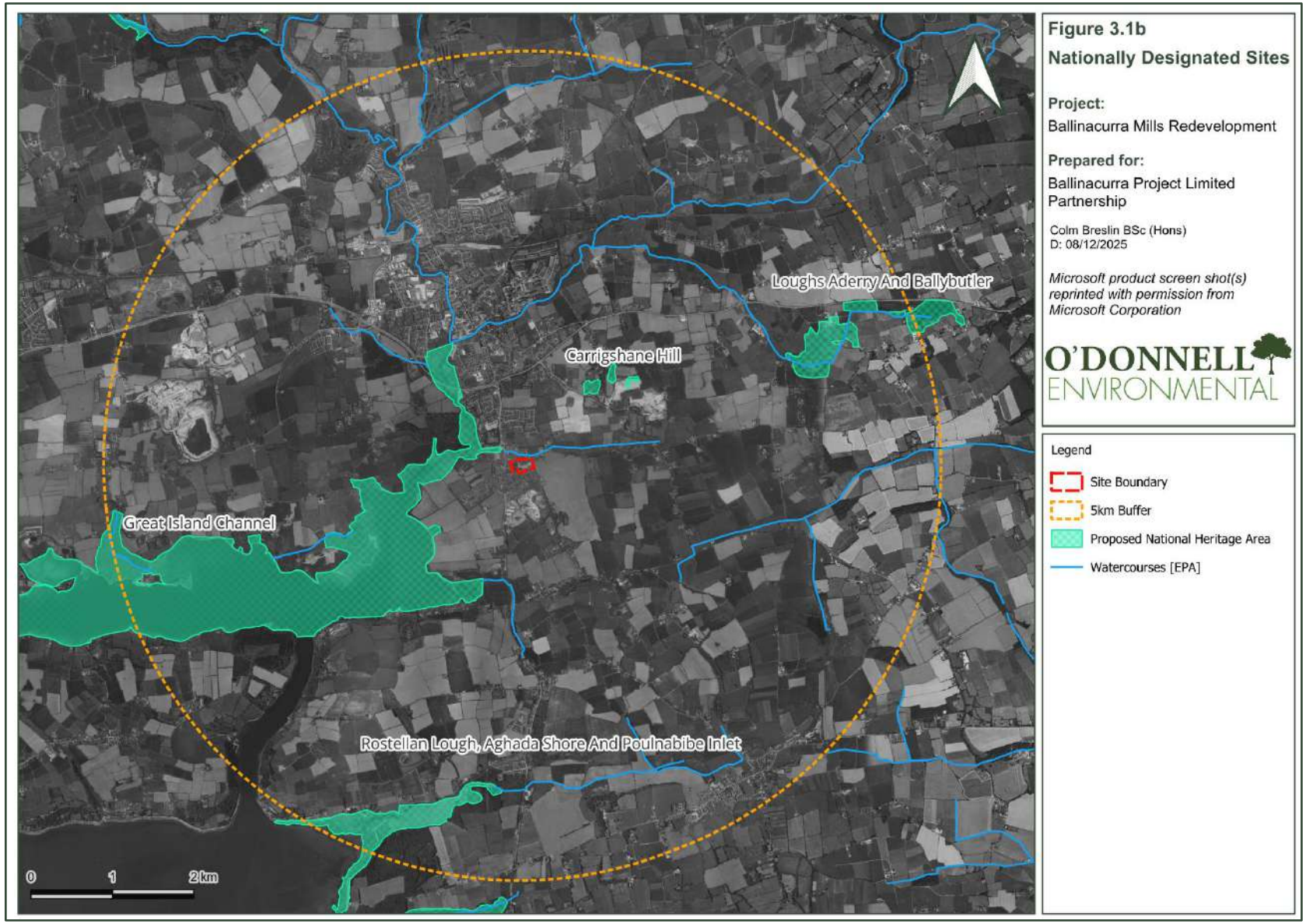
The Loughs Aderry and Ballybutler pNHA (0446) are located 1.03km and 3.41km northeast of the proposed development respectively. This site was designated for lake habitats which has been invaded by floating fen habitat in recent years. A number of rare plant species have been identified along the margins, including the FPO species orange foxtail (*Alopecurus aequalis*) and red-listed musk thistle (*Carduus nutans*). Additionally, this site supports nationally important numbers of Gadwall and other wildfowl and is designated appropriately as a wildfowl sanctuary. No viable source-receptor pathway exists between the proposed development and this pNHA.

Rostellan Lough, Aghada Shore and Poulnabibe Inlet pNHA (1076) is located 3.8km southwest of the proposed development and largely overlaps with a portion of the Cork Harbour SPA. This site has been designated due to the presence of intertidal habitats and internationally important numbers of wintering waders. A large portion of the site is no longer tidally influenced, thus supporting larger numbers of wildfowl. This site forms an integral part of the overall Cork Harbour SPA.

Table 3.1 - International and national designated conservation sites within 15km and 5km respectively of the proposed development.

Site Name	Site Code	Distance (km)
International		
Great Island Channel SAC	1058	0.20
Cork Harbour SPA	4030	0.20
Ballycotton Bay SPA	4022	10.60
Ballymacoda (Clonpriest and Pilmore) SAC	0077	14.70
National		
Great Island Channel pNHA	1058	0.20
Carrigshane Hill pNHA	1042	1.03
Loughs Aderry and Ballybutler pNHA	0446	3.41
Rostellan Lough, Aghada Shore and Poulnabibe Inlet pNHA	1076	3.80


Blackwater River (Cork/Waterford) SAC
Ballymacoda Bay SPA
Ballymacoda (Clonpriest and Pillmore) SAC
Cork Harbour SPA
Great Island Channel SAC
Ballycotton Bay SPA
0
2.5
5 km
Figure 3.1a
Internationally Designated Sites
Project:
Ballinacurra Mills Redevelopment
Prepared for:
Ballinacurra Project Limited Partnership
Colm Breslin BSc (Hons)
D: 08/12/2025
Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation
O'DONNELL ENVIRONMENTAL
Legend
Site Location
Site Boundary
Watercourses [EPA]
Special Protection Area
Special Area of Conservation


Loughs Aderry And Ballybutler
Carrigshane Hill
Great Island Channel
Rostellan Lough, Aghada Shore And Poulnabibe Inlet
0
1
2km
Figure 3.1b
Nationally Designated Sites
Project:
Ballinacurra Mills Redevelopment
Prepared for:
Ballinacurra Project Limited Partnership
Colm Breslin BSc (Hons)
D: 08/12/2025
Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation
O'DONNELL ENVIRONMENTAL
Legend
Site Boundary
5km Buffer
Proposed National Heritage Area
Watercourses [EPA]

3.1.3 Hydrological Context

The proposed development does not contain any watercourses. No surface water pathways were visible at the time of surveys, and it appears drainage currently discharges to ground. A height differential between the south-west and north-east portions of the development footprint was visible. Due to the high degree of impermeable surfaces onsite, there is likely a degree of overland flow also.

The proposed site is located in the Lee, Cork Harbour and Youghal Bay catchment (ID 19), sub-catchment Farrannamanagh_SC_010. The EPA undertakes survey of the water quality of river systems. The site does not contain any watercourses but is bordered to the north by the West Ballynacora Stream (IE_SW_19K630910) at approximately 10m distance from the site boundary. The EPA categorises the water quality of this stream as having a 'Good' status (River Waterbody WFD Status 2019-2024) and is risk-assessed as 'Review' (River Waterbodies Risk 2021).

The West Ballynacora Stream flows westwards and discharges directly into the Owenacurra Estuary (IE_SW_060_0400) which comprises a portion of the wider Cork Harbour SPA and Great Island Channel SAC. Owenacurra Estuary is categorised as having a 'Moderate' status (Transitional Waterbody WFD Status 2019-2024) and is risk-assessed as 'At Risk' (Transitional Waterbodies Risk 2021). The West Ballynacora Stream provides a viable source-receptor pathway to the Owenacurra Estuary and therefore the Great Island Channel SAC and Cork Harbour SPA.

The EPA categorise the groundwater quality of the area (EPA Code: IE_SW_G_058) as "Good" (Ground Waterbody WFD Status 2019-2024) and risk- assessed as "Review" (Ground Waterbodies Risk 2021). The national groundwater vulnerability database from Geological Survey Ireland (GSI) details the underlying characteristics of the proposed development and the susceptibility of the receiving environment to groundwater contamination[5]. The proposed development is located within an area of high to extreme (due to the presence of bedrock at the surface) groundwater vulnerability, and high permeability of a regionally important karstified bedrock aquifer.

A 'Flood Risk Assessment' (MHL, 2025b) was carried out and determined that there is no risk associated with coastal or fluvial flooding, and the proposed development location is appropriate from a flood risk perspective in that it meets the requirements of the Flood Risk Management Planning guidelines (2009).

3.2 HABITATS AND INVASIVE SPECIES

Botanical assessment was conducted through desktop review and field surveys. These are described separately below.

3.2.1 Desktop Review

Habitats and botany were assessed though desktop review[6,7,8] and field surveys. No Annex I habitats listed under the EU Habitats Directive or those associated with surrounding SACs were recorded. The

[5] https://gsi.geodata.gov.ie/portal/apps/webappviewer/index.html?id=d333a8a9b6ab44378411fc0d973db4ef Accessed 23/10/2025
[6] https://maps.biodiversityireland.ie/Map Accessed 23/10/2025
[7] https://heritagedata.maps.arcgis.com/apps/webappviewer/index.html?id=a41ef4e10227499d8de17a8abe42bd1e Accessed 23/10/2025
[8] https://dahg.maps.arcgis.com/apps/webappviewer/index.html?id=71f8df33693f48edbb70369d7fb26b7e Accessed 23/10/2025

dominant habitats recorded onsite consist of built and disturbed ground of low ecological value, with areas of woodland of higher botanical value.

No NBDC and BSBI records of botanical species protected under the Flora (Protection) Order 2022, listed in Annex II or IV of the EU Habitats Directive (9/3/EEC), or Red listed in Ireland (Wyse Jackson et al., 2016) were present within the 2km grid square which contains the proposed development (W87V). The proposed development is located adjacent to the historic (>1900AD) NPWS hectad record for the FPO species Killarney fern, orange foxtail and pennyroyal (W97). Killarney Fern has since been re-recorded within this hectad by the BSBI database in recent years. The most proximal modern NPWS FPO species record is orange foxtail approximately 4.2km northeast within Loughs Aderry and Ballybutler pNHA. These species, or other botanical species protected under the Flora (Protection) Order 2022, listed in Annex II or IV of the EU Habitats Directive (9/3/EEC), or Red listed in Ireland (Wyse Jackson et al., 2016) were not recorded during field surveys.

Three-cornered Garlic (*Allium triquetrum*) is the only invasive plant species historically recorded by the NBDC within the 2km grid square that contains the proposed development (W87V). This species is listed on the Third Schedule of the EC (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011). The most proximal records for other Third Schedule invasive plant species are limited to Japanese Knotweed and Indian Balsam located approximately 1.6km northwest of the proposed development within Midleton town.

3.2.2 Field Survey

No Annex I habitats listed under the EU Habitats Directive are present within the study site and the dominant habitats present are of low to high ecological value. All species recorded during the botanical survey are considered common for similar habitats, with the exception of bee orchid (*Ophrys apifera*) (see **Figure 3.2**; **Appendix A7**). This species is considered uncommon with a relatively restricted distribution.

The habitats within the proposed development site consist mostly of 'bare and recolonising ground' (ED3), with multiple derelict structures throughout. Portions of 'scrub' (WS1) have formed along the fringes of previously developed areas that experience less disturbance. 'Mixed broadleaf woodland' (WD1) consisting of multiple over-mature tree species of high habitat value, in a mosaic with scrub, is present at the southwest corner of the proposed development site.

The following habitats were recorded within the proposed development site (see **Figure 3.2**):

- Buildings and artificial surfaces (BL3)
- Recolonising bare ground (ED3)
- Dry meadows and grassy verges (GS2)
- Mixed broadleaf woodland (WD1)
- Scrub (WS1)
- Immature woodland (WS2)
- Treelines (WL2).

An overview of the site is presented in **Plate 3.2.1** to **Plate 3.2.8** below. The habitats present within the boundary of the proposed site are described below.

3.2.2.1 Buildings and artificial surfaces (BL3)

This artificial habitat is present throughout the site in the form of derelict structures and tarmac/concrete surfaces. Plant cover is largely sparse and entirely absent in places. The structural components of this habitat present occasional ivy (*Hedera helix*) along the walls. Ruderal plant species largely take the form of occasional invasive butterfly bush (*Buddleja davidii*), ivy-leaved toadflax (*Cymbalaria muralis*) and red valerian (*Centranthus ruber*). Approximately 0.934ha of this habitat is present onsite.

The ecological valuation of the buildings and artificial surfaces habitat is considered to be of **Local Importance (Lower Value)** (following NRA, 2009).

Plate 3.2.1 View overlooking the mills buildings complex.

3.2.2.2 Recolonising bare ground (ED3)

Recolonising bare ground forms an extensive and dominant proportion the habitats surveyed within the proposed development site. This habitat has formed atop previously laid down surfaces which have since ceased regular maintenance. This habitat presents the most species rich habitat within the proposed development due to the abundance of ruderal species and fast-growing colonisers. The rare bee orchid (*Ophrys apifera*) was identified within this habitat along the eastern portion of the site (see **Figure 3.2**; **Appendix A7**). Approximately 0.977ha of this habitat is present onsite.

The ground layer is dominated by moss species which provides suitable substrate for other species to colonise. More undisturbed areas were dominated by bramble (*Rubus fructicosus*). Ribwort plantain (*Plantago lanceolata*), red valerian, common mouse-ear (*Cerastium fontanum*), annual meadowgrass (*Poa annua*), hawks-beard (*Crepis* sp.), curled dock (*Rumex crispus*), smooth sowthistle (*Sonchus oleraceus*) and oxeye daisy (*Leucanthemum vulgare*) were abundant throughout. More established portions of this habitat see perennial species beginning to dominate, including red clover (*Trifolium pratense*), Yorkshire fog (*Holcus lanatus*), lesser trefoil (*Trifolium dubium*), and bilbao's fleabane (*Erigeron floribunda*). slender St.John's-wort (*Hypericum pulchrum*) and cow parsley (*Anthriscus sylvestris*) were identified occasionally throughout. Petty spurge (*Euphorbia peplus*) and field forget-me-not (*Myosotis arvensis*) were found rarely throughout. White stonecrop (*Sedum album*) was locally abundant along the more exposed and shaded portions of this habitat. Portions of butterfly bush were noted to be colonising throughout this habitat.

The ecological valuation of the recolonising bare ground habitat is considered to be of **Local Importance (Lower Value)** (following NRA, 2009).

Plate 3.2.2 Example of Recolonising bare ground habitat with Scrub habitat visible in the background.

Plate 3.2.3 Example of Recolonising bare ground habitat.

3.2.2.3 Dry meadows and grassy verges (GS2)

This habitat occurs in the northwestern portion of the site adjacent to Rosehill House. The floral community is representative of a lack of intensive management such as grazing, mowing or fertilisation. False oat-grass (*Arrhenatherum elatius*) and Yorkshire fog dominate the tussocky sward species throughout this habitat. Cleavers (*Galium aparine*), silverweed (*Potentilla anserina*), timothy (*Phleum pratense*), common stork's-bill (*Erodium cicutarium*) and meadow foxtail (*Alopecurus pratensis*) were common throughout the site. Nettle (*Urtica dioica*) was locally abundant around the shaded borders. Cow Parsley, hawk's-beard and *Rumex* spp. were present occasionally in spatially similar distributions. Vetch (*Vicia* sp.), common birds-foot trefoil (*Lotus corniculatus*), common ragwort (*Jacobaea vulgaris*)

and creeping buttercup (*Ranunculus repens*) were noted rarely. Portions of the habitat have experienced some recent disturbance in the form of excavator tracks but have been included within the same habitat classification due to the limited extent of disturbance. Approximately 0.151ha of this habitat is present onsite.

The ecological valuation of the grassland habitat is considered to be of **Local Importance (Lower Value)** (following NRA, 2009).

Plate 3.2.4 Example of Dry meadows and grassy verges habitat.

3.2.2.4 Mixed broadleaf woodland (WD1)

This habitat is present surrounding Rosehill House in the form of multiple over-mature trees, in addition to a now wooded-over laneway. Approximately 0.47ha of this habitat, in a mosaic with scrub, is present onsite. Where the tree canopy becomes more open, dense scrub dominated by bramble becomes locally abundant (described below). Tree species are dominated by sycamore (*Acer pseudoplatanus*) of varying ages, with over-mature beech (*Fagus sylvatica*) and ash (*Fraxinus excelsior*) trees providing suitable vegetation cover and locally high value habitat. The ground vegetation is dominated by Ivy ground cover and locally abundant patches of young-growth Willow (*Salix* spp.), Holly (*Ilex aquifolium*) and Elder (*Sambucus nigra*) emerging from portions of bramble-dominated scrub. Portions of butterfly bush were noted to be colonising throughout this habitat.

The ecological valuation of the woodland habitat is considered to be of **Local Importance (Higher Value)** (following NRA, 2009).

Plate 3.2.5 Example of Mixed broadleaf woodland surrounding Rosehill House.

3.2.2.5 Scrub (WS1)

Scrub habitat is present throughout the site, particularly along the southern boundary and in a mosaic adjacent to other habitats. This habitat is relatively simple in structure and species composition. Approximately 0.757ha of this habitat, not including the mosaic with broadleaf woodland, is present onsite.

This habitat has formed along the margins of other habitats, and within the aforementioned woodland, and experiences relatively little disturbance. Bramble comprises the dominant structure of this habitat, with young-growth willow emerging throughout in a scattered distribution and often showcasing stunted growth as would be characteristic of this habitat. The field layer was impoverished and generally lacks any identifiable species due to the shade created from other species. Gorse (*Ulex europaeus*) was locally abundant in portions along the southern boundary. Approximately

This habitat occurs adjacent to Eastville House also with the addition of exotic garden species. Bramble also dominated the habitat found here alongside ground-elder (*Aegopodium podagraria*) found abundantly, with multiple semi-mature ornamental tree species found throughout. Additionally, a variety of non-native plant species were identified within the field layer, including *Rhododendron* sp., an ornamental variety of lords-and-ladies (*Arum* sp.), and yellow archangel (*Lamiastrum galeobdolon ssp. argentatum*).

The ecological valuation of the scrub habitat is considered to be of **Local Importance (Lower Value)** (following NRA, 2009).

Plate 3.2.6 Example of Scrub occurring in a mosaic within Mixed broadleaf woodland surrounding Rosehill House.

3.2.2.6 Immature woodland (WS2)

This habitat has formed as a result of recent felling of a stand dominated by Poplar (*Populus* sp.) along the southern boundary of the proposed site. The field layer is comprised of rank grassland and bramble scrub which will quickly be outcompeted once the trees begin to re-establish. Approximately 0.205ha of this habitat is present onsite.

The ecological valuation of the immature woodland habitat is considered to be of **Local Importance (Lower Value)** (following NRA, 2009).

Plate 3.2.7 Recently felled stand of poplar, which are beginning to resprout at the base.

3.2.2.7 Treelines (WL2)

This habitat is limited in extent within the proposed development and consists of a variety of tree species of varying ages. The treeline habitat along the southern portion of the development is a non-native treeline consisting entirely of Cypress (*Cupressus* sp.) of similar mature age. Approximately 0.098ha of this habitat is present onsite.

The ecological valuation of the treeline habitat is considered to be of **Local Importance (Lower Value)** (following NRA, 2009).

Plate 3.2.8 Example of treeline habitat consisting of non-native *Cypress* sp.

3.2.2.8 Invasive Species

No invasive plant species listed on Third Schedule of the EC (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011) were identified during the course of surveys. Butterfly bush was identified abundantly throughout the entirety of the site, particularly along disturbed areas and artificial surfaces. Sycamore was identified frequently throughout the site also. Both species have been risk-assessed within an Irish context as 'medium impact' (O'Flynn et al., 2014). Additionally, a single stand of snowberry, classified as a 'low impact' invasive species, was identified immediately south of Rosehill House.


Figure 3.2
Habitat Survey
Project:
Ballinacurra Mills Redevelopment
Prepared for:
Ballinacurra Project Limited Partnership
Colm Breslin BSc (Hons)
D: 29/10/2024
Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation
O'DONNELL ENVIRONMENTAL
Legend
Site Boundary
Kestrel Nest
Bee Orchid
Habitat Map
BL3
ED3
GS2
WD1/WS1
WS1
WS2
WL2
Former Residence
Eastville House
The Mill Buildings
Rosehill House
0
25
50 m

3.3 NON-VOLANT MAMMALS

Non-volant mammal assessment was conducted through desktop review and field surveys. These are described separately below.

3.3.1 Desktop Review

Within the 10km grid square in which the proposed development site is located (W87; NBDC) there are historic records for a total of 19 non-volant mammal species, of which Otter is the only Annex II species (see **Table 3.2**). European badger, European hedgehog, fox, greater white-toothed shrew and rabbit were recorded within the 2km grid square that contains the proposed development (W87V).

Table 3.2 - Mammal species previously recorded within the 10km grid square (W87) in which the site is located (NBDC).

Common name	Species name	Legal Protection*	Conservation Status**
American Mink	*Mustela vison*	-	AIS
Bank Vole	*Myodes glareolus*	-	AIS
Brown Rat	*Rattus norvegicus*	-	AIS
Eurasian badger	*Meles meles*	WA	LC
Eurasian Pygmy Shrew	*Sorex minutus*	WA	LC
Eurasian Red Squirrel	*Sciurus vulgaris*	WA	LC
European Otter	*Lutra lutra*	Annex II/IV, WA	LC
European Rabbit	*Oryctolagus cuniculus*	-	AIS
Fallow Deer	*Dama dama*	-	AIS
Feral Ferret	*Mustela fero*	-	AIS
Greater White-toothed Shrew	*Crocidura russula*	-	AIS
House Mouse	*Mus musculus*	-	AIS
Irish Hare	*Lepus timidus* subsp. *hibernicus*	Annex V, WA	LC
Irish Stoat	*Mustela erminea Hibernica*	WA	LC
Pine Marten	*Martes martes*	Annex V, WA	LC
Red Fox	*Vulpes vulpes*	-	LC
Sika Deer	*Cervus nippon*	-	AIS
European hedgehog	*Erinaceus europaeus*	WA	LC
Wood Mouse	*Apodemus sylvaticus*	-	LC

Source: https://maps.biodiversityireland.ie/Map. Accessed 21/10/2025

* Annex status (EU Habitats Directive), WA (Protected under Wildlife Acts 1976 and 2000).

** LC – Least Concern (Marnell et al., 2019); AIS - Alien Invasive Species.

3.3.2 Field Surveys

No evidence of underground dwellings attributed to any protected mammal species was identified onsite. The proposed development site is considered generally sub-optimal for the formation of underground dwellings considering the high degree of built surfaces underlying the site and degree of human disturbance. No evidence of Otter was observed onsite, with the proposed development considered generally unsuitable for this species.

Sparse mammal trails were evident in areas of grassland and scrub, primarily along the western and southern borders of the site. Mammal trails were not evident within the core of the site, as built surfaces are generally not conducive to the formation of trail features. No scat or similar mammal signs were identified here in addition.

hedgehog was identified commuting along the boundary of the site proximal to Rosehill House, which provides abundant vegetation cover and suitable nesting habitat for this species (see **Plate 3.3.1**). hedgehog has been noted to be declining in range in recent years and is now considered a species of conservation concern within Ireland (Haigh et al., 2011). The International Union for the Conservation of Nature (IUCN) has recently classified this species as 'Near Threatened' due to a 30% population decline over the past decade.

Plate 3.3.1 hedgehog identified in the scrub surrounding Rosehill House.

Considering the nature and scale of the proposed site and presence of the 'near threatened' hedgehog, the proposed site is considered of **Local importance (Higher Value)** for non-volant mammals (following NRA, 2009).

3.4 BATS

Assessment of bat species was conducted through desktop review, visual surveys of structures and trees, emergence surveys and passive monitoring. These are described separately below.

3.4.1 Desktop Review

National Biodiversity Data Centre holds previous records of bat presence from within the 10km square (W87) in which the proposed site is located. These records are for the following seven species:

- Common pipistrelle (*Pipistrellus pipistrellus*)
- Soprano pipistrelle (*Pipistrellus pygmaeus*)
- Leisler's bat (*Nyctalus leisleri*)
- Daubenton's bat (*Myotis daubentonii*)
- Natterer's bat (*Myotis nattereri*)
- Whiskered bat (*Myotis mystacinus*)

- Brown long-eared bat (*Plecotus auritus*).

The overall bat suitability index value (31.22) according to 'Model of Bat Landscapes for Ireland' (Lundy et al., 2011) suggests the landscape in which the proposed site is located is of moderate to high suitability for bats in general. Species specific scores are provided in **Table 3.3**. Lesser horseshoe bat is assigned a score of '0' as the proposed site is located outside of the known distribution range of the species, the most proximal known roost being Blarney Castle 28km west on the opposite side of Cork City (T. O'Donnell, pers. comm.).

Table 3.3 - Suitability of the study area for the bat species according to 'Model of Bat Landscapes for Ireland' (Lundy et al., 2011).

Common name	Scientific name	Suitability index
All bats		*31.22*
Soprano pipistrelle	*Pipistrellus pygmaeus*	46
Brown long-eared bat	*Plecotus auritus*	44
Common pipistrelle	*Pipistrellus pipistrellus*	39
Lesser horseshoe bat	*Rhinolophus hipposideros*	0
Leisler's bat	*Nyctalus leisleri*	44
Whiskered bat	*Myotis mystacinus*	35
Daubenton's bat	*Myotis daubentonii*	30
Nathusius pipistrelle	*Pipistrellus nauthusii*	6
Natterer's bat	*Myotis nattererii*	37

Source: https://maps.biodiversityireland.ie/Map. Accessed 21/10/2025

3.4.2 Visual Survey - Structures

Features on site were assessed for their suitability for roosting bats following Collins (2023) (see **Table 2.1** and **Figure 3.3**). A daytime visual inspection was carried out with the aim of identifying bat roosts by either the presence of bats or signs of past bat roosting. A detailed visual survey was carried out inspecting all safely accessible internal and external areas of the buildings. The survey was non-destructive. Additional photographs of the structures are provided in **Appendix A**. As noted in 'Survey Limitations' (**Section 2.8**), the occupied residence immediately west of the former residence was not accessible at the time of surveys.

3.4.2.1 Rosehill House

Rosehill House is a two-storey block-built structure with partially exposed basement and natural slate roof situated within the southwestern portion of the proposed development (see **Figure 3.3**; **Plate 3.4.1**). The structure is surrounded by mature trees and scrub which provides suitable cover for emerging roosting bats.

Plate 3.4.1 View overlooking the eastern/front aspect of Rosehill House.

Portions of the roof have been repaired with modern slate equivalent, and slates are missing occasionally which provides clear access/egress points for roosting bats. Some windows were found to be open, notably the skylight on the western aspect of the roof and uncovered second storey window to the north. The western aspect of the house is covered in dense ivy growth.

Access was available to the ground floor only due to the dilapidated state of the building internally. No evidence of roosting bats was identified during interior inspection although it was noted to possess a wide variety of PRFs stemming from the dilapidated interior. Single storey stonework outbuildings are associated with the structure and is currently in a state of advanced disrepair with missing slates and damage caused from vigorous growth of adjacent tree saplings. No evidence of bat roosting was identified within the outbuildings.

Rosehill House displays 'high' suitability for roosting bats following Collins (2023) and has been confirmed as a bat roost for small numbers of soprano pipistrelle (see **Plate 2.2** and **2.3**). Following Marnell (2022), the roosting occurring here is considered to be of low conservation significance.

3.4.2.2 Eastville House

Eastville House is a two-storey block-built structure located along the northern perimeter of the development site adjacent to the L3625 (Rose Lane) (see **Figure 3.3**; **Plate 3.4.2**). This derelict residence is in an advanced state of disrepair, with the southern wing roof missing a considerable area of roof tiles allowing light, water and wind ingress to the upper floors. Exterior inspection revealed obvious access/egress points for roosting bats through open windows on both floors, gaps surrounding the boarded-up windows and gutters, loose ridge tiles, alongside the missing slates. The house is bordered to the east by a grouping of semi-mature to mature trees which provide suitable cover for exiting roosting bats. Streetlighting exists on the adjacent roadway which reduces the roosting suitability on the northern aspect of the structure.

Plate 3.4.2 View overlooking the northern/front aspect of Eastville House from the adjacent roadway (L3625).

The interior of Eastville House is considerably degraded as a result of water ingress, with portions of the upper flooring rotten and not safely accessible. No discrete attic space exists, with the upper floors showing exposed roofing slate atop timber framing with no underlying bitumen felt. A single brown long-eared bat was identified day-roosting within the upper floor directly within the eaves of the timber framing on 30th May 2023 (see **Plate 3.4.3**). Interior inspections on subsequent dates did not reveal Brown long-eared bat day-roosting.

Eastville House displays 'high' suitability for roosting bats following Collins (2023) and has been confirmed as an inconsistently used bat roost for individual or small numbers of brown long-eared bat. Following Marnell (2022), the roosting occurring here is considered to be of low conservation significance.

Plate 3.4.3 Brown long-eared bat (red) present within upper floor of Eastville House during survey on 30th May 2023. (Photo by T. O'Donnell, NPWS License Ref. 211 / 2023).

3.4.2.3 Mill Buildings Complex

The mill buildings complex comprises an extensive series of interconnected structures composed of block built, stonework and metal structures (see **Plate 3.4.4**). The building complex has experienced extensive fire damage both historically and recently which has left large portions without a roof and thus drastically reduces its suitability for roosting bats (see **Appendix A1** for extent). The intact portions of the complex comprise the stonework storage barn at the west, adjacent to the L3625 (see **Appendix A3**) and the concrete tower located centrally (see **Plate 2.6**; **Appendix A4**).

Plate 3.4.4 View overlooking the western aspect of the mill buildings complex.

Due to the extent of the mill complex, a wide array of minor roosting opportunities are present for individual, crevice-dwelling bats in the form of gaps in the stonework and loose plasterwork, but by the nature of their construction, the buildings likely do not represent optimal roosting conditions.

A former service tunnel (see **Figure 3.3; Appendix A13**) was inspected visually for the presence of bats or any evidence of historic bat usage. Surveys were carried out in August 2023 and January 2025, within both the active and hibernation season. No evidence of roosting, current or historic, was noted although the tunnel appeared to be suitable for winter roosting given cool, stable temperatures alongside minimal wind and light ingress.

The mill buildings complex in its entirety presents 'low' suitability for roosting bats following Collins (2023), based on available evidence. A comprehensive assessment was carried out following best practice guidance, and no evidence of bat roosting was found. The possibility of occasional roosting by small numbers of bats cannot be entirely discounted given the scale of the building and access limitations.

3.4.2.4 Former Residence

The former residence located at the northwest boundary of the proposed development is a two-storey stonework structure with modern external render, attic section and modern slate roof (see **Plate 3.4.5**). This building is in structurally sound condition with no evidence of significant dilapidation. No access/egress points were identifiable upon external inspection, roof tiles were intact and flush, and all windows were secure. This structure is located adjacent to a roadway which experiences considerable light disturbance limiting bat roosting suitability on the northern aspect.

Heavy cobwebs were present throughout the interior spaces of the structure, particularly along the stairway between floors. Possible bat feeding remains (two butterfly wings) were identified, although if related to bats these may be result of a single instance of night roosting if for example a door was left open. Inspection of the attic space revealed a heavily cobwebbed space (indicating the likely lack of bat roosting in recent years) with a single window facing east allowing considerable light ingress (see **Appendix A14**). No evidence of any contemporary or regular bat roosting was found at the former residence.

The adjacent occupied residence was not accessible at the time of surveys but appeared generally well-intact.

Based on visual survey, the former and occupied residences in its entirety presents 'high' suitability for roosting bats following Collins (2023). However, no reliable evidence of bat roosting, current or historic, was identified and based on available information is not likely to be used by roosting bats.

Plate 3.4.5 View overlooking the northern aspect of the former residence.

3.4.3 Visual Survey - Trees

Trees on site were assessed for their suitability for roosting bats following Collins (2023) (see **Table 2.2** & **2.3**; **Figure 3.3**). A preliminary roost assessment of suitability of trees for roosting bats was undertaken from ground level, following the methodology outlined in Collins (2023). The survey took place during the optimal time of year in the winter season, as leaf fall makes PRFs more visible from ground level.

The survey follows the descriptions and an identification scheme provided in the Arboricultural Impact Assessment Report (Holly Arboriculture, 2025a). Some trees had features which are considered to have potential to support roosting bats. The trees are categorised according to their potential following Collins (2023) (see **Table 2.3**). This categorisation and the results of the assessment are detailed in **Table 3.4** below and the locations of relevant trees is shown in **Figure 3.3**. Due to the abundance of trees onsite, only trees displaying 'PRF-I' or 'PRF-M' are shown.

In total, 49 individually tagged trees and 4 tree groups were surveyed within the development boundary. No roosting bats were encountered during the current tree survey, and no unoccupied roosts which contained signs of bats were encountered. A total of four PRF-M trees were identified within the development site (Tag no. 2626; 2642; 2652; 2655) (see **Plate 3.4.6 - 3.4.8** for examples). Fourteen trees displayed PRF-I suitability for roosting bats, with the remaining trees displaying no value for roosting bats.

It is likely that some of these features will be used at least occasionally by day-roosting bats. Most of Irelands bat species are known to exploit a wide variety of roosting opportunities with some being used infrequently. Over time, the value of many of these roosting features to bats may increase in value.

Plate 3.4.6 Example feature of hazard beam and associated cavities either side, displaying a PRF-M feature for roosting bats (Tag no. 2655).

Plate 3.4.7 Example of major structural split between two co-dominant stems which provides a vertical fissure of PRF-M suitability for roosting bats (Tag no. 2652).

Plate 3.4.8 Inspection at height using ladder and torch of the vertical fissure of PRF-M suitability for roosting bats (Tag no. 2652).

Table 3.4 - Assessment of roosting potential of trees within and proximal to site boundary.

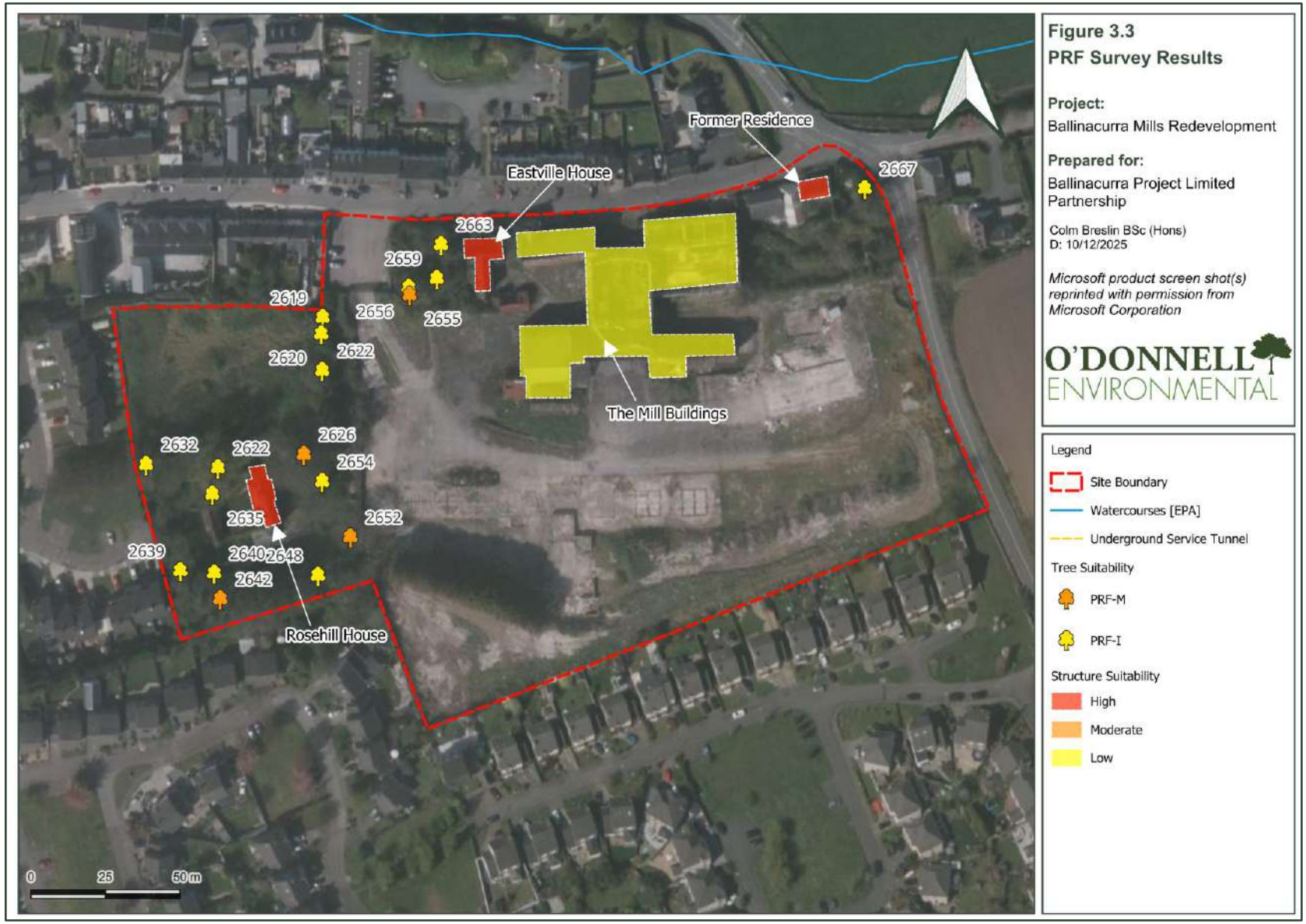
Tree ID	Species	Latitude	Longitude	Comment	Suitability for Roosting Bats	Proposed for Removal
2619	Elder	51.89754	-8.16381	Tear-offs at 2m facing SE, multi-stem, low ivy cover	PRF-I	Yes
2620	Laburnum sp.	51.89749	-8.16381	Cracked ancillary limb at 1.5m facing N, minor peeling bark, moderate ivy cover, multi-stem, features likely to increase in value through time.	PRF-I	Yes
2621	Birch sp.	51.89743	-8.16381	Low ivy cover, tear-off of minor limb at 4m, minor tear-off at 1m facing S.	None	Yes
2622	Small leaved lime	51.89738	-8.16381	Fluting at base, welded co-dominant stems, minor rotholes associated with limb fall.	PRF-I	Yes
2623	Aspen	51.89731	-8.16381	Multi-stem, small diameter main stems, no identifiable PRFs.	None	Yes
2624	Beech	51.89723	-8.16381	Single-stem, minor peeling bark at base from vandalism, shallow inward growth possibly from damage which may accumulate water and will increase in value through time.	None	No
2625	Holly sp.	51.89719	-8.1638	Thin main stems, smooth bark with no identifiable PRFs.	None	Yes
2626	Beech	51.89712	-8.1639	Co-dominant stems at 6m extending upwards, minor rotholes associated with limb fall, cracked limb (horizontal) from tear-off at 4m facing S, tear-off of major limb at 8m facing SW, major rothole extending inwards facing S at 6m, will increase in value through time.	PRF-M	No
2627	Poplar sp.	51.89708	-8.16432	Multi-stem, signs of storm damage, tear-offs of limbs at height facing N at 12m, rot extending inwards along ancillary stems at 2m SE.	PRF-I	Yes
2628	Beech	51.89709	-8.16436	Thin diameter stem, no identifiable PRFs.	None	No
2629	Beech	51.89713	-8.16439	Multi-stem at 3m, no ivy or signs of damage, no identifiable PRFs.	None	No
2630	Sycamore	51.89709	-8.16453	Multi-stem, moderate ivy cover, no identifiable PRFs.	None	Yes
2631	Beech	51.89709	-8.16465	Multi-stem, Low ivy cover, small diameter stems, no identifiable PRFs.	None	No

Tree ID	Species	Latitude	Longitude	Comment	Suitability for Roosting Bats	Proposed for Removal
2632	Beech	51.89709	-8.16467	Multi-stem, Low ivy cover, cracked limb within fork extending downwards at 3m facing S.	PRF-I	No
2633	Beech	51.89709	-8.1647	Single stem of small diameter, no identifiable PRFs.	None	No
2634	Beech	51.89708	-8.16474	Co-dominant Multi-stem, some decay of small limbs with no associated PRFs.	None	No
2635	Sycamore	51.897	-8.16434	Co-dominant Multi-stem, previously dense ivy which has been cut at base, thick interweaving ivy stems between 2-6m, minor tear-offs at height, no signs of major damage.	PRF-I	Yes
2636	Sycamore	51.89693	-8.16461	Single stem of narrow diameter, no identifiable PRFs.	None	Yes
2637	Apple sp.	51.89691	-8.16452	Single stem of small diameter, dense canopy, no signs of damage and no identifiable PRFs.	None	Yes
2638	Common ash	51.89682	-8.16452	Multi-stem of narrow diameter, evidence of minor ash dieback disease.	None	Yes
2639	Common ash	51.89677	-8.1645	Multi-stem, Dense ivy cover, view of PRFs at height restricted, minor dieback and storm damage but no associated PRFs.	PRF-I	Yes
2640	English elm	51.89676	-8.16433	Dead from Dutch Elm disease, peeling bark associated with dead limbs.	PRF-I	Yes
2641	Sycamore	51.89667	-8.16445	Single stem, Low ivy cover, no identifiable PRFs.	None	No
2642	Common ash	51.89669	-8.1643	Multi-stem at 10m, Low ivy cover, tear-offs of major ancillary limbs with associated deadwood and cavities at 10m N, 15m W, 18m W, and 14m S (with cracked limb fissure extending horizontally inwards). Thick interweaving ivy stems.	PRF-M	No
2643	Beech	51.89671	-8.16414	Evidence of disease and historic surgery, included bark as a result of welded stems, no identifiable PRFs.	None	No
2644	Common ash	51.89672	-8.16411	Single stem, no identifiable PRFs.	None	No
2645	Sycamore	51.89673	-8.16403	Ns, previously cut ivy, no signs of damage or decay and associated PRFs.	None	No

Tree ID	Species	Latitude	Longitude	Comment	Suitability for Roosting Bats	Proposed for Removal
2646	Sycamore	51.89679	-8.16385	Multi-stem, no identifiable PRFs.	None	Yes
2647	Sycamore	51.89679	-8.16381	Single stem, no identifiable PRFs.	None	Yes
2648	English elm	51.89676	-8.16383	Moderate ivy cover, peeling bark associated with Dutch Elm disease.	PRF-I	Yes
2649	Wych elm	51.8968	-8.1637	Single stems which bifurcates at 5m, narrow diameter stem, no sign of damage.	None	No
2650	Common ash	51.8968	-8.16365	Single stem, minor evidence of ash dieback, Low ivy cover, no identifiable PRFs.	None	No
2651	Common ash	51.89682	-8.16365	Narrow diameter stems with no identifiable PRFs.	None	Yes
2652	Beech	51.89687	-8.16367	Multi-stem at 2m height, welded codominant stems at base which have since begun to separate with suspected major structural defect extending vertically up tree core from base, assessment at height using ladder and endoscope revealed dry crack extending down core of tree with humus forming in places from leaf detritus, will increase in value through time.	PRF-M	Yes
2653	Beech	51.89691	-8.16367	Multi-stem, Low ivy cover, historic surgery. No identifiable PRFs.	None	Yes
2654	Common ash	51.89704	-8.16381	Dense ivy cover, Multi-stem, historic surgery, birds nest within canopy (likely pigeon).	PRF-I	No
2655	Contorted Willow	51.8976	-8.16338	Multi-stem, Low ivy cover, evidence of decay, hazard beam at 3m extending along stem with associated internal cavity. Inspection with ladder at height with endoscope revealed fissures extending either way along stem for approximately 10 inches.	PRF-M	Yes
2656	Sycamore	51.89763	-8.16339	Multi-stem, tear-off of minor stem at 4m W, will increase in value through time.	PRF-I	Yes
2657	Sycamore	51.89763	-8.16339	Multi-stem, death of uppermost narrow diameter limb with no associated PRFs.	None	Yes
2658	Apple sp.	51.89762	-8.16331	Poor health, minor interweaving ivy stems, historic surgery, peeling bark with associated decay.	None	Yes

Tree ID	Species	Latitude	Longitude	Comment	Suitability for Roosting Bats	Proposed for Removal
2659	Apple sp.	51.89764	-8.1633	Dense ivy cover, view of PRFs restricted at height.	PRF-I	Yes
2660	Sycamore	51.89765	-8.16325	Multi-stem, thin diameter stems with no identifiable PRFs.	None	Yes
2661	Sycamore	51.89768	-8.16324	Narrow stems, no identifiable PRFs.	None	Yes
2662	Sycamore	51.89773	-8.16323	Narrow stems, no identifiable PRFs.	None	Yes
2663	*Cordyline australis*	51.89774	-8.16327	Moderate ivy cover, dense canopy restricts view, minor rothole associated with tear-off facing south at 4m.	PRF-I	Yes
2664	Sycamore	51.89776	-8.16323	Multi-stem, no identifiable PRFs.	None	Yes
2665	Sycamore	51.89768	-8.16319	Multi-stem, no identifiable PRFs.	None	Yes
2666	Sycamore	51.89779	-8.16335	Multi-stem, no identifiable PRFs, historic surgery.	None	Yes
2667	Sycamore	51.89775	-8.16288	Dense ivy cover, Multi-stem, view of PRFs restricted at height, minor damage of ancillary limbs but no identifiable PRFs.	PRF-I	Yes
TG01	Cypress sp.	51.89675	-8.16312	28 individuals within group. No PRFs associated with single stemmed individuals of treeline.	None	Yes
TG02	Mixed species	51.89665	-8.16231	65 individuals within group. All juvenile, recent regrowth of predominantly poplar.	None	Yes
TG03	Mixed species	51.89763	-8.16175	4 individuals within tree group. Cluster of semi-mature ash, ivy cover obscures visibility at height.	None	Yes
TG04	Mixed species	51.89773	-8.16115	15 trees within group. All semi-mature Multi-stem with thin diameter stems, moderate ivy cover in places but no associated PRFs.	None	Yes

**TG – Tree Group*


Former Residence
Eastville House
2667
2663
2659
2619
2656
2655
2620
2622
The Mill Buildings
2632
2622
2626
2654
2635
2652
2639
2640
2648
2642
Rosehill House
0
25
50 m
Figure 3.3
PRF Survey Results
Project:
Ballinacurra Mills Redevelopment
Prepared for:
Ballinacurra Project Limited Partnership
Colm Breslin BSc (Hons)
D: 10/12/2025
Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation
O'DONNELL ENVIRONMENTAL
Legend
Site Boundary
Watercourses [EPA]
Underground Service Tunnel
Tree Suitability
PRF-M
PRF-I
Structure Suitability
High
Moderate
Low

3.4.4 Bat Activity Surveys

The proposed site was assessed for its value to foraging and commuting bats through emergence surveys and passive monitoring. The results are discussed separately below.

3.4.4.1 Emergence Surveys

Three surveyors simultaneously surveyed the site on three occasions during suitable weather conditions, aided by the use of ultrasonic detectors and thermal imaging and infrared cameras (night vision aids).

The first emergence survey on 30th May 2023 was focused on Rosehill House with transects completed by other surveyors around the whole site throughout the survey period. A single Soprano pipistrelle was observed exiting Rosehill House from the western gable approximately 22 minutes after sunset and confirmed through review of thermal imaging footage and bioacoustics analysis (see **Plate 2.2** and **2.3**). A single Brown long-eared bat was identified roosting within Eastville House prior to the emergence survey as discussed in **Section 3.4.2.2** above.

Bat activity surrounding Rosehill House was characterised by low levels of Common pipistrelle and Soprano pipistrelle activity within the mature broadleaved woodland. Surveyors located centrally within the site noted some individuals arriving from the direction of Rosehill House although it cannot be confirmed if they were roosting within the development boundary at the time. Transects were carried out to characterise activity within the wider development site. Low levels of activity were recorded surrounding the mill buildings complex alongside the roadway immediately outside the development site, likely as a result of the exposed habitat of artificial surfaces and streetlighting.

The second emergence survey on 29th June 2023 focused on Rosehill House, Eastville House and the central portion of the mill buildings complex. A single Soprano pipistrelle was observed again leaving Rosehill House approximately 10 minutes after sunset and heading west. A single bat, presumed to be Brown long-eared bat from previous daytime roost surveys, was observed exiting the western aspect of Eastville House under the cover of surrounding semi-mature trees. The survey night was characterised by low levels of activity within the wider site, with activity concentrated around mature trees surrounding Rosehill House in the form of foraging Pipistrelles.

The final survey consisted of a dawn re-entry survey on 22nd September 2023 which focused on back-tracking any activity noted to possible roosting locations. Bat activity proximal to sunrise was characterised by individuals dissipating in a westward direction, likely to a nearby roost within adjacent residential dwellings. A total of two Soprano pipistrelles were recorded re-entering Rosehill House approximately 70 minutes and 43 minutes before sunrise through the open skylight and loose slate on the western gable roof respectively.

A single Common pipistrelle was flying within The Smarts Store adjacent to Rose Lane (L3625) approximately 1 hour before sunset but left through a gap in the window on the northern aspect. A maximum of three Soprano pipistrelles were recorded at any one time performing what appeared to be tandem flight around the eastern aspect of the complex proximal to the burned buildings. These individuals were noted flying into the buildings although were observed leaving again and dissipating westwards thereafter.

Based and analysis of the landscape features present onsite and bat activity surveys, the peripheral treelines/scrub along the southern boundary present a locally important west-east commuting corridor

(see **Figure 1.2**). Small numbers of pipistrelles and Leisler's bat were additionally observed commuting at height (>10 metres) through the centre of the site between likely minor roosting locations, crossing over open ground and built surfaces with no adherence to landscape features.

The occupied residence at the northeast site boundary, while not accessible for internal inspection, was observed from suitable vantages during the course of emergence surveys. No evidence of significant roosting was observed from this structure, although minor roosting cannot entirely be discounted.

3.4.4.2 Passive Bat Monitoring

Passive monitoring was carried out using a Wildlife Acoustics Song Meter Mini full-spectrum detector between 30th May and 19th June 2023 for a total of 20 survey nights. A total of 6,203 registrations were recorded during this period. Bioacoustics analysis of bat sonograms was carried out using Kaleidoscope and all calls were manually verified.

The results of passive bat monitoring are presented in **Table 3.5.** The majority of registrations comprised common and widespread species such as Common pipistrelle and Soprano pipistrelle, comprising 51% and 41% of registrations respectively. Leisler's bat and Daubenton's Bat comprise the remaining majority of registrations at approximately 6% and 2% respectively. The remaining rarer and more sensitive species of Whiskered Bat, Natterer's bat, Nathusius' Pipistrelle and unidentified *Myotis* sp. all comprise less than 1% of the remaining registrations.

Table 3.5 – Bat 'registrations' recorded during passive bat monitoring 2023.

Survey Night	Common pipistrelle	Soprano pipistrelle	Leislers bat	Daubentons Bat	Whiskered Bat	Myotis sp.	Natterers Bat	Nathusius Pipistrelle	Total
30 May	361	126	6	0	0	0	0	0	**493**
31 May	345	223	22	3	0	1	0	0	**594**
01 June	194	179	12	3	1	1	0	0	**390**
02 June	184	167	8	3	1	1	0	1	**365**
03 June	114	172	12	2	0	0	0	0	**300**
04 June	188	117	12	5	0	0	0	0	**322**
05 June	144	132	3	2	0	0	0	0	**281**
06 June	67	111	10	2	0	1	0	0	**191**
07 June	400	207	18	0	0	0	0	0	**625**
08 June	274	141	17	29	1	0	0	0	**462**
09 June	250	116	25	28	0	1	0	0	**420**
10 June	74	122	32	2	0	0	1	0	**231**
11 June	117	121	24	6	0	0	0	0	**268**
12 June	98	101	23	4	1	0	0	0	**227**
13 June	33	89	25	16	4	0	0	0	**167**
14 June	70	77	27	5	0	0	1	0	**180**
15 June	71	115	30	15	0	0	0	0	**231**
16 June	49	110	8	3	1	0	1	0	**172**
17 June	82	68	67	1	0	0	0	0	**218**
18 June	28	22	16	0	0	0	0	0	**66**
Total	**3143**	**2516**	**397**	**129**	**9**	**5**	**3**	**1**	**6203**

Note: data shows number of bat registrations which is defined as the presence of a species within a recording of up to 15 seconds.

Overall, a high level of bat activity was recorded. Of the nine confirmed resident Irish species, seven were recorded within the proposed development; but some of these species were only recorded infrequently. The Annex II listed lesser horseshoe bat was not recorded, and the proposed development is located outside of their known range, with the nearest available record approximately 28km west of the proposed development within Blarney Castle and Gardens (Tom O'Donnell pers. comm.). Brown long-eared bat was not recorded despite being confirmed roosting within Eastville House within the development boundary. This is likely as a result of their low-intensity echolocation which is often not picked up by detectors (Russ, 2012; 2021).

The distribution of registrations recorded between 30th May and 18th June 2023 are shown in **Figure 3.4** and **Figure 3.5**. Median sunset and sunrise time was 21:49 and 05:14 respectively throughout the survey period. Activity patterns can be seen as relatively consistent throughout the survey period, indicating the survey area is of high value for its bat assemblage.

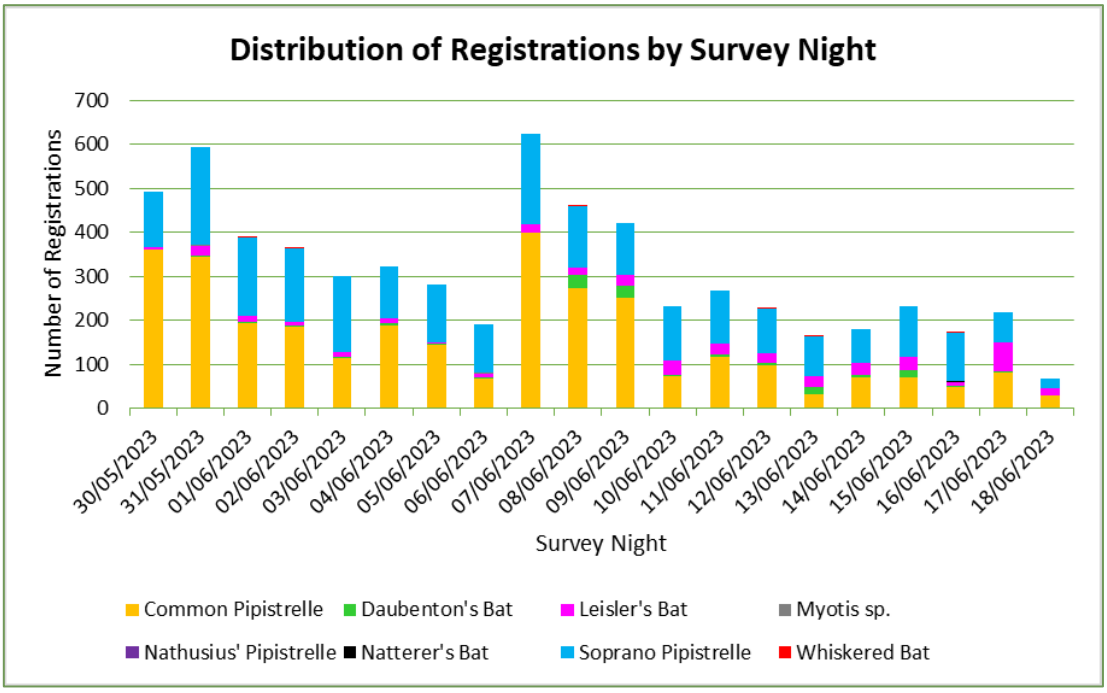


Figure 3.4 - Distribution of all bat registrations recorded by survey night and species.

Additionally, activity levels remain consistent throughout the night, with the majority of activity present around sunset and sunrise (see **Figure 3.4**). The number of registrations then declines but become stable throughout the night, indicating the survey area is of moderate value for foraging bats. The earliest registrations of bats appear approximately 20 minutes before sunset and consist entirely of Common and Soprano pipistrelle, suggesting the presence of bats roosting within the locality of the proposed site. This aligns with the results of bat activity surveys, whereby Soprano pipistrelle was observed roosting within Rosehill House (see **Plate 2.2** and **2.3**), and other individuals likely roosting in residential dwellings to the west locality.

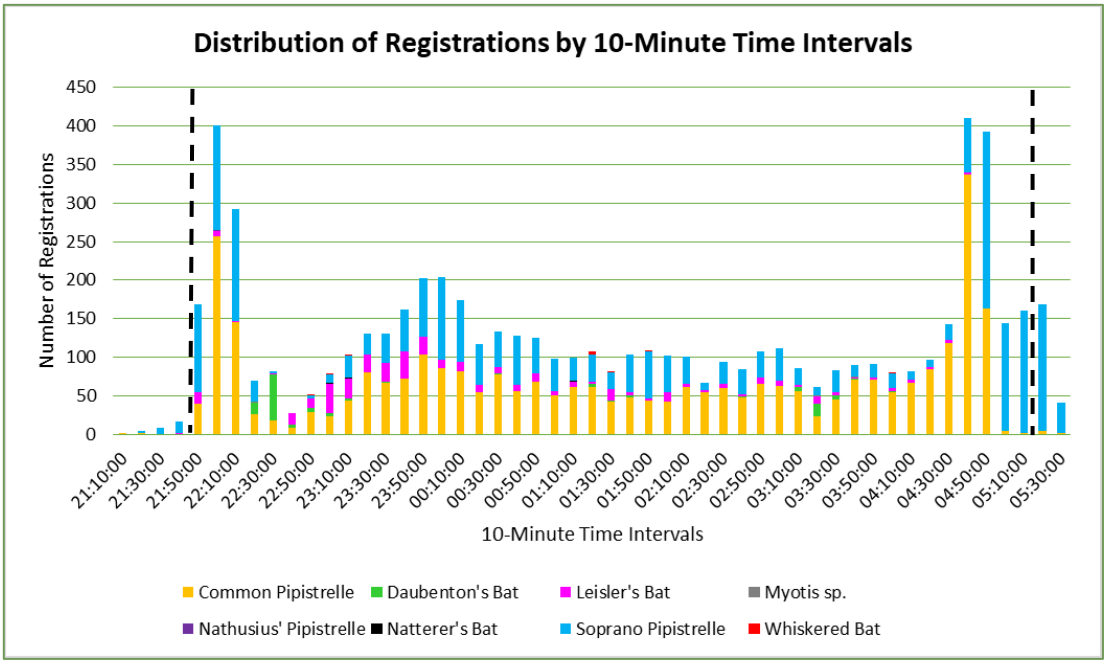


Figure 3.5 - Distribution of all bat registrations recorded by 10-minute time intervals and species (median sunset and sunrise times were 21:49 and 05:14 respectively – indicated by black dashed lines).

Considering the nature and scale of the proposed site, the habitats contained within, the distribution of activity, and the presence of roosting bats, the proposed site is considered of **Local Importance (Higher Value)** for foraging, commuting and roosting bats (following NRA, 2009).

3.5 BIRDS

An assessment of the likely value of the proposed site and its environs to birds was carried out by means of desktop review and site surveys carried on various dates between 2023 and 2025.

3.5.1 Desktop Review

NBDC holds records for bird species previously recorded in the 10km grid square (W87) in which the proposed site is located. These records are shown in **Table 3.6.** All Special Conservation Interest (SCI) bird species associated with surrounding SPAs (Cork Harbour SPA, Ballycotton Bay SPA, Ballymacoda Bay SPA) have been recorded within this grid square, with the exception of Sanderling (see green below).

Table 3.6 - Bird species records in the 10km grid square (W87)

Common Name	Species name	Date of last record
American Bittern	*Botaurus lentiginosus*	31/12/1875
American Golden Plover	*Pluvialis dominica*	06/10/2003
Pipit sp.	*Anthus spinoletta/petrosus agg.*	29/02/1984
Arctic Tern	*Sterna paradisaea*	05/12/2017
Barn Owl	*Tyto alba*	15/01/2023
Barn Swallow	*Hirundo rustica*	22/05/2021
Barnacle Goose	*Branta leucopsis*	29/02/1984
Bar-tailed Godwit	*Limosa lapponica*	05/12/2017
Black Guillemot	*Cepphus grylle*	31/12/2011
Black Kite	*Milvus migrans*	20/04/1991

Common Name	Species name	Date of last record
Black Redstart	*Phoenicurus ochruros*	31/12/2011
Black-billed Magpie	*Pica pica*	22/05/2021
Blackcap	*Sylvia atricapilla*	23/04/2020
Black-headed Gull	*Larus ridibundus*	16/05/2020
Black-tailed Godwit	*Limosa limosa*	13/11/2019
Blue Tit	*Cyanistes caeruleus*	25/05/2021
Blue-winged Teal	*Anas discors*	13/11/1955
Bonaparte's Gull	*Larus philadelphia*	20/03/2007
Brambling	*Fringilla montifringilla*	31/12/2011
Canada Goose	*Branta canadensis*	31/12/2011
Chaffinch	*Fringilla coelebs*	25/02/2022
Coal Tit	*Periparus ater*	18/01/2021
Common Blackbird	*Turdus merula*	06/04/2023
Common Bullfinch	*Pyrrhula pyrrhula*	18/01/2021
Common Buzzard	*Buteo buteo*	04/10/2022
Common Chiffchaff	*Phylloscopus collybita*	17/04/2021
Common Coot	*Fulica atra*	31/12/2011
Common Crane	*Grus grus*	25/11/2011
Common Cuckoo	*Cuculus canorus*	31/07/1991
Common Goldeneye	*Bucephala clangula*	31/12/2011
Common Grasshopper Warbler	*Locustella naevia*	31/12/2011
Common Greenshank	*Tringa nebularia*	05/12/2017
Common Kestrel	*Falco tinnunculus*	10/09/2021
Common Kingfisher	*Alcedo atthis*	31/12/2011
Common Linnet	*Carduelis cannabina*	31/12/2011
Common Moorhen	*Gallinula chloropus*	14/05/2020
Common Pheasant	*Phasianus colchicus*	06/04/2023
Common Quail	*Coturnix coturnix*	31/07/1972
Common Raven	*Corvus corax*	04/04/2023
Common Redshank	*Tringa totanus*	10/01/2018
Common Sandpiper	*Actitis hypoleucos*	31/12/2011
Common Shelduck	*Tadorna tadorna*	14/01/2023
Common Snipe	*Gallinago gallinago*	05/03/2022
Common Starling	*Sturnus vulgaris*	06/04/2023
Common Swift	*Apus apus*	24/05/2024
Common Tern	*Sterna hirundo*	31/07/1972
Common Whitethroat	*Sylvia communis*	31/12/2011
Common Wood Pigeon	*Columba palumbus*	18/01/2021
Dunlin	*Calidris alpina*	05/12/2017
Eurasian Collared Dove	*Streptopelia decaocto*	18/01/2021
Eurasian Curlew	*Numenius arquata*	04/12/2021
Eurasian Hobby	*Falco subbuteo*	21/07/2013
Eurasian Jackdaw	*Corvus monedula*	18/01/2021
Eurasian Jay	*Garrulus glandarius*	07/05/2021
Eurasian Oystercatcher	*Haematopus ostralegus*	14/01/2023
Eurasian Reed Warbler	*Acrocephalus scirpaceus*	24/05/2020
Eurasian Siskin	*Carduelis spinus*	10/08/2020
Eurasian Sparrowhawk	*Accipiter nisus*	10/07/2021
Eurasian Spoonbill	*Platalea leucorodia*	01/06/2007
Eurasian Teal	*Anas crecca*	05/12/2017
Eurasian Tree Sparrow	*Passer montanus*	16/05/2020
Eurasian Treecreeper	*Certhia familiaris*	01/04/2021
Eurasian Wigeon	*Anas penelope*	23/01/2019
Eurasian Woodcock	*Scolopax rusticola*	31/12/2011
European Golden Plover	*Pluvialis apricaria*	19/11/2016

Common Name	Species name	Date of last record
European Goldfinch	*Carduelis carduelis*	11/01/2023
European Greenfinch	*Carduelis chloris*	19/06/2020
European Robin	*Erithacus rubecula*	06/04/2023
European Turtle Dove	*Streptopelia turtur*	31/07/1991
Fieldfare	*Turdus pilaris*	24/01/2021
Gadwall	*Anas strepera*	31/12/2011
Glaucous Gull	*Larus hyperboreus*	06/03/2005
Goldcrest	*Regulus regulus*	25/05/2020
Great Black-backed Gull	*Larus marinus*	05/05/2020
Great Cormorant	*Phalacrocorax carbo*	05/05/2020
Great Crested Grebe	*Podiceps cristatus*	05/12/2017
Great Egret	*Ardea alba*	31/12/2011
Great Northern Diver	*Gavia immer*	31/12/2011
Great Spotted Woodpecker	*Dendrocopos major*	21/12/2021
Great Tit	*Parus major*	06/04/2023
Greater Scaup	*Aythya marila*	31/12/2011
Greater White-fronted Goose	*Anser albifrons*	29/02/1984
Green Sandpiper	*Tringa ochropus*	31/12/2011
Grey Heron	*Ardea cinerea*	20/04/2023
Grey Plover	*Pluvialis squatarola*	31/12/2011
Grey Wagtail	*Motacilla cinerea*	24/01/2021
Gyr Falcon	*Falco rusticolus*	06/03/1970
Hedge Accentor	*Prunella modularis*	18/01/2021
Herring Gull	*Larus argentatus*	05/05/2020
Hooded Crow	*Corvus cornix*	18/01/2021
Hoopoe	*Upupa epops*	31/12/2011
House Martin	*Delichon urbicum*	18/01/2021
House Sparrow	*Passer domesticus*	18/01/2021
Iceland Gull	*Larus glaucoides*	30/01/2021
Leach's Storm-petrel	*Oceanodroma leucorhoa*	31/12/2011
Lesser Black-backed Gull	*Larus fuscus*	31/12/2011
Lesser Redpoll	*Carduelis cabaret*	31/12/2011
Little Egret	*Egretta garzetta*	02/04/2021
Little Grebe	*Tachybaptus ruficollis*	05/12/2017
Little Plover	*Charadrius dubius*	02/12/2017
Long-eared Owl	*Asio otus*	06/06/2021
Long-tailed Duck	*Clangula hyemalis*	31/12/2011
Long-tailed Tit	*Aegithalos caudatus*	04/10/2022
Mallard	*Anas platyrhynchos*	20/04/2023
Meadow Pipit	*Anthus pratensis*	31/12/2011
Mediterranean Gull	*Larus melanocephalus*	31/12/2011
Merlin	*Falco columbarius*	19/11/2016
Mew Gull	*Larus canus*	13/11/2019
Mistle Thrush	*Turdus viscivorus*	26/04/2020
Mute Swan	*Cygnus olor*	27/03/2021
Northern Goshawk	*Accipiter gentilis*	26/09/1973
Northern Lapwing	*Vanellus vanellus*	21/11/2020
Northern Pintail	*Anas acuta*	31/12/2011
Northern Shoveler	*Anas clypeata*	04/01/2021
Peregrine Falcon	*Falco peregrinus*	19/11/2016
Phylloscopus collybita subsp. tristis	*Phylloscopus collybita subsp. tristis*	09/02/2013
Pied Avocet	*Recurvirostra avosetta*	20/11/1968
Pied Wagtail	*Motacilla alba subsp. yarrellii*	04/01/2021
Red Kite	*Milvus milvus*	18/03/2021
Red Knot	*Calidris canutus*	31/12/2011

Common Name	Species name	Date of last record
Red-breasted Merganser	*Mergus serrator*	31/12/2011
Red-necked Grebe	*Podiceps grisegena*	31/12/2011
Redwing	*Turdus iliacus*	31/12/2011
Reed Bunting	*Emberiza schoeniclus*	24/05/2020
Ring Ouzel	*Turdus torquatus*	23/04/2020
Ring-billed Gull	*Larus delawarensis*	11/03/2005
Ringed Plover	*Charadrius hiaticula*	31/12/2011
Rock Pigeon	*Columba livia*	22/05/2015
Rock Pipit	*Anthus petrosus*	31/12/2011
Rook	*Corvus frugilegus*	04/05/2020
Ruddy Duck	*Oxyura jamaicensis*	31/12/2011
Ruddy Turnstone	*Arenaria interpres*	31/12/2011
Sand Martin	*Riparia riparia*	22/05/2021
Sedge Warbler	*Acrocephalus schoenobaenus*	31/12/2011
Short-eared Owl	*Asio flammeus*	29/02/1984
Sky Lark	*Alauda arvensis*	31/12/2011
Slavonian Grebe	*Podiceps auritus*	31/12/2011
Song Thrush	*Turdus philomelos*	17/01/2021
Spotted Flycatcher	*Muscicapa striata*	31/12/2011
Spotted Redshank	*Tringa erythropus*	29/02/1984
Stock Pigeon	*Columba oenas*	04/08/2020
Stonechat	*Saxicola torquata*	31/12/2011
Tufted Duck	*Aythya fuligula*	31/12/2011
Water Rail	*Rallus aquaticus*	31/12/2011
Whimbrel	*Numenius phaeopus*	05/05/2020
White Wagtail	*Motacilla alba*	31/12/2011
White-throated Dipper	*Cinclus cinclus*	12/01/2021
Willow Warbler	*Phylloscopus trochilus*	31/12/2011
Winter Wren	*Troglodytes troglodytes*	06/04/2023
Yellowhammer	*Emberiza citrinella*	11/01/2023
Yellow-legged Gull	*Larus michahellis*	11/03/2005

Note: Green highlighted cells denote bird species listed for surrounding SPAs (Cork Harbour SPA, Ballycotton Bay SPA, Ballymacoda Bay SPA).

Ecological data collected in relation to nearby proposed residential developments on greenfield (intensive agriculture) sites was reviewed in order to further assess the likelihood of surrounding agricultural habitats being used by wintering waterbirds. Surveys targeting wintering birds were carried out for the Castleredmond LRD (planning ref: 23/5707). Surveys were undertaken on five separate occasions in the winter of 2022/2023 and no evidence of target species using the site as ex-situ foraging habitat (i.e., waterbirds associated with the nearby SPAs) was found. A number of Gull species, namely Black-headed Gull, Herring Gull, Great black-backed Gull, Lesser black-backed Gull and a firstwinter Kittiwake were observed in flight over the site (Enviroguide, 2023). Winter bird surveys were not carried out in relation to the permitted Maple Woods LRD (planning ref. 23/4450), or the four phases of the Lakeview LRD (planning refs: 21/7428; 22/4753; 22/6688; 23/5703).

3.5.2 Field Surveys

Dedicated breeding and wintering bird surveys were undertaken between summer 2023 and winter 2025. Results are detailed separately below.

3.5.2.1 Breeding Bird Surveys

Three dawn/dusk surveys during the bird breeding season were carried out by Noel Linehan BSc on 2nd June, 29th June, and 24th July 2023 with the final survey date targeting nesting Swift. The purpose

of the surveys was to identify the presence of nesting birds within the development boundary, the likely importance of the existing structures and trees for breeding birds, and the significance of interaction of bird species with the site.

In total, 42 species of bird were recorded, of which 35 were identified to be interacting with the development site. Four species are Red-listed under *Birds of Conservation Concern in Ireland 2020-2026* (BoCCI; Gilbert et al., 2021):

- Kestrel
- Stock Dove
- Swift
- Curlew

Kestrel, Stock Dove, and Swift were identified interacting with the site. An individual Curlew was identified flying over the site. One pair of Kestrels nested in a west facing wall of the mill buildings complex and successfully fledged two chicks during summer 2023 (see **Figure 3.2**; **Appendix A10, A12**). Additionally, Kestrel was observed wintering within the mills complex during the course of other ecological surveys. During one survey a pair of Swifts were observed flying low from a behind the concrete building within the southwestern portion of the mill complex, although no nest was identified. It should be noted that nest sites selected by young Swifts or failed nesting attempts are difficult to identify as they are often only visited rarely proximal to dusk. While a robust survey effort was carried out, it cannot be conclusively stated that the mill complex buildings are not being used by nesting Swifts. A single Stock Dove was noted completing a short display flight, with the possibility of nesting within the locality of the development site.

Fourteen species are Amber-listed under *Birds of Conservation Concern in Ireland 2020-2026* (BoCCI; Gilbert et al., 2021), of which ten were interacting with the site. These species include:

- Goldcrest
- Greenfinch
- House Martin
- House Sparrow
- Linnet
- Sand Martin
- Spotted Flycatcher
- Starling
- Swallow
- Willow Warbler

Small numbers of Black-headed Gull, Cormorant, Herring Gull & Lesser Black-backed Gulls flew over. Swallow were identified nesting within the buildings, notably Eastville House (see **Appendix A8**). House Martin and Sand Martin were observed foraging within the development site and proximal to buildings although no nesting was observed. House Sparrows were observed courting and carrying nesting material and can be presumed to be nesting within the locality of the development area. Surveys took place following the nesting season for Starlings, although fledged juveniles were observed within the development area.

The overall site was characterised by a high diversity of bird species with a relatively high degree of interaction with the site. Nesting was observed by multiple species. Of particular note was Red-listed Kestrel nesting within the mills building complex (see **Appendix A12**) and Amber-listed Swallow nesting within Eastville House (see **Appendix A8**). Stock Dove, Swift and House Sparrow are likely nesting within the locality of the development site, although no nesting was observed of these species onsite. Localised high-value foraging and nesting habitat for birds exists within the development area in the form of mature semi-natural woodland surrounding Rosehill House, scrub bordering the southern boundary and abundance of nesting opportunities present within the derelict structures.

Considering the nature and scale of the proposed site and nesting observed onsite, the proposed site is considered of **Local importance (Higher Value)** for breeding birds (following NRA, 2009).

3.5.2.2 Wintering Bird Surveys

The proposed site is considered to be of negligible value to waterbirds. Due to the proximity of the proposed site to neighbouring SPAs, most notably Cork Harbour SPA, consideration was given to the possibility of significant aggregations of birds associated with Cork Harbour SPA to occur proximal to the proposed site. Were that to occur, ex-situ effects or other indirect effects may occur.

Bespoke winter surveys were carried out by means of observation from suitable vantages surrounding the site over the winter of 2024/2025. The aim of these surveys was to identify any significant aggregations of waterbirds proximal to the proposed site, for example utilising nearby tillage fields.

The hinterland associated with the proposed development consists primarily of intensive agricultural grassland alongside arable crops to the north, east and south. Urban land-uses dominate to the west. High levels of anthropogenic disturbance exist in the form of quarries to the south and northeast.

On a number of occasions small numbers of Lesser Black-backed gulls were observed approximately 1km south of the proposed development commuting towards Cork Harbour. In December 2024 a single Kestrel was observed in the large arable field to the east of the site and the individual then flew into the mills building complex. In January 2025 a single Curlew was heard calling 600m east of the proposed development but no flightline was observed.

Overall, based on desk-based study of available information as well as project-specific surveys, there was no evidence of significant aggregations of wintering waterbirds within adjacent land-uses based on desk study and targeted surveys in the winter of 2024/2025.

Considering the nature and scale of the proposed site and lack of SCI bird species recorded within and surrounding the development boundary, the proposed site is considered of **Local importance (Lower Value)** for wintering birds (following NRA, 2009).

3.6 SUMMARY OF RESULTS

The habitats identified within the site are of generally low ecological value and is dominated by artificial surfaces or recolonising ground. A mosaic of scrub and woodland surrounding Rosehill House offers locally important vegetation cover. The uncommon bee orchid was identified within the proposed development. No high-impact invasive species were identified within the site, with the medium-impact alien invasive plant species Butterfly bush noted to be abundant throughout.

No evidence of underground dwellings attributed to any protected non-volant mammal species was identified onsite. hedgehog was identified onsite and is likely nesting within the scrub surrounding Rosehill House.

Roosting by bats was confirmed within both Eastville House and Rosehill House and this roosting is of low conservation significance; no evidence of maternity roosting was identified. While no roosting by bats was confirmed within the mill buildings complex, the buildings contain an abundance of crevices which suggests that bats may sporadically roost individually or in small numbers. While no roosting is evident within the former residence, the intact nature of the structure presents a high suitability roosting location for bats should it become accessible to them. The site in general presents low value foraging

habitat for bats with portions of mature mixed broadleaf woodland and scrub habitat providing locally important foraging and commuting habitat for bats.

Multiple red-listed and Annex bird species were recorded flying over or interacting with the site. The red-listed Kestrel was identified nesting and wintering within the mill building complex and successfully fledged two chicks in summer 2023. Barn Swallow (amber-listed) are nesting within Eastville House and evidence that other species may utilise the existing structure for nesting was also recorded. No significant aggregations of bird species associated with surrounding SPAs were observed within or on lands surrounding the proposed development.

Overall, the proposed development site is of **Local importance (Higher Value)** following NRA (2009).

4 Potential Impacts

Potential ecological impacts which could arise as a result of the proposed development, and the potential effects may would have on ecological receptors, are discussed below. Avoidance and mitigation measures in respect of identified potential impacts are discussed in Chapter 5 - Avoidance and Mitigation Measures. The predicted residual effect of identified potential impacts following application of avoidance and mitigation measures are discussed in Chapter 6 - Residual Impacts.

4.1 DO-NOTHING SCENARIO

If the proposed development does not proceed, the 'do nothing' scenario is that the existing environment within the site boundary is likely to remain as described herein in the short term at least. The brownfield site is currently unmanaged and not maintained. Under a 'do-nothing' scenario it is likely that the structures identified onsite would eventually fall into an advanced state of dereliction and be lost entirely as roosting structures for bat and bird species. Scrub habitat was noted on the borders of the site and throughout in smaller patches. Continued lack of maintenance will enable further scrub encroachment on the dominant bare and recolonising habitat-types, including eventually outcompeting the identified bee orchid stand which is a species noted for not tolerating any form of advanced scrub encroachment. Existing surface-water drainage patterns would continue to occur as currently.

4.2 POTENTIAL EFFECTS ON INTERNATIONALLY AND NATIONALLY DESIGNATED SITES

The potential for effects on Internationally designated sites is addressed comprehensively in the accompanying AA Screening and Natura Impact Statement (O'Donnell Environmental, 2025). It is objectively concluded, following the application of industry standard measures and a bespoke avoidance measure, that the proposed project is not likely to cause significant negative effects on the Great Island Channel SAC, Cork Harbour SPA, Ballycotton Bay SPA or any other Natura 2000 site, individually or in combination with other plans or projects.

The proposed development is not located within any NHAs or pNHAs. Four pNHAs are located within 5km of the proposed development (see **Figure 3.1b**). Great Island Channel pNHA (1058) is located 200m northwest of the proposed development and largely overlaps with the Great Island Channel SAC and Cork Harbour SPA, sharing a large degree of conservation designations. The potential for effects on Great Island Channel SAC, and by extension the Great Island Channel pNHA, is described in the accompanying AA Screening and Natura Impact Statement (O'Donnell Environmental 2024), and no additional potential impacts are precited to arise in relation to the pNHA specifically.

Carrigshane Hill pNHA and Loughs Aderry and Ballybutler pNHA (0446) are located 1.03km and 3.41km northeast of the proposed development. Carrigshane Hill pNHA is topographically elevated relative to the proposed development and considering the nature and scale of the proposed works and the lack of a source-receptor pathway (with consideration of surface water and hydrogeological connectivity) it is concluded that there is no potential for negative effects to occur on this site. Equally, given the nature and scale of the proposed works and the distance to Loughs Aderry and Ballybutler pNHA, no potential for effects is predicted to arise.

Rostellan Lough, Aghada Shore and Poulnabibe Inlet pNHA, largely overlaps with the Cork Harbour SPA, possesses a remote source-receptor pathway to the proposed development (as discussed for

international sites in Cork Harbour in the accompanying AA Screening in O'Donnell Environmental, 2025). The potential for effects on Cork Harbour SPA, and by extension this pNHA, is described O'Donnell Environmental 2025), and no additional potential impacts are precited to arise in relation to the pNHA specifically.

No viable source receptor pathway to any other nationally designated site exists. No additional measures are required in relation to nationally designated sites specifically.

4.3 POTENTIAL EFFECTS ON WATER QUALITY

The below sections discuss the potential effects of the proposed development on water quality in both the construction and operational phases.

4.3.1 Surface Water

The potential for effects on surface water during both the construction and operational phases is discussed below.

4.3.1.1 Construction Phase

Surface water runoff from the proposed site currently discharges largely to ground. There is possibly some surface water flow on areas of hardstand during heavy rain which discharges to the surrounding municipal drain network of public roads, into the West Ballynacora Stream and ultimately Cork Harbour. There was no visible evidence of natural surface water pathways within the proposed development boundary.

Habitat loss or deterioration of the ecological status of surface water can occur from the indirect effects of contaminated run-off or discharge into the aquatic environment, through siltation, nutrient release and/or contamination.

The construction phase of the development will involve site preparation (e.g. earthworks, excavation etc.). In the absence of mitigation, the proposed construction phase works have the potential to result in sediment run-off during prolonged heavy rain where excavated areas and spoil heaps are unprotected. Similarly, the operation and refuelling of machinery during construction has the potential to result in leaks of hydrocarbons in the absence of mitigation.

Overall, it is considered that the construction phase of the proposed development in the absence of mitigation would have a **short-term, slight, negative effect at a local level** (following EPA, 2022).

4.3.1.2 Operational Phase

The site is not at risk of fluvial or coastal flooding (MHL, 2025b). Sustainable Drainage System (SuDS) protocols will be implemented to ensure a high standard of surface water runoff from the proposed development, as outlined by the accompanying Drainage Impact Assessment Report (MHL, 2025c). The proposed development will utilise permeable grasscrete paving, tree pits, water butts and attenuation tanks which will be entirely separate to the foul water system.

The proposed development will be split into three sub-catchments, with a total of six attenuation tanks. The overall attenuation system is designed with a controlled flow rate of less than the greenfield run-off rate for the catchment area and will cater for storm return period of 1 in 100 year and with a 20% climate change factor. All networks will eventually discharge into two outfalls along Rose Lane. Each local network will be fitted with grit-sump manholes, silt traps and hydrocarbon interceptors. Overall, the

maximum discharge rate from the proposed has been restricted to considerably less than the calculated permissible runoff for the site (mean annual peak flow 'QBAR').
No further measures are warranted in relation to surface water management in the operational phase. The overall effect on surface water as a result of the construction phase of the proposed development is considered to be **neutral** (following EPA, 2022).

4.3.2 Foul Water

The potential for effects on surface water during both the construction and operational phases as a result of foul water is discussed below.

4.3.2.1 Construction Phase

Temporary welfare facilities will be provided during the construction phase of the proposed development. All foul water will be removed offsite by an approved contractor (MHL, 2025a). There will be no increase in foul water loading on the existing municipal system and as such no overall effect of foul water as a result of the construction phase of the proposed development is considered to be **neutral** (following EPA, 2022).

4.3.2.2 Operational Phase

The operational phase of the proposed development will see an increase in foul water flow due to the occupation of 128 residential and other mixed-use units. No foul wastewater will be discharged from site during the operational phase.

The 'Annual Environmental Report' from 2023 notes that Midleton WWTP was non-compliant with Emission Limit Values (ELVs), specifically faecal coliforms, with no remaining organic capacity (PE) (Uisce Éireann, 2023). The operational phase of the proposed development will add additional loading on the over-capacity Midleton WWTP, resulting in significant negative impacts on nearby sensitive receptors.

In order to accommodate the proposed connection, upgrade works are to create additional capacity in the wastewater treatment system. Two projects are currently being progressed by Irish Water to provide the additional wastewater treatment capacity. Uisce Éireann has confirmed that following these upgrades there will be sufficient capacity to adequately process the additional input from the operational demand of the proposed development (MHL, 2025b). As outlined within the accompanying Natura Impact Statement (O'Donnell Environmental, 2025), the proposed development will not be occupied until such time that upgrade works are completed by Uisce Éireann and capable of catering for the additional wastewater loading. A pre-connection enquiry form was submitted to Uisce Éireann in relation to the nearby existing connection point along the L3625. Uisce Éireann provided a Confirmation of Feasibility on 5th December 2025 with regards to foul water connection.

No further measures are warranted in relation to foul-water discharge in the operational phase. The overall effect on foul water as a result of the operational phase of the proposed development is considered to be **neutral** (following EPA, 2022).

4.4 POTENTIAL EFFECTS ON HABITATS AND FLORA

The below sections discuss the potential effects of the proposed development on habitats and flora in both the construction and operational phases.

4.4.1 Construction Phase

No Annex I habitats listed under the EU Habitats Directive are present within the study site. No high-impact alien invasive plant species (e.g., Japanese Knotweed) are present on the proposed site. All species recorded during the botanical survey are considered common for similar habitats in the general area.

From the early stages in the design process O'Donnell Environmental engaged with Fourem Architects and Holly Arboriculture to reduce the impact of the proposed scheme through avoidance of loss in the first instance and incorporate mitigation and enhancement measures thereafter. Cork County Council were consulted during the Section 32B pre-planning process, including Ecologist Joy Barry, on landscape design and retention of mature trees.

Following this, the number of mature trees retained was increased from 7 to 16, mostly surrounding Rosehill House. The number of individually tagged mature trees proposed for removal subsequently dropped from 42 to 33, thus reducing the number of overall trees lost from 154 to 145. A large proportion of trees to be lost comprise early-mature self-seeded specimens and non-native species of lower ecological value.

The use of heavy machinery in the root zone of trees being retained can cause damage of woodland habitat and trees, resulting in increased tree morbidity and mortality. Equally, the use of machinery in proximity to trees can result in accidental damage to the trunk and branches of trees.

A locally significant population of bee orchid was identified at the southeastern portion of the site within recolonising ground habitat. There exists potential in the absence of targeted mitigation for this population to be lost entirely during site clearance and soil stripping works.

Some fill material may be required for importation during construction phases which poses the risk of importation of an alien invasive plant species. Additionally, there exists the risk of exportation of alien invasive plant species such as Butterfly Bush, but it should be noted that this species is widespread and highly naturalised in the surrounding area.

In the absence of mitigation, the effect on local habitats and flora as a result of the construction phase of the proposed development would be a **temporary, moderate, negative effect** following EPA (2022).

4.4.2 Operational Phase

There will be no additional removal of existing habitat features during the operational phase of the proposed development. O'Donnell Environmental engaged with the project team during the design phase to avoid loss of or disturbance to ecologically significant features in so far as was possible.

In the absence of mitigation, the effect on local habitats and flora as a result of the operational phase of the proposed development would be **a slight, negative effect** following EPA (2022).

4.5 POTENTIAL EFFECTS ON NON-VOLANT MAMMALS

The below sections discuss the potential effects of the proposed development non-volant mammals in both the construction and operational phases.

4.5.1 Construction Phase

Limited evidence of non-volant mammal usage was found throughout the site. No underground dwellings of protected mammal species were present onsite. The site may be used by badger and Fox occasionally. The Annex II listed species otter as not recorded onsite despite proximity to nearby watercourses. The habitats identified onsite are considered sub-optimal for otter and it is considered this species is unlikely to occur as a result.

Hedgehog was identified commuting through the site and is likely nesting in proximity to Rosehill House to due abundant vegetation cover (see **Plate 3.3.1**). Hedgehog has been noted to be declining in range in recent years and is now considered a species of conservation concern within Ireland (Haigh et al., 2011), with the Internation Union for the Conservation of Nature (IUCN) recently classifying this species as 'Near Threatened' due to a 30% decline over the past decade. Urban development, habitat loss, fragmentation, traffic mortality, and other human activities such as poorly managed domestic gardens have been attributed to their decline (Holsbeek et al., 1999). Hedgerows and other linear habitat features are used by this species to a proportionally greater extent than other habitats and are valuable areas for the construction of nest sites (particularly hibernacula) due to the accumulation of leaf litter and subsequent invertebrate (prey) colonisation (Smith et al., 2008). Any loss of these features, alongside the increase in human activity will negatively impact this species which is currently found onsite and may result in their complete loss (Hoff, 2009).

The loss of trees, hedgerow and earthen bank habitat alongside artificial night lighting will cause a reduction in the suitability of the site for foraging and underground dwellings for non-volant mammals.

Localised increases in noise and dust levels are likely to occur during the construction phase through the operation of machinery (excavation, pile driving, etc.). Dust may arise during construction works if dry soil or other material is allowed to become windborne. In the absence of mitigation, these impacts could give rise to indirect negative effects on non-volant mammal species, notably hedgehog.

Construction works will cause some local displacement of terrestrial mammals during site clearance and construction. Hibernating mammal species such as hedgehog are particularly susceptible to site clearance during the winter months due to their delayed ability to respond while in hibernation.

Deep excavations can potentially entrap mammals commuting across the site. During construction, should there be pooled water in any excavations there is potential for drowning.

Inappropriate or excessive lighting during the construction phase can cause disturbance to mammals at night.

The inappropriate disposal of food wastes during the construction phase can encourage scavenging by mammals (and birds) at the site.

In the absence of mitigation, the effect on non-volant mammals as a result of the construction phase of the proposed development would be a **short-term, slight negative effect** at a local level (following EPA, 2022).

4.5.2 Operational Phase

No additional habitat loss will occur during the operational phase. Native hedgerow and tree planting along the boundaries of the site, alongside mammal-friendly post & wire fencing supplied within the Green Infrastructure and Landscape Strategy (Fourem, 2025), will partially offset the loss of vegetation in the construction phase and maintain a degree of landscape connectivity. Relative to the condition of

the site prior to vegetation clearance and introduction of artificial night lighting, the proposed habitats are likely to lead to a reduction in foraging opportunity and habitat connectivity for mammals such as badger and hedgehog due to disturbance from lighting and human activity.

In the absence of mitigation, the overall effect on non-volant mammals as a result of the proposed development during the operational phase would be a **slight, negative** effect (following EPA, 2022).

4.6 POTENTIAL EFFECTS ON BATS

The below sections discuss the potential effects of the proposed development on bats in both the construction and operational phases.

4.6.1 Construction Phase

The proposed development will see the loss of bat roosting features within both structures and trees. The construction phase of the proposed development will see the permanent loss of the non-significant roosting within Eastville House and Rosehill House.

The number of trees proposed for removal with suitability for roosting bats was reduced in the first instance following consultation with O'Donnell Environmental and design team and changed made following consultation with Cork County Council during the Section 32B pre-planning process allowed for additional tree retention. This has resulted in the retention of two additional 'PRF-M' trees and two 'PRF-I' trees specifically, in addition to other mature trees with no roosting suitability. As outlined in **Section 3.4.3**, two 'PRF-M' trees and twelve 'PRF-I' trees with roosting suitability for bats will unavoidably be lost during the construction phase. In the absence of mitigation, the loss of these trees, in combination with the renovation of existing buildings will result in the loss of potential roosting opportunities for bat species locally.

Removal of other trees and vegetation, and illumination of such will reduce the suitability of these features for foraging and commuting bats in the absence of mitigation. These features additionally maintain landscape connectivity and provide commuting bats with waypoints and corridors through which they commute to and from roosts/foraging areas. The loss of these features on site will cause a reduction in landscape connectivity in the immediate vicinity of the proposed site. Artificial lighting is thought to increase the chances of bats being predated upon by avian predators (e.g. owls), and therefore bats may modify their behaviour to avoid illuminated areas.

As identified within **Section 3.4.4.1**, the peripheral treelines/scrub along the southern boundary present a locally important west-east commuting corridor for bat species. This feature will be temporarily affected during the initial stages of the construction phase, but will be replanted in the first available planting season. A number of pipistrelles and Leisler's bats were observed commuting at height over built surfaces through the centre of the site (>10 metres), with no adherence to landscape features (see **Section 3.4.4.1**). It is likely that these individuals will continue to commute at height over the site during the construction phase.

The use of heavy machinery in the root zone of trees can cause damage to retained bat trees, resulting in increased tree morbidity and mortality. Equally, the use of machinery in proximity to trees can result in accidental damage to the trunk and branches of trees. In the medium and long terms this could result in the death of trees which provide bat roosting opportunities, alongside suitable localised foraging habitat.

Localised increases in noise and dust levels are likely to occur during the construction phase. In the absence of mitigation, these impacts could give rise to indirect negative effects on bat species roosting onsite. Noise will occur through the operation of machinery (excavation, pile driving, etc.). Dust may arise during construction works if dry soil or other material is allowed to become windborne.

In the absence of mitigation, the effect on bats as a result of the construction phase of the proposed development is considered to be a **short term, slight negative** effect following EPA (2022).

4.6.2 Operational Phase

Relative to the construction stage, no additional foraging habitat loss or loss of roosting features will occur during the operational phase. The measures included within the Green Infrastructure and Landscape Strategy (Fourem, 2025; see **Appendix C**) provided at the construction stage will continue to mature and increase in ecological value over time, partially offsetting the loss of mature trees and other vegetation features for foraging bat species.

The west-east commuting corridor along the southern boundary of the site that will be temporarily affected during the construction phase will be planted at the earliest feasible stage of construction and will continue to mature during the operational phase. This will be kept free of light spill (see **Figure 1.2**). All retained trees and foraging habitat will continue to mature and increase in ecological value over time.

Artificial light can cause disturbance to roosting, commuting and foraging bats. While all bat species have a low tolerance for light levels, some bat species are particularly sensitive to elevated light levels (brown long-eared bat, whiskered Bat, Natterer's bat, Daubenton's bat and lesser horseshoe bat) (BCI, 2010). While no definitive information on the acceptable level of artificial lighting on bats is available, <1 lux is considered to be a reasonable level of illuminance below which significant negative impacts on bats are unlikely to occur, at least for the least light-sensitive bat species. The species observed during activity surveys are considered light-tolerant to a degree (pipistrelles, Leisler's bat) with the exception of Brown Long-eared Bat.

O'Donnell Environmental Ecologists have collaborated with MHL Engineers to minimise the effect of external lighting on bat species in regard to no upwards light, avoidance of light on the southern commuting corridor, and reduced height of luminaires. Predicted light-spill associated with related lighting is shown as 'lux contours' in **Figure 1.2** which avoids identified flightlines. A number of pipistrelles and Leisler's bats were observed commuting at height over built surfaces through the centre of the site (>10 metres), with no adherence to landscape features. It is likely that these individuals will continue to commute at height following the installation of artificial lighting during the operational phase.

O'Donnell Environmental Ecologists collaborated with Fourem Architects to incorporate permanent roosting opportunities into the proposed structures, these are described in **Section 5**.

In the absence of mitigation, the overall effect on bats at the site and surrounding locality during the operational phase is considered to be **slight, negative** following EPA (2022).

4.7 POTENTIAL EFFECTS ON BIRDS

The below sections discuss the potential effects of the proposed development on birds in both the construction and operational phases.

4.7.1 Construction Phase

The assemblage of bird species recorded at the proposed site is typical of urban edge adjoining scrub and farmland within Ireland. The nature of the habitats present at the site, and the species recorded during the survey, indicate that the site is of high value for its breeding bird assemblage. Relevant wetland bird species associated with surrounding SPAs were not recorded interacting with the proposed site which was considered generally unsuitable due to the dominance of artificial surfaces, indicating that the site is of low value for wintering wetland birds.

Noise and visual effects arising from construction phase works have the potential to temporarily negatively affect foraging and roosting bird species locally.
The red-listed species Kestrel was identified to be nesting and wintering onsite within the old mill buildings complex (see **Figure 3.2**; **Appendix A12**). The proposed development will see the complete loss of this locally significant nesting site in the absence of targeted mitigation measures. Should works be carried out during the breeding season of this species, there exists potential for significant disturbance and abandonment of an active breeding attempt. A significant threat to Kestrel is the loss of nesting opportunities as they do not construct their own nests and rely on existing cavities.

The Amber-listed species Swallow was identified nesting within Eastville House (see **Appendix A8**) and are presumed to be nesting within other structures also including Rosehill House. The possibility of Swift (Red-listed), House Martin (Amber-listed) and House Sparrow (Amber-listed) nesting within structures cannot be ruled out entirely. The proposed redevelopment of Eastville and Rosehill House, alongside the other structures onsite, will see the loss of potential nesting opportunities for these species.

From the early stages in the design process O'Donnell Environmental engaged with Fourem Architects and Holly Arboriculture to reduce the impact of the proposed scheme through avoidance of loss in the first instance and prescribe mitigation and enhancement measures thereafter. As discussed in **Section 4.4.1**, the number of retained mature trees have been increased, reducing the overall total tree loss at the construction phase. This will nonetheless result in a reduction of nesting and foraging habitat locally. Should clearance works take place during the bird breeding season, disturbance and loss of nesting sites may occur.

If edible wastes are not disposed of appropriately during construction, this has the potential to attract avian scavengers to the site.

In the absence of mitigation, the overall effect on birds as a result of the construction phases of the proposed development is considered to be a **short term, slight negative** effect following EPA (2022).

4.7.2 Operational Phase

The operational phase of the proposed works will not result in any additional habitat loss relative to the construction phase. Relative to the current situation the operational phase of the proposed development will result in increased disturbance effects due to human activity and lighting. O'Donnell Environmental Ecologists collaborated with Fourem Architects to incorporate bird nesting features into structures throughout the proposed development to cater for Kestrel, Swift, House Martin, Barn Swallow and House Sparrow, in addition to other passerine species (see **Appendix C**). These measures are discussed in **Chapter 5**.

In the absence of mitigation, the overall effect on birds as a result of the operational phase of the proposed development is considered to be **slight, negative** following EPA (2022).

4.8 CUMULATIVE EFFECTS

While a single development may only result in a minor environmental impact, when considered in combination with other impacts it may result in a cumulative impact which could be considered significant (EPA, 2022).

Ecological Impact Assessment aims to determine what if any effects a proposed project would have on ecological conditions, relative to baseline conditions. As part of this process, the potential for cumulative effects is considered. Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location (CIEEM, 2022).

Projects to be considered in an assessment of cumulative effects would include the following types of future development within the same zone of influence:

- Proposals for which consent has been applied which are awaiting determination in any regulatory process (not necessarily limited to planning permission).
- Projects which have been granted consent (not limited to planning permissions) but which have not yet been started or which have been started but are not yet completed (i.e. under construction).
- Proposals which have been refused permission, but which are subject to appeal and the appeal is undetermined to the extent that their details are in the public domain.
- Proposed projects that will be implemented by a public body but for which no consent is needed from a competent authority (CIEEM, 2022).

In some situations, it may be necessary to also consider:

- Constructed developments whose full environmental effects are not yet felt and therefore cannot be accounted for in the baseline.
- Developments specifically referenced in a National Policy Statement, a National Plan or a Local Plan (draft or adopted) (CIEEM, 2022).

A review of the National Planning Database (NPD) was undertaken to identify proximal and relevant planning applications proximal to the study area. A search of planning applications within 1km of the site boundary within the last 5 years was undertaken 21st October 2025 and reviewed on 10th December 2025. **Table 4.1** below provides the results of this search. The locations of applications are shown in **Figure 4.1**.

A number of developments with potential for in-combination effects in association with the proposed development. Three large-scale residential developments (LRDs) have been granted planning permission within 1km of the proposed development. Maple Woods LRD (planning ref: 23/4450; ABP-317290-23) is located 240m southwest and comprises 125 residential units. The second LRD at Lakeview has been granted planning in four phases 610m north (planning refs: 21/7428; 22/4753; 22/6688; 23/5703) for a total of 265 residential units. The third LRD at Castleredmond (planning ref: 23/5707; ABP-318403-23) is located 400m north and comprises 270 residential units. An additional development comprising 89 residential units was granted planning permission outside of the 5-year search window (planning ref: 18/5691; ABP-303221-19) but was included as construction does not appear to be fully completed. A number of smaller scale residential and commercial developments exist within 1km also (e.g., 24/5386).

These developments will result in an increase in human disturbance, semi-natural habitat loss and foul water loading in conjunction with the proposed development. In order to avoid the current capacity

issues with Midleton WWTP, Maple Wood and Castleredmond LRDs propose a temporary wastewater treatment plant to cater for increased foul water loading until such time that upgrade works are complete on Midleton WWTP.

Overall, with the exception of foul water discharge during the operational phase (discussed further below), it is considered no other significant likelihood of cumulative or in-combination effects arise in relation to the proposed development such that an adverse effect on any Natura 2000 site would likely result.

Table 4.1 - Planning applications within the relevant search area.

Application Ref.	Development Description	Decision	Decision Date
245386	Permission for the construction of a residential development consisting of 12 no. residential housing units, the proposed development consists of 6 no. 1 bed units and 6 no. 2 bed units in two no. 2 storey blocks. Planning permission is sought for the de	Conditional Permission	21/02/2025
245718	Permission for the installation of a sewage treatment system for a dwelling house to replace an existing damaged septic tank, and for Planning Permission to Retain the following developments: 1) Single storey kitchen and WC extension to front of dwelling	Conditional Permission	04/11/2024
245655	Permission for the construction of a dormer style dwelling house and associated site works.	Conditional Permission	24/10/2024
235703	Permission for the following phase 4 residential development. Comprising the demolition of outbuildings associated with Lakeview House and the construction of 34 no. residential units (comprising a mix of 2 and 3 bed, detached, semi detached and terraced	Conditional Permission	25/06/2024
244578	Permission for the construction of a hip to gable attic roof extension, to convert attic to storage room including the introduction of front and rear roof windows and associated works.	Conditional Permission	28/05/2024
244434	Permission for retention of 1) front extension to existing ground floor kitchen area as constructed, 2) Permission for a new single storey granny flat extension (incorporating part of existing side extension) & modifications to the existing single storey	Conditional Permission	07/05/2024
244355	Permission for the construction of a first floor extension to the side of the existing dwelling including the introduction of roof windows and associated works.	Conditional Permission	22/04/2024
244357	Permission for the construction of a first floor and attic floor extension to the side of the existing dwelling including the introduction of front and rear roof windows and associated site works.	Conditional Permission	17/04/2024
244142	Permission to demolish the existing dwelling house and shed and to construct a new dwelling house and a new detached domestic garage (change of layout and design from that granted under Pl.Reg.No. 23/05647).	Conditional Permission	26/03/2024
235572	Permission to re-develop and re-purpose, existing farm and stable buildings together with overhead grain storage lofts and forge building, all centered around original stable/farm yard. The works will comprise of; 1) development of farm shop and coffee s	Conditional Permission	20/03/2024
236245	Install a new treatment unit and percolation area and all associated site works.	Conditional Permission	10/01/2024
235841	Permission to partially demolish the rear extension to existing public house, demolish existing domestic storage sheds & construct a new two-storey dwelling house and all associated site works.	Conditional Permission	13/12/2023
235647	Permission to demolish the existing dwelling house and shed and to construct a new dwelling house and a new detached domestic garage	Conditional Permission	14/11/2023
235799	Permission for 1) The demolition of an existing single storey glazed conservatory and the existing single storey front entrance porch; 2) The construction of a new extension on the footprint of the demolished conservatory; 3) Elevational alterations to t	Conditional Permission	26/10/2023

Application Ref.	Development Description	Decision	Decision Date
235707/ ABP-318403-23	Permission for the following Large Scale Residential Development (LRD) comprising of the demolition of existing wall into the Castleredmond estate and the construction of 270 no. residential units, 43 no. garden sheds, 1 no. creche, 3 no. ESB substations	Split decision	17/10/2023
235058	Permission for the construction of 3 No. dwelling houses and all associated ancillary development works including access, footpaths, parking, drainage and landscaping. Access to the proposed development will be via the vehicular access permitted to the n	Conditional Permission	04/09/2023
235249	Construct a single storey log cabin granny flat including link extension to the rear of the existing dwelling and all associated site works.	Conditional Permission	14/08/2023
234450/ ABP-317290-23	Permission for the following Large Scale Residential Development (LRD) comprising the construction of 125 no. residential units, 21 no. garden sheds, 1 no. creche, 2 no. ESB substations, a temporary wastewater treatment plant and all associated developme	Conditional Permission	08/05/2023
234317	The construction of a single storey extension to the side of the existing dwelling and all associated site works and site services.	Conditional Permission	14/04/2023
234040	Construction of a detached two-storey dwelling, waste water treatment system and all ancillary site works	Conditional Permission	06/03/2023
226400	Construction of a temporary wastewater treatment plant, modifications to the existing open space and all ancillary site development works. The temporary waste water treatment plant will service: (a) the 40 no. units permitted under Pl.Reg.No. 19/5876 and	Conditional Permission	14/02/2023
226688	Permission for the following Phase 3 residential development at Lakeview, Castleredmond, Midleton Co.Cork, comprising the construction of 35 no. residential units (comprising a mix of 2, 3 and 4-bed, detached, semi detached and terrace units) and all ass	Conditional Permission	07/02/2023
226105	Permission to convert his existing two-storey dwelling into 2no. two-storey dwellings, raise the roof level of the existing dwelling, construct a first floor extension over the existing single storey side extension, elevational changes and all associated	Conditional Permission	13/12/2022
224674	The construction of a single storey detached Montessori building, and all associated site works	Conditional Permission	11/08/2022
224868	To convert original stone-built farm-building to 2 No. holiday apartments, for short-term letting, including construction of new stairwell to rear of main block as well as all associated site development works.	Conditional Permission	19/07/2022
224753	Permission for the following phase 2 residential development at Lakeview, Castleredmond, Midleton, Co.Cork comprising the construction of 99 no. residential units (comprising a mix of 2,3 and 4-bed, detached, semi-detached and terraced units) and permiss	Conditional Permission	31/05/2022
217428	The construction of 97 no. residential units (comprising a mix of 2 ,3 and 4-bed, detached, semi detached and terraced units) and permission for the demolition of rear annexâ€™s associated with Lakeview House (protected structure Ref. RPS-00519) and the	Conditional Permission	26/05/2022
224466	a) Construction of a single storey detached granny flat, detached domestic shed (for uses incidental to the use and enjoyment of the dwelling) and all associated site works b) Retention of covered external patio and storage areas including blockwork peri	Conditional Permission	28/04/2022

Application Ref.	Development Description	Decision	Decision Date
216760	A 2 storey dwelling house, an on-site sewage treatment system and all associated site development works.	Conditional Permission	03/02/2022
215102	Permission consequent on the grant of outline permission Ref: No. PL. Reg. No. 19/6235 for construction of a dwelling house and demolition of existing shed, together with all other ancillary site works.	Conditional Permission	17/01/2022
216643	Permission for the retention of sundry changes to layout and elevations of existing farmyard accommodation comprising two (2no.) self-contained units, including such works as (1) retention of new window and door units and fenestration, (2) retention of n	Conditional Permission	11/01/2022
216939	Installation of a free standing 500mm x 750mm x 300mm (l x h x w) gas pressure reduction unit and 3.25m (h) vent stack, with all ancillary services and associated site works in the footpath	Conditional Permission	16/12/2021
216973	The upgrade of the entrance junction to the site, consisting of the widening of the entrance gateway from approximately 6m to approximately 11m and all associated works. Permission is also sought for the installation of approximately 180m of new, interna	Conditional Permission	16/12/2021
216725	The construction of an extension to the side and rear of the existing dwelling including the construction of a garage and associated works.	Split decision	01/12/2021
216737	Construction of a single storey extension to rear of existing dwelling and associated site works.	Conditional Permission	01/12/2021
216655	1.) The construction of a single storey extension (c.32 sq.m) to the side of an existing dwelling house. 2.) All ancillary site and landscaping works required to complete the development.	Conditional Permission	23/11/2021
216583	Permission for retention of (1) Single storey extension to front elevation and (2) Single storey porch extension to the front elevation as constructed to their dwelling house and all associated site works.	Conditional Permission	12/11/2021
216557	To construct a single storey extension and elevation alterations to existing dwelling house along with associated site works.	Conditional Permission	09/11/2021
216461	Permission for retention for partially built a) single storey extension, a garage, to the eastern side of the existing dwelling. b) an extension to the southern side of existing dwelling, and completion of same. Permission for retention for solar panels	Conditional Permission	28/10/2021
216389	Demolish a single storey kitchen annex at the rear of their house and to erect a new extension to the rear of their dwelling house. The new extension will be partially single storey and partially 2 storey. This development includes installing an addition	Conditional Permission	20/10/2021
215806	The construction of a first floor extension to the side of the existing dwelling including the introduction of roof windows and associated works.	Conditional Permission	20/08/2021
215798	1) the construction of a new two storey extension to the eastern elevation; 2) the construction of a first floor extension on top of the existing single storey accommodation to the western elevation; 3) elevational alterations to the existing facades to	Conditional Permission	18/08/2021
215422	Permission for Retention of; rear and side extensions to existing dwelling house, detached domestic garage and two domestic storage sheds in rear garden area.	Conditional Permission	13/07/2021
215335	Retention of the driveway and single-storey extension to the rear of the existing dwelling.	Conditional Permission	06/07/2021

Application Ref.	Development Description	Decision	Decision Date
214823	A change of use from permitted retail use to retail use including the sale of alcohol for consumption off the premises (i.e., off licence use) within the overall permitted retail unit, where the floor area for the off licence use is 10sqm and is ancillar	Conditional Permission	21/05/2021
214552	To construct a first-floor extension to the side of existing two-storey detached dwelling and construction of a single storey ground floor extension to the rear, along with alterations to the elevations and all associated site works.	Conditional Permission	26/04/2021
214504	To construct a first-floor side extension and single storey rear extension and elevational alterations to existing dwelling, along with 1 no. rooflight and 25 sqm area of PV panels to front elevation of dwelling including all associated site works.	Conditional Permission	15/04/2021
206975	The installation of one noise attenuation enclosure, consisting of a GRP enclosure (measuring approximately 4.85m high by 11.7m x 5m) with a flat GRP roof and a concrete base (approximately 12m x 5.5m) and associated ancillary facilities.	Conditional Permission	23/02/2021
206728	Construction of a first floor extension to the side of the existing dwelling house, new rooflights to the front and rear of the existing roof, and all associated site works.	Conditional Permission	02/02/2021
206618	To construct a single storey extension to the side and the rear of the existing two-storey detached dwelling, planning permission to carry out alterations to the ground floor level of the existing east elevation consisting of the installation of 2 window	Conditional Permission	27/01/2021
205838	Construction of a first floor extension to the side of the existing dwelling house, new rooflights to the front and rear of the existing roof, and all associated site works.	Conditional Permission	19/10/2020
ABP-306305-20	Retention of demolition of a boiler house, extension, construction of new extension, alteration to front door with a window, variation of ground levels and associated site works.	Conditional Permission	24/03/2020
185691/ ABP-303221-19	Construction of 87 houses, 2 apartments, a creche and all ancillary site development works.	Conditional Permission	19/06/2019

Note: 'Development Description' field was truncated by the Planning Authority when providing data to the NPD.

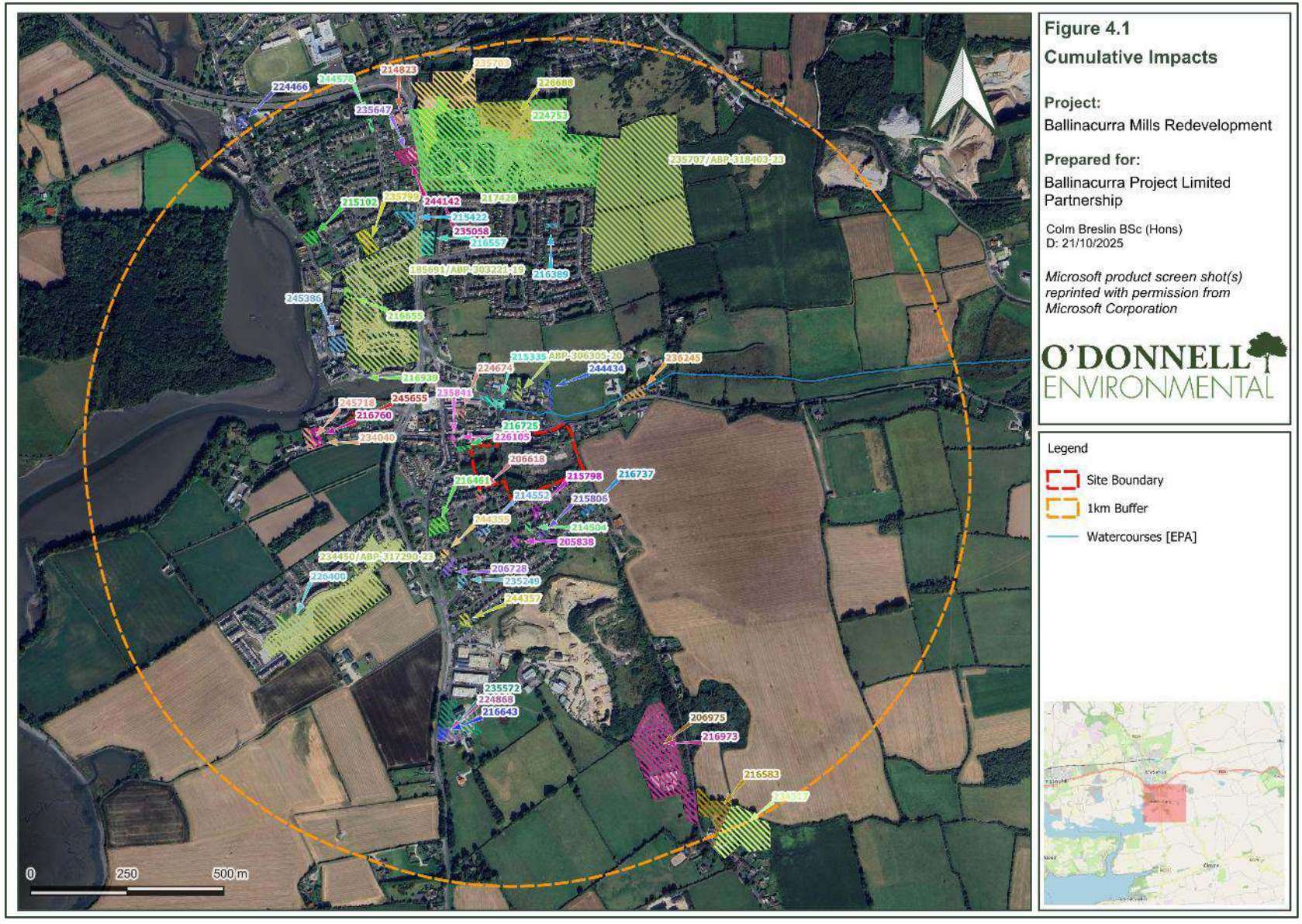


Figure 4.1
Cumulative Impacts
Project:
Ballinacurra Mills Redevelopment
Prepared for:
Ballinacurra Project Limited Partnership
Colm Breslin BSc (Hons)
D: 21/10/2025
Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation
O'DONNELL ENVIRONMENTAL
Legend
Site Boundary
1km Buffer
Watercourses [EPA]
0
250
500 m
224466
244578
214823
235703
226688
235647
224755
235707/ABP-318403-23
215102
235799
244142
217478
215422
235058
216557
185691/ABP-303221-18
216389
245386
216655
215335
ABP-306305-20
224674
244434
236245
216930
235841
245655
245718
216760
224040
216725
226105
206618
216461
215798
216737
214552
215806
244359
214504
205838
234450/ABP-317290-23
206728
226400
235249
244357
235572
224868
216643
206975
216973
216583
234017

5 Avoidance and Mitigation Measures

Avoidance and mitigation measures in relation to potential impacts identified above are discussed below. A mitigate-by-design approach was followed in the design of the current project, and O'Donnell Environmental collaborated with Fourem Architects, Holly Arboriculture and MHL & Associates Consulting Engineers in order to mitigate by design where possible. See **Table 5.1** for a summary of ecological mitigation measures.

5.1 SURFACE WATER

Measures for the protection of local surface water during the construction and operational phases are outlined below.

5.1.1 Construction Phase

Surface water infiltration was noted to be low across the site (MHL, 2025c). Runoff from the proposed site currently discharges largely to ground, with surface water flow on areas of hardstand intercepted by the municipal drain network of surrounding public roads, eventually discharging into the West Ballynacora Stream and ultimately Cork Harbour. There was no visible evidence of natural surface water pathways within the proposed development boundary.

The CEMP (MHL, 2025a) outlines standard surface water control measures during the construction phase of the proposed development following best practice outlined in CIRIA (2010; 2015), ISO 14001:2015, and C741 Environmental good practice on site guide (4th edition). These surface water control measures will be subject to daily checks and logging system maintained. These industry standard measures are considered sufficient to reduce the risk of significant negative surface water effects arising as a result of the construction phase of the proposed development.

5.1.2 Operational Phase

The site is not at risk of fluvial or coastal flooding (MHL, 2025b). Sustainable Drainage System (SuDS) protocols will be implemented to ensure a high standard of surface water runoff from the proposed development, as outlined by the accompanying Drainage Impact Assessment Report (MHL, 2025c). The proposed development will utilise permeable grasscrete paving, tree pits, water butts and attenuation tanks which will be entirely separate to the wastewater system.

The proposed development will be split into three sub-catchments, with a total of six attenuation tanks. The overall attenuation system is designed with a controlled flow rate of less than the greenfield run-off rate for the catchment area and will cater for storm return period of 1 in 100 year and with a 20% climate change factor. All networks will eventually discharge into two outfalls along Rose Lane. Each local network will be fitted with grit-sump manholes, silt traps and hydrocarbon interceptors. Overall, the maximum discharge rate from the proposed has been restricted to considerably less than the calculated permissible runoff for the site (mean annual peak flow 'QBAR').

5.2 FOUL WATER

Measures for the protection of local foul water during the construction and operational phases are outlined below.

5.2.1 Construction Phase

Temporary welfare facilities will be provided during the construction phase of the proposed development. All foul water will be removed offsite by an approved contractor. No other measures are considered warranted to control foul water during the construction phase.

5.2.2 Operational Phase

Foul water will be conveyed to Midleton WWTP for treatment, prior to discharge to Cork Harbour. The 'Annual Environmental Report' from 2023 notes that Midleton WWTP was non-compliant with Emission Limit Values (ELVs), specifically faecal coliforms, with no remaining organic capacity (PE) (Uisce Éireann, 2023). In the absence of mitigation, the operational phase of the proposed development will add additional loading on the over-capacity Midleton WWTP, resulting in significant negative impacts on water quality in Cork Harbour.

The Engineering Design Report (MHL, 2025b; see **Appendix C**) states, in order to accommodate the proposed connection, upgrade works are to create additional capacity in the wastewater treatment system. Two projects are currently being progressed by Irish Water to provide the additional wastewater treatment capacity. Uisce Éireann has confirmed that following these upgrades there will be sufficient capacity to adequately process the additional input from the operational demand of the proposed development.

As outlined within the accompanying Natura Impact Statement (O'Donnell Environmental, 2024) the proposed development will not be occupied until such time that upgrade works are completed by Uisce Éireann and capable of appropriately treating the additional wastewater loading.

5.3 HABITATS AND FLORA

Avoidance and mitigation measures to address identified potential negative effects on habitats and flora during the construction and operational phase of the proposed development are detailed below.

5.3.1 Construction Phase

5.3.1.1 Invasive Species

No alien invasive plant species (AIPS) listed on the 3rd Schedule of the EC (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011) were found to be present on the proposed site. Butterfly bush was present throughout the site, and this common species readily colonises such brownfield sites. Biosecurity measures are proposed within the CEMP (MHL, 2025a) to prevent the introduction of AIPS onsite, in particular those listed on the 3rd Schedule of the EC (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011).

5.3.1.2 Trees

From the early stages in the design process O'Donnell Environmental engaged with Fourem Architects and Holly Arboriculture to reduce the impact of the proposed scheme through avoidance of loss in the first instance and incorporate mitigation and enhancement measures thereafter. Cork County Council were consulted during the Section 32B pre-planning process, including Ecologist Joy Barry, on landscape design and retention of mature trees.

Following this, the number of mature trees retained was increased from 7 to 16, mostly surrounding Rosehill House. The number of individually tagged mature trees proposed for removal subsequently dropped from 42 to 33, thus reducing the number of overall trees lost from 154 to 145. A large proportion

of trees to be lost comprise early-mature self-seeded specimens and non-native species of lower ecological value.

In the absence of a biodiversity calculator in an Irish context, the Bristol Tree Replacement Standard (BTRS) calculator was utilised to define the number of new trees required to compensate for tree loss. This calculator was originally created to quantify the number of replacements for any trees that are removed for developments. Tree details (i.e. trunk diameter) were put into the calculator, adding an additional 10% biodiversity net gain as recommended by the Bristol Tree Forum[9]. A total of 391 trees was calculated. As part of the proposed landscaping (Fourem, 2025; see **Appendix C**), approximately 402 new trees are proposed to be planted within the development boundary, consisting of 103 street trees, 119 garden trees, and c. 180 boundary trees. This exceeds the requirement to achieve 10% biodiversity net gain in relation to trees. This planting, in addition to the 16 retained mature trees, totals 418 trees across the site. Full planting specifications are outlined within the Green Infrastructure and Landscape Strategy (Fourem, 2025; see **Appendix C**).

Full details of protection measures for retained vegetation are outlined in within the accompanying Tree Impact Assessment Report and Tree Protection Plan (Holly Arboriculture, 2025a; 2025c; see **Appendix B**). Boundary habitats and trees to be retained will be fenced off prior to the commencement of works to protect from accidental ingress and damage to the root zone. Where the proposed development encroaches upon retained trees, 'no-dig' construction areas have been designated and arboricultural monitoring required during works in these areas.

5.3.1.3 Bee Orchid Meadow

Bee orchid was identified within the southeastern portion of the proposed development. The distribution of the species was recorded by GPS during surveys carried out by O'Donnell in June and July 2023 (see **Figure 3.2**). O'Donnell Environmental collaborated with Suzanne Noble of British Orchids to create a bespoke mitigation strategy for this species. All mitigation pertaining to bee orchids must be carried out by a suitably qualified Ecologist. Please refer to the Green Infrastructure and Landscape Strategy (Fourem, 2025; **Appendix C**) for locations of 'bee orchid meadows'.

Bee orchids should be lifted only once and replanted on the same day they are lifted. This may not be feasible during the construction of the proposed development, as the proposed replacement final 'bee orchid Meadows' will not bcreated prior to the site clearance stage. The optimal strategy in this instance is the transfer of bee orchids to a temporary safe location for the construction phase, followed by a second transfer to the final 'bee orchid Meadow' once the site is suitably prepared.

Prior to the commencement of the construction phase, a suitably qualified Ecologist will resurvey the site and mark the maximum extent of all bee orchid areas (including diminutive immature individuals).

Bee orchids must be lifted and replanted between October and March while they are dormant. Individual plants and their rootballs (may include immature plants) will be lifted by hand using a trowel to a radius of 100mm from the rosette centre and a depth of 200mm to avoid damage. Weeds will be removed from each rootball. Topsoil within and surrounding the bee orchids original location will be collected using a hand spade for use in the temporary and final location, ensuring no invasive species are present (e.g., butterfly bush). Soil from the original location will contain mycorrhiza necessary for the colony to self-sustain into the future.

[9] https://bristoltreeforum.org/2022/06/07/our-proposal-for-a-new-bristol-tree-replacement-standard/

All bee orchids that have been lifted will be transferred to a temporary, undisturbed location with appropriate light and drainage for the duration of the construction phase. The temporary location must be of suitable soil characteristics (outlined below) that match the current location. This location will be decided by a suitably qualified Ecologist. Soil collected at the original location will be transferred to the new location prior to replanting. To replant bee orchid, holes large enough to accommodate the rootball will be dug by hand and use soil from the original location within and around the edges, ensuring the rootball is level with the ground.

The temporary bee orchid location must receive full sun, poor soil pH 7.5 – 8.0, good drainage (gritty) and little competition from other plants. The surrounding vegetation needs to be sparce and low growing. Areas of robust grasses, nettles docks etc. will be strictly avoided. The conditions of the temporary location will be assessed by a suitably qualified Ecologist prior to translocation and will be moved to another portion of the site if deemed unsuitable. The temporary location will be managed as outlined in **Section 5.3.2** below if deemed necessary by a suitably qualified Ecologist.

The final 'bee orchid meadows', proposed for the northeast corner of the site, must be created atop a bank of well-drained, calcareous rock or rock-like substitutes, with a thin layer of infertile soil pH 7.5 – 8.0 on top. The rock bank core must be of calcareous rock or hardcore free from organic material or contaminants. Crushed concrete or brickwork from building demolition may be reused for this purpose. The rock must be well-graded (passing through 100mm diameter ring) and laid in compacted layers no more than 150mm thick. The thin layer of soil should be no more than 100mm thick. The soil from the original location should be reused for this purpose. Imported topsoil will be strictly avoided in 'bee orchid Meadows'. A native wildflower and grass meadow mix may be sown within the 'bee orchid Meadow' in September / October at a rate of 4g/sqm. This mix must be decided in consultation with a suitably qualified botanist. Strictly no non-native grass mixes (e.g., ryegrass spp.) are to be sown within wildflower areas.

Once the final 'bee orchid Meadows' have been created, all individuals will be transferred for the second and final time from the temporary location following the criteria above. The conditions of the final location will be assessed by a suitably qualified botanist prior to translocation and will be moved to another portion of the site if deemed unsuitable. Suitable low-level fencing and signage will be erected at all 'bee orchid Meadows' and other wildflower meadow areas to prevent picking and trampling.

Within both the temporary and final locations, seeds may be collected from bee orchids from end-August onwards each year and may be used to sow across the site or donate to new locations.

The final location 'bee orchid Meadow' will be managed for the operational phase as outlined in **Section 5.3.2** below.

5.3.1.4 Wildflower Meadow

Designated wildflower meadows will be created following guidance outlined by the All-Ireland Pollinator Plan. This meadow will be established at the earliest feasible stage during the construction phase and will be fenced off for the duration of works to avoid accidental ingress (see 'Ground Cover Planting Diagram' in **Appendix C**; Fourem, 2025).

This area will be established where feasible by selection of appropriate nutrient poor topsoil and natural regeneration the soil's existing seed bank, following guidance provided by the All-Ireland Pollinator Plan. An Ecologist will be consulted regarding the sourcing of soil and the establishment of wildflower meadow.

Commercial wildflower seed mixes will not be used as they can contain non-native and potentially invasive species which displace native flora if sown in the wild. Furthermore, they run the risk of introducing pests, diseases and new genetic strains which may displace or compromise the local, naturally occurring flora. If required and if a suitable source is available, wildflower seed of native and local provenance may be utilised following consultation with a suitably qualified Ecologist.

Herbicide and fertiliser use will be eliminated entirely for the management of the site and will not be applied to the proposed wildflower meadows and adjacent areas.

5.3.1.5 Other Measures

In addition to the above measures, flowering lawns will be utilised as the standard green area cover alongside ground cover pollinator shrub planting and woodland. Native hedgerow and treeline planting will be incorporated along the southern and western site boundaries (see 'Ground Cover Planting Diagram' in **Appendix C**; Fourem, 2025).

5.3.2 Operational Phase

Landscaping will be maintained appropriately during the operational phase. Full details of 'bee orchid Meadow' and other wildflower meadow management are outlined below. This pertains to both the temporary and final 'bee orchid Meadow' locations.

Strictly no fertiliser or herbicides will be applied to the 'bee orchid Meadow', wildflower meadow or flowering lawns. The 'bee orchid Meadow' will not be cut or managed between 1st April and 1st September. This will enable flowers to mature and release seed each year. The meadows will be subject to an annual 'cut and lift' once a year in September. Cutting blades will be set to high to avoid damaging bee orchid rosettes. All cuttings will be strictly removed from the meadows. Cuttings must be removed as they introduce nutrients that are non-beneficial for bee orchids and prevent new seedlings from coming through.

Suitable low-level fencing and signage will be erected at all 'bee orchid Meadows' and other wildflower meadow areas to prevent picking and trampling.

Post-construction monitoring will be carried out as outlined within **Section 5.9** below to ensure successful implementation of mitigation outlined above.

5.4 NON-VOLANT MAMMALS

Measures for the protection of non-volant mammal species during the construction and operational phases are outlined below.

5.4.1 Construction Phase

Localised increases in noise and dust levels are likely to occur during the construction phase. In the absence of mitigation, these impacts could give rise to indirect negative impacts on non-volant mammal species present in the local environment. The CEMP proposes standard control measures considered sufficient to control temporary negative dust effects (MHL, 2025a).

Deep excavations with potential to entrap mammals during the construction phase will be provided with a suitable means of escape such as hessian netting.

During construction works will generally take place during daylight hours only (7am-7pm) (MHL, 2025a). Where lighting during darkness is required for health, safety or security reasons, it shall be suitably

cowled and directed away from sensitive ecological features including retained treelines and vegetation. No site lighting will be left on overnight. These measures are considered sufficient to minimise any adverse impacts on foraging and commuting non-volant mammals in the construction phase.

5.4.1.1 Hedgehog

Hedgehog was identified on the site in proximity to Rosehill House and this area of the site offers scrub and other habitats likely to be of use to hedgehog (see **Appendix A9**). All clearance of scrub and other non-woody vegetation surrounding Rosehill House or where otherwise specified will be carried out with hand tools under the supervision of an Ecologist to reduce the risk of hedgehog mortality. Hedgehogs are particularly susceptible to clearance works during the winter months due to their delayed response while in hibernation. Should hedgehog be encountered during clearance works, individuals will be translocated to a suitable nearby location offsite.

To replace the loss of potential hibernacula sites for hedgehogs within the site, **two 'Schwegler hedgehog Dome with insulated base'** will be placed within the boundary native hedgerow planting in suitably undisturbed locations alongside a small degree of deadwood habitat supplied from the felling of native trees within the site. Hof (2009) found that the presence of a pile of dead wood and a hedgehog nest box were positively related to the presence of hedgehogs in an area.

5.4.2 Operational Phase

Native tree and hedgerow planting along the southern and northwestern boundaries will be established at the earliest possible stages as specified within the Green Infrastructure and Landscape Strategy to retain connectivity for hedgehog and other non-volant mammal species through the site (see 'Ground Cover Planting Diagram' in **Appendix C**; Fourem, 2025). Light spill will strictly avoid this commuting corridor (see **Figure 1.2**). Garden fencing along this corridor will be constructed of post & rail in order to facilitate commuting small-mammals such as hedgehog.

Proposed landscape measures will continue to mature and increase in ecological value over time, retaining a degree of foraging and commuting habitat for mammal species. Retained trees will continue to mature and increase in ecological value over time.

5.5 BATS

Measures for the protection of bat species during the construction and operational phases are outlined below.

A Regulation 54 Derogation (i.e. derogation licence) has been granted by the National Parks and Wildlife Service to permit works which will disturb roosting bats during the proposed development (Ref: DER/BAT 2025-227) (see **Appendix D**). This licence is valid until 31st December 2025, following which a renewed licence will be sought prior to the commencement of works. NPWS guidance[10] advises Public Authorities that "*It may be appropriate to ensure, by means of a condition to a consent, that the applicant acquires a revised derogation prior to the commencement of the relevant works*".

No works affecting structures or trees where bat roosting may occur will be carried out unless a valid derogation license is in place and all relevant measures have been complied with. All measures stipulated within the licence application report and licence conditions will be strictly adhered to during both the construction and operational phases.

[10] NPWS (2025). Applications for Regulation 54 Derogations for Annex IV Species.

5.5.1 Construction Phase

Mitigation measures to be applied for bat species are discussed separately below.

5.5.1.1 General Measures

During construction works will generally take place during daylight hours only (7am-7pm) (MHL, 2025a). Where lighting during darkness is required for health, safety or security reasons, it shall be suitably cowled and directed away from sensitive ecological features including retained treelines and vegetation to avoid light spill during the active bat season (April-October inclusive). No site lighting will be left on overnight. These measures are considered sufficient to minimise any adverse impacts on roosting, commuting and foraging bats in the construction phase. A number of pipistrelles and Leisler's bats were observed commuting at height over built surfaces through the centre of the site (>10 metres), with no adherence to landscape features (see **Section 3.4.4.1**). It is likely that these individuals will continue to commute at height over the site during the construction phase.

The use of heavy machinery in the root zone of trees can cause damage of woodland habitat and trees, resulting in increased tree morbidity and mortality. Equally, the use of machinery in proximity to trees can result in accidental damage to the trunk and branches of trees. Where the proposed development encroaches upon portions of woodland habitat and tree groups, no-dig construction areas have been designated and arboricultural monitoring required during works in these areas to ensure no impact to trees and therefore foraging habitat for bat species within and proximal to the proposed development (Holly Arboriculture, 2025a).

Undisturbed native hedgerow planting along the southern and northwestern boundaries will be established at the first planting season following the commencement of works as specified within the Green Infrastructure and Landscape Strategy to retain connectivity for bats through the site (see 'Ground Cover Planting Diagram' in **Appendix C**; Fourem, 2025), in addition to retained trees. No lighting will illuminate this dark corridor (see **Figure 1.2**).

5.5.1.2 Structures

Both seasonal restriction for bats and breeding birds within each structure (i.e., Eastville House) must be considered for demolition timeframes to ensure no conflict arises between taxa (e.g., demolishing Eastville House while swallows are nesting during the bird breeding season).

Two 'non-significant' bat roosts were identified during the course of surveys within Rosehill House and Eastville House (see **Section 3.3.1**) and will be lost to roosting bats as a result of the proposed development. No significant roosting (e.g., maternity) was identified within the development site. Given that ecological baselines will shift over time, a repeat survey will be carried out prior to commencement of works to validate that the ecological context of the sites as described herein remains valid. A bat licensed Ecologist will be engaged to carry out pre-construction surveys of the known bat roosts within Rosehill House and Eastville House, with cognisance to appropriate survey effort and timing relative to identified roosting suitability as outlined in Collins (2023).

No roosting was observed within the mills building complex, service tunnels, former and occupied residences although non-significant roosting cannot be entirely discounted from these structures. These structures will additionally subject to be pre-construction surveys with cognisance to appropriate survey effort and timing relative to identified roosting suitability as outlined in Collins (2023) to ascertain if bat roosting occurs at that time. Three emergence surveys will be conducted on the occupied residence. Dependant on the results of surveys, additional measures may be required (e.g. no works during the maternity season in the event a maternity roost has formed on site in the interim).

Structures onsite provide a wide range of roosting opportunities for bat species. Reason and Wray (2023) outline the optimal timing of works of known bat roosting structures as spring and autumn. No summer restrictions are considered warranted for any structure onsite based on current information (i.e., no maternity roosting onsite), provided no conflicts arise during the nesting season in relation to birds nesting within structures (i.e., swallow within Eastville House).

Survey of Rosehill House was limited due to structural degradation, and it is possible that hibernation occurs here. Based on this, no demolition, roof removal works etc. will commence at Rosehill House during the core winter months of December to February inclusive to avoid impacts on any bats that may be hibernating within and unable to move out of harms way. No winter restrictions are considered warranted for Eastville House, mills complex, or the former and occupied residences which are more accessible for survey or have limited roosting potential.

A bat-licensed Ecologist will be engaged to provide a toolbox talk on site at commencement of demolition works on all structures and to supervise such works. The removal of critical structural features for bats (e.g. roof tiles, fascia-soffit) will be carried out with hand tools to minimise the potential impact to any bats roosting within. The extent to which hand tools will be required will be decided by the bat-licensed Ecologist during the course of demolition works. As an additional deterrent measure, illumination may be installed by a bat-licensed Ecologist in advance of proposed demolition to deter bats from roosting. The lighting will be first illuminated at night when bats are active and have left the roost.

Should any bats be encountered or identified in previously unknown structures, works will be immediately stopped and amended derogation licence sought from the NPWS. Any bats encountered in known structures will be relocated to the nearby bat boxes installed in advance of demolition as outlined in **Section 5.5.1.4** below.

5.5.1.3 Trees

A number of trees onsite are proposed for removal, of which a portion display 'PRF-I' and 'PRF-M' roosting features, although no roosting was identified at the time of surveys (see **Figure 3.3** for locations; **Table 2.2** for definitions). A total of two 'PRF-M' and thirteen 'PRF-I' trees are proposed for removal (see **Table 3.4**).

PRF Aerial Inspection surveys following Collins (2023) will be undertaken on all 'PRF-M' suitability trees in advance of any tree removal or other tree works. These surveys will be undertaken by a bat-licensed ecologist and ladder where suitable on specific features (Tag no. 2652, 2655). Where unsuitable for ladders, or where PRFs were present at height (Tag no. 2642, 2626), dedicated aerial inspection surveys will be undertaken using certified tree climbers under supervision of a bat-licensed ecologist. Aerial inspections of PRFs are considered favourable to emergence surveys (Collins, 2023).

The remaining 'PRF-I' trees will be checked by a bat-licensed Ecologist at a minimum prior to felling to ensure no roosting bats are present. 'Soft-felling' will be carried out under supervision of a bat-licensed Ecologist with trees lowered to the ground and left undisturbed for a minimum of 24 hours post-felling to enable any potentially concealed roosting bats to escape. In the event roosting by bats is identified, no felling will occur until an amended derogation licence is in place from the NPWS.

5.5.1.4 Artificial Roosting Locations

O'Donnell Environmental have engaged with the Fourem Architects throughout the planning process in order to mitigate-by-design any potential negative effects that may arise on bat species as a result of the proposed development.

A total of **four Schwegler Bat Box 1FD** will be installed in two pairs on suitably undisturbed and retained mature trees within the western portion of the site prior to the commencement of demolition works in order to accommodate any bats potentially encountered. These boxes will be a temporary measure and removed on completion of construction works to avoid potential disturbance (e.g. vandalism) during the operational phase.

In order to permanently mitigate the loss of non-maternity roosting locations in trees and structures, **11** artificial bat boxes will be incorporated into structures throughout the site. A mixture of **Schwegler Bat Winter Roost 1WI** and **Schwegler Bat Winter Roost 2WI** bat boxes **with rear panel attachment** will be incorporated into structures (see 'Bat and Bird Box Location' drawing in **Appendix C** for locations; Fourem, 2025). These box types are designed to cater for both summer and winter roosting requirements for bat species.

A bat-licensed Ecologist will supervise the installation of bat boxes, in order to verify correct placement and installation. No ongoing maintenance is necessary for this design of artificial bat box. These bat boxes must be placed a minimum of 3m from ground level. The location of bat boxes was decided such that the roost entrance is not illuminated from proximal lighting and placed in an area with connectivity to the surrounding landscape in the form of vegetation. A portion of boxes have been located within dark areas in the centre of the proposed development. High-flying species such as pipistrelles and Leisler's bat as identified in **Section 3.4.4.1** are considered capable of utilising these roosting features. A mixture of northern and southern aspects will be utilised to provide a range of roosting environments for bat species. See **Plate 5.1** for example location of bat boxes on structures.

Plate 5.1 - Example of location of externally mounted bat box on structures.
Adapted from Drawing No. 02.04 (Fourem Architects).

In addition to bat boxes, the outbuildings of Rosehill House and the Kiln Building of the mills complex are proposed to be adapted to facilitate bat roosting within the roof structures following guidance outlined in Day et al. (2021). Permanent access to the new roosting location will be facilitated via the provision of dedicated bat-access tiles (see **Plate 5.2**) or other similar suitable alternative to be determined in consultation with a bat-licensed Ecologist. No artificial lighting will conflict with the location of bat access points. The use of bat-safe construction materials may only be used within these spaces. Underlay within any areas of attic to which bats may have access (i.e. the areas above the proposed roost) at least must use only traditional bitumen felt (1F). Any timbers must be pressure treated offsite.

Onsite application of wood preservative should be avoided, and if necessary, only products certified to be 'bat safe[11]' will be used. Water tanks within the attic spaces will be covered to prevent drowning.

Plate 5.2 - Example of a lead bat access tile (Photo: Tom O'Donnell).

The bat-licensed Ecologist will carry out a final inspection to confirm that these roosting spaces have been provide as outlined herein. The report will confirm that the dedicated attic roost is appropriately constructed, that bats should not encounter modern roofing membranes in any part of the structures and that bat access points have been appropriately located and installed.

5.5.2 Operational Phase

External lighting, largely in the form of street lighting is proposed for the development. O'Donnell Environmental Ecologists have collaborated with MHL & Associates Consulting Engineers to minimise the effect of external lighting on bat species. The light sources used for external lighting (including subsequent replacements) will be designed with cognisance of ILP (2023) and will be downward facing and specified as follows (including subsequent replacements):

- LEDs will be used, as these emit minimal ultra-violet light.
- White and blue wavelengths will be avoided; wavelength will be <2,700 kelvin.
- Lights will peak higher than 550nm.
- Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, have been specified. Luminaires should always be mounted horizontally, with no light output above 90° and/or no upward tilt.

O'Donnell Environmental engaged with the project designers to minimise lighting effects as much as possible (MHL, 2025b). Minor estate roads will receive reduced 'P4' lighting classification (Average 5 Lux; Minimum 1 Lux) relative to the remainder of the site which will receive 'P3' lighting classification (Average 7.5 Lux; Minimum 1.5 Lux). Luminaire height has additionally been reduced from 10m to 6m on minor estate roads, which will facilitate high-flying bat species to continue commuting over the site

[11] https://www.gov.uk/government/publications/bat-roosts-insecticides-and-timber-treatments/timber-treatment-products-suitable-for-use-in-or-near-bat-roosts

(see **Section 3.4.4.1**). When illuminated, the disturbance due to light spill associated with external luminaries is predicted to be significant but localised in extent. Luminaries were additionally relocated to avoid light spill along the southern boundary commuting corridor (see **Figure 1.2**).

In addition to the above construction-related measures, the landscape measures provided at the construction stage will continue to mature and increase in ecological value over time, retaining a degree of foraging and commuting habitat for bat species. Retained trees will continue to mature and increase in ecological value over time.

5.6 BIRDS

Measures for the protection of bird species during the construction and operational phases are outlined below.

5.6.1 Construction Phase

Nesting by multiple bird species have been identified within the site. Hedgerow and tree clearance, alongside demolition of any structures containing nesting bird species should preferentially take place outside the breeding bird season. Section 40 of the Wildlife Act 1976 (as amended) makes provision for the clearance of vegetation (e.g. hedgerows) within the bird breeding season (defined as 1st March to 31st August inclusive) where the works are required to facilitate permitted construction activity.

It is an offence under Section 22 of the Wildlife Act 1976 (as amended) to wilfully destroy, injure, or mutilate the eggs or nest of a wild bird or to wilfully disturb a wild bird on or near a nest containing eggs or un-flown young birds at any time of the year. Where demolition of structures or vegetation clearance works are required during the bird breeding season, these features will be inspected in advance by a suitably experienced Ecologist to identify if active bird nests are present. If a nest is discovered, an exclusion zone will be installed at a distance appropriate to the species concerned. No demolition of structures or vegetation clearance works are permitted within this exclusion zone once established.

Detailed mitigation measures attributed to specific species are detailed below. The following design information was composed following consultation between O'Donnell Environmental Ecologists and Fourem Architects in order to mitigate-by-design the loss of nesting features for sensitive bird species. Nest box spacing was specified with cognisance to Serrano et al. (2017).

5.6.1.1 Kestrel

Kestrels were identified nesting on the eastern aspect of the Malt House complex within an old fireplace and successfully fledged two chicks during the summer of 2023. An individual was observed flying into the mills complex in winter 2024/2025 and is likely wintering within the site also. This nesting site is considered locally significant due to dramatic recent declines of this red-listed species (Gilbert et al., 2021).

In order to avoid mortality of kestrel and their chicks, no structural/demolition works may take on the mills complex during the bird breeding season if an active breeding attempt by the kestrel pair is underway. In order to avoid disturbance and potential abandonment of the nest, no significant demolition works may take place within the sightlines of this nesting location during the breeding season, until such time that the young have fully fledged and the nesting attempt is complete.

The original nesting location will unavoidably be lost due to remediation works. Provision of a replacement nesting site is proposed on the western aspect, utilising **one** '**Schwegler Kestrel Nest Box 2TF'** fixed within one of the window recesses (see green **Plate 5.3;** 'Bat and Bird Box Locations'

drawing in **Appendix C**). The eastern aspect following remediation works is considered no longer suitable for kestrel due to the number of proximal balconies which will introduce significant visual disturbance. The western aspect is predicted to experience significantly less human disturbance. This measure will be established at the earliest feasible stage of the construction phase.

A mixture of moist, coarse sawdust, wood shaving or washed sand will be placed within the nest box during installation to provide suitable nesting substrate for kestrel. Additionally, some of the nesting substrate from the original nesting site may be translocated into the nesting box also. No external lighting must be directed onto the kestrel nest box.

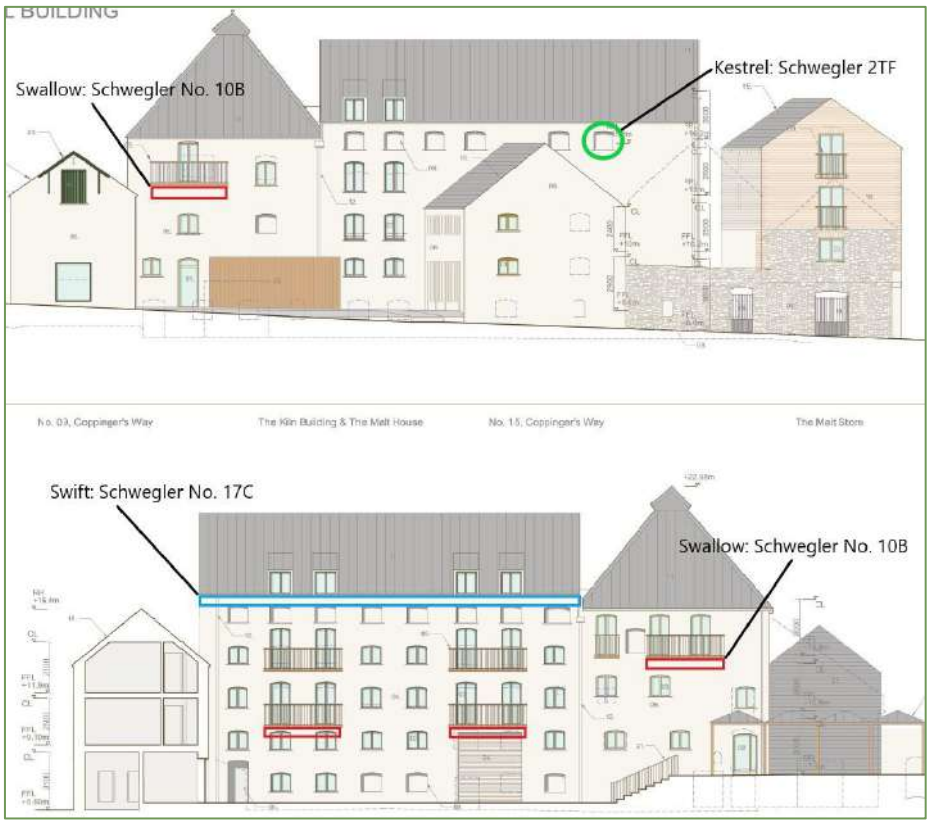


Plate 5.3 – Proposed locations of artificial Kestrel (green), Swift (blue) and Barn Swallow (red) artificial nests on the eastern and western aspects of the Malt House and Kiln Building complex. *Adapted from Drawing No. 03.07 (Fourem Architects).*

5.6.1.2 Swifts

Artificial nest boxes for Swifts are a useful measure provided they are placed in the right location. These are proposed for the western aspect of the Malt House complex (see blue **Plate 5.4**; 'Bat and Bird Box Locations' drawing in **Appendix C**). It is always preferable to incorporate nesting places into a built structure as opposed to external fixings as these fit seamlessly into building exteriors. It is important to note that a call attraction system placed adjacent to any nest boxes is vital to attract any new swift nesting attempts. This will require consideration for electrical fixing. Swift song (available on request) will be played through these speakers during the Swift breeding season. Once a nest box is confirmed to be occupied, this speaker does not need to be played further.

The following are key aspects that must be achieved to create viable artificial nest sites for Swift:

- Box should be a minimum of 4.5m above ground level.

- A clear flyway (space around the entrance) must be kept around nest sites.
- Southerly aspects, or any aspect that will receive a full summer sun must be avoided to prevent heat-induced mortality of chicks.
- Multiple nest boxes must be provided at any location as Swifts are colonial nesters. This can be achieved most effectively with multiple cavity nest boxes.
- Entrance to be no bigger than 30mm x 65mm (most commercially available swift boxes meet this criteria).
- Call attraction system must be played from mid-April to end August for as long as possible throughout the day.
- Nest boxes are not to be placed on top of one another as this can lead to collisions when entering nests.
- No external lighting must be directed onto any artificial swift nests as this blinds both parents and fledging chicks and can induce mortality through predation and grounding due to disorientation while entering and exiting.

A minimum of **20 Schwegler No. 17C with the Irish entrance hole size** Swift nest boxes will be mounted on the western aspect of the Malt House.

An Ecologist will be consulted during construction to ensure the artificial nests are installed as specified.

5.6.1.3 Barn Swallow

Barn swallow were identified nesting at a minimum in Eastville House (see **Appendix A8**). While nesting by this species has not been confirmed in other locations, it cannot be entirely ruled out due to the extensive nature of the structures onsite. This nesting location will be unavoidably lost as a result of the proposed development. This species typically nests underneath sheltered overhangs. Should an active nesting attempt be observed, no demolition works may be carried out onsite until such time that the young have fully fledged and the nesting attempt is complete.

In order to compensate for this loss of nesting, the underside of balconies on the Malt House and Kiln Building complex will be utilised for the installation of artificial swallow nest cups. A total of **ten Schwegler No. 10B** nest cups will be installed in these locations (see red **Plate 5.4**; 'Bat and Bird Box Locations' drawing in **Appendix C**). The siting and design of swallow nest cup locations follow best practice guidance outlined by OMNRF (2016).

Three nest cups will be used per balcony on the western aspect, and a single nest cup on the eastern aspect (see red **Plate 5.3**). Waterproof sheeting material will be installed on the underside of the balcony above the artificial nest cups. This will avoid any potential water ingress from above and serve to break any potential sightlines between the nests and residents occupying balconies above.

Three square cells spaced across the width of each balcony will be created utilising wooden hanging beams approximately 200mm in height and fixed to the underside of the balcony. A single nest cup will be installed per square cell. Sightlines between nesting pairs will be broken utilising these wooden hanging beams, thus facilitating higher density nest spacing. A 60mm vertical gap will be provided between the balcony structure and the top of the nest cup.

An Ecologist will be consulted during construction to ensure the artificial nests are installed as specified.

5.6.1.4 House Martin

House martin was consistently recorded throughout breeding bird surveys and are likely nesting in the locality of the proposed development. While nesting by this species has not been confirmed within the development boundary, it cannot be entirely ruled out due to the extensive nature of the structures onsite. The renovation and demolition of existing structures will unavoidably lose potential nesting locations for this species.

In order to compensate for the loss of potential nesting sites, in addition to providing additional nesting areas, the following measures are proposed (see 'Bat and Bird Box Locations' drawing in **Appendix C**).

The outbuildings of Rosehill House will be renovated in such a way that is conducive to nesting House martin (see **Plate 5.4**). The outbuildings will incorporate cast 150mm gutter on traditional brad (1m centres) with 150mm masonry roof overhang. This form of roof overhang and gutter has been proven to facilitate nesting by House Martin in other projects undertaken by Fourem Architects. In addition to this construction method, **one Schwegler Façade No. 11** nest box will be installed underneath the gutters to provide a catalyst in the formation of a House Martin nesting colony.

Additionally, **two Schwegler Façade No. 11** nest boxes will be installed on the northern aspect of the Maltings building with appropriate roof overhang of 150mm. These boxes will also serve as a catalyst in the formation of a House Martin nesting colony in this location.

A call attraction system will be placed adjacent to these nest boxes to attract nesting attempts. This will require consideration for electrical fixing. House martin song (available on request) will be played through these speakers during the breeding season. Once a nest box is confirmed to be occupied, this speaker does not need to be played further.

In total, **three** Schwegler Façade No. 11 nest boxes will be installed for House martin across the proposed development in addition to the modification of the Rosehill House outbuilding.

An Ecologist will be consulted during construction to ensure the artificial nests are installed as specified.

Plate 5.4 – View of the western aspect of Rosehill House outbuilding which will be renovated to accommodate nesting House Martin in addition to the installation of an artificial nesting structure (see red).

5.6.1.5 House Sparrow

House sparrow was consistently recorded throughout breeding bird surveys and are likely nesting in the locality of the proposed development. While nesting by this species has not been confirmed within the development boundary, it cannot be entirely ruled out due to the extensive nature of the structures onsite. The renovation and demolition of existing structures will unavoidably lose potential nesting locations for this species.

In order to compensate for the loss of potential nesting sites, in addition to providing additional nesting areas a total of **10 Schwegler Sparrow Roost 1SP** nest boxes will be installed on the walls of structures throughout the proposed development. These boxes will be located between 3-5m from ground level on a variety of aspects (see 'Bat and Bird Box Locations' drawing in **Appendix C**). House sparrow are colonial nesters and thus benefit from higher density provisioning of artificial nesting locations.

An Ecologist will be consulted during construction to ensure the artificial nests are installed as specified.

5.6.1.6 Other Passerine Species

In addition to the above species-specific measures, a total of **seven Schwegler 1MR/2MR** artificial nest boxes will be externally mounted on structures 3-5m from ground level throughout the proposed development on a variety of aspects (see 'Bat and Bird Box Locations drawing in **Appendix C**).

5.6.2 Operational Phase

Post-construction monitoring will be carried out as outlined within **Section 5.9** below to ensure successful implementation of mitigation outlined above.

It is recommended that Schwegler Sparrow Roost 1SP and Schwegler 1MR/2MR boxes are cleaned out each winter outside of the bird breeding season during the operational phase. The remaining bird boxes require no maintenance.

5.7 MEASURES FOR OTHER TAXA

During construction any ponding water will be inspected regularly by an Ecologist for the presence of frogspawn during the relevant season. If found to be present it will be removed to a suitable location locally under license from NPWS.

5.8 PRE-CONSTRUCTION SURVEYS AND ECOLOGICAL CLERK OF WORKS

As discussed above for each respective taxa, pre-construction surveys are required prior to the commencement of any works. Given that ecological baselines will shift over time, these surveys are intended to validate that the ecological context of the site remains as described above. Dependant on the results of surveys, additional measures may be required.

During the construction phase of the proposed development, a suitably qualified Ecologist will be present onsite as an 'Ecological Clerk of Works' (ECoW) at least once per month and to supervise all key works (removal of ecologically sensitive features). The ECoW will monitor the implementation and efficacy of prescribed mitigation, and report on same. Monitoring results will be made available to Cork County Council for review.

5.9 POST-CONSTRUCTION MONITORING

Post-construction monitoring will be carried out as part of the operational phase of the proposed development to ensure the successful implementation of mitigation outlined within **Section 5** above. Requirement for different taxa are outlined separately below.

5.9.1 Habitats

The 'bee orchid Meadow' will be monitored for a minimum of two years following completion to ensure individuals were successfully translocated and no invasive plant species (e.g., butterfly bush) establish in the interim. Only manual removal methods with hand tools will be used for invasive plant species.

Dependant on the results of post-construction monitoring, and to account for potential unforeseen changes in the suitability of the receptor site, bee orchids may be re-translocated by a suitably qualified botanist to other dedicated wildflower meadow areas following the methodology in **Section 5.3.1.3**.

5.9.2 Bats

Post-construction monitoring will be carried out on one occasion during the maternity season in each year for two years following the completion of works to confirm the successful implementation all proposed artificial bat roosting locations and to monitor the status of the existing population. Access will be sought to all bat boxes and dedicated bat roof spaces in Rosehill House outbuildings and the Kiln Building for daytime inspection. All surveys will be undertaken by a bat-licensed ecologist.

Monitoring will consist of daytime inspection of bat boxes. All surveys will be undertaken by a bat-licensed ecologist. Should access not be possible at the time of monitoring, dusk/dawn surveys utilising night vision aids will be carried out to determine if bat roosting is occurring. Any records of bat roosting will be sent to NPWS and Bat Conservation Ireland.

5.9.3 Birds

Post-construction monitoring will be carried out on one occasion during the bird breeding season in each year for two years following the completion of works to confirm the successful implementation all

proposed artificial bird roosting locations and to monitor the status of the existing population. Access will be sought to all bird boxes within the residential units for daytime inspection.

Once a Swift nest box at the Malt House/Kiln Building is confirmed to be occupied, this speaker does not need to be played further. Similarly, once the House Martin boxes at Rosehill House outbuildings and Maltings building respectively are confirmed to be occupied, these speakers do not need to be played further.

Table 5.1 – Summary of key ecological enhancement, avoidance and mitigation measures.

Topic	Identified Impact	Avoidance/Mitigation/Enhancement Measure	
		Construction	Operational
Habitats and Flora	-Loss high value mature trees and woodland habitat; -Loss of bee orchid Population; -AIPS.	-Translocation of bee orchid population offsite; -Retention of mature trees; -Root protection areas; -AIPS management.	-Landscape design including tree/hedgerow planting, wildflower meadow, flowering lawns, spring bulbs; -Relocation of bee orchid into meadow post-construction. -Appropriate maintenance of meadows. -Post-construction Monitoring.
Bats	-Loss of roosting features; -Artificial lighting; -Alteration of roosting, commuting and foraging behaviour; -Noise, vibration and air emissions disturbance.	-Pre-demolition surveys and advice; -Derogation licence (DER/BAT 2025-227) and replacement following expiry; -Timing of works/ seasonal avoidance (structure specific); -Pre-demolition roost illumination; -Toolbox talk; -Roof removal supervision; - Use of hand-tools; -Pre-felling tree surveys and measures; -Daytime works only; -Motion-activated security lighting; -Lighting directed away from ecological features. -Standard dust/noise control measures in CEMP. -Installation of 11 summer/winter bat boxes on structures; -Integrated roosts into roof structures of Rosehill House outbuildings and Kiln Building.	-Landscape design including tree and hedgerow planting; -Post-construction monitoring.
Non-volant Mammals	-Loss of foraging and commuting habitat; -Loss of hedgehog nesting habitat; -Artificial lighting; -Noise, vibration and air emissions disturbance.	-Pre-demolition surveys and advice; -Supervision of vegetation removal with hand tools; -hedgehog artificial nest dome installation; -Standard dust/noise control measures in CEMP.	-Landscape design including tree and hedgerow planting; -Mammal-friendly fencing; -Post-construction monitoring.
Birds	-Loss of breeding spaces of identified species;	-Avoidance of bird breeding season in structure demolition;	-Post-construction monitoring.

	- Localised noise and light construction disturbance; -Attraction of avian scavengers.	-Screening for active nesting (e.g. Kestrel); - No removal of active nests until nesting attempt complete. -Installation of artificial nest structures (Kestrel, Swift, House Martin, Barn Swallow, House Sparrow, General Passerines).	
Other Taxa	-Loss of pooling water during construction and operation on breeding frogs, lepidopterans, and insects.	-Ongoing monitoring of pooling water during construction.	-N/A.

6 Residual Impacts and Conclusion

The significance of the potential impacts identified in Chapter 4, considering the avoidance and mitigation measures outlined in Chapter 5, is considered below. The description of effects follows EPA (2022). Effects are judged relative to the current or 'do-nothing' scenario (see **Section 4.1**).

A comprehensive ecological impact assessment has been carried out, and the proposed site is considered to be of **Local Importance (Higher Value)** from an ecological perspective due to the presence of locally significant populations of bee orchid, breeding birds, protected mammals, and roosting bats. Disturbance impacts will occur during the construction phase which cannot be avoided or fully mitigated, and these would have a slight negative impact on the relevant receptors at a local level on a temporary basis at least.

With the implementation of the avoidance and mitigation measures outlined herein the overall ecological effect of the proposed project (relative to the 'do-nothing' scenario) is considered to be **slight negative effect at a local level** during construction. Following completion of construction, a **neutral** effect overall is expected, and following establishment of landscaping measures in the operational phase the predicted ecological effect of the proposed development is considered to be a **slight, positive effect at a local level** (following EPA, 2022). Following CIEEM (2024) the ecological effect of the proposed development is considered to be '**not significant**'.

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Appendix A
Photographic Record

A1. View of southeastern portion of the mills complex showing extensive fire damage of the building.

A2. View of the eastern aspect of Eastville House.

A3. View of the stonework grain store within the mills complex.

A4. View of the northern aspect of the concrete tower and associated concrete structures.

A5. View of the western aspect of Rosehill House.

A6. Survey at height using ladder and endoscope of identified vertical fissure displaying PRF-M suitability for bat roosting (Tag no. 2652).

A7. bee orchid (*Ophrys apifera*) within the Ballinacurra Mills development site.

A8. Barn swallow nest (red) within the ground floor ceiling of Eastville House.

A9. hedgehog (*Erinaceus europaeus*) identified adjacent to Rosehill House.

A10. Juvenile Kestrel (*Falco tinnunculus*) perched waiting for food within the mill building complex after having recently fledged from nearby nest within the development site.

A11. Overview of the proposed development site showcasing the dominant habitat of artificial surfaces and recolonising ground.

A12. View of the western aspect of the mills building complex, with location of Kestrel nesting site within old fireplace (red circle).

A13. View of the underground tunnel network within the development site.

A14. View of the attic of the former residence showing heavily cobwebbed interior and light ingress.

Appendix B

Tree Protection Plan (Holly Arboriculture)

KEY

- Category A: TREES OF HIGH VALUE AND QUALITY
- Category B: TREES OF MODERATE VALUE AND QUALITY
- Category C: TREES OF LOW QUALITY AND VALUE
- Category U: TREES TO BE REMOVED IN THE INTERESTS OF SOUND ARBORICULTURAL MANAGEMENT
- ROOT PROTECTION AREA -BS5837:2012
- TREES TO BE REMOVED
- TREE GROUP/HEDGEROW TO BE REMOVED
- CONSTRUCTION STAGE ARBORICULTURAL MONITORING REQUIRED
- CONSTRUCTION EXCLUSION ZONE (CEZ)
- TREE PROTECTION FENCING
- TREE GROUP - Outline colour indicates category A,B,C,U
- HEDGEROW - Outline colour indicates category A,B,C,U

REVISIONS

REV	DATE	DESCRIPTION
1	31-10-2025	

PROJECT:	JOB NO.
BALLINACURRA MILL	0723
DRAWING:	SCALE:
TREE PROTECTION PLAN	1:500 @ A1

DRAWN BY: P.HOLLY

STATUS: PLANNING

DRAWING NO: TPP-BM0723

NOTES
Do Not Scale. Use Figured Dimensions Only.
Not for Construction Purposes unless Specifically Marked.

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Appendix C

Green Infrastructure and Landscape Strategy

BALLINACURRA MILL LRD

GREEN INFRASTRUCTURE & LANDSCAPE STRATEGY

2025

Former Ballinacurra Mill Buildings Site & Rose Hill House, Ballinacurra, Midleton, County Cork

Contents

1. Summary

1.1 Overview

This strategy informs the proposed development of a mixed use residential development on a significant brownfield site in Ballinacurra Village. The proposal address the zoning of the site as predominantly town centre where there was an historic Mill and some mixed residential zoning around Rosehill House a Protected Structure. The nett site area is 3.63 hectares. The village of Ballinacurra is located approximately 2.5km south of Midleton Town Centre.

The site is located on the edge of an urban - village landscape. It is adjoined by residential development and historic streetscape landscape as well as country road landscape. The local Landscape Character Type is City Harbour and Estuary, as set out in Cork County Development Plan 2022. The site is bounded by a secondary road R629 to the east – Cloyne Road which has a countryside character and Upper Road / Rose Lane to the north which is a peripheral streetscape in the village. To the west the site is bound by the Old Dairy housing estate which contains part of the historic grounds of Rosehill House and to the south by Rosehill Estate which sits on elevated ground.

The site includes protected structures and monuments. To the west of is Rose Hill House; an 18th C. house that is protected and classified as a national monument. To the north of the site at Rose Lane are large, historic stone built industrial mill storage buildings, formerly Bennett & Co. Maltings. The buildings facilitated the malting processes and the storage of barley, along with some processing and administrative functions.

The site rises from Rose Lane to the elevated Rosehill housing estate, historically following the line of the Cloyne Road. Levels across the site vary due to some 20th C. levelling which created some steep embankments to the southerly side. Boundaries vary across the site, consisting of stone walls and concrete block walls along the southern and western sides. There are some post and wire fences and hedge banks containing native plants and trees. The site has been overgrown and gradually greening since 2006 which has led to a proliferation of sycamores at Rosehill amongst the planted historic trees.

The character of the immediate locality is of a fringe village / urban landscape and is defined by housing development in the immediate vicinity to the south while the wider hinterland to the east is distinctly rural in character and is made up of hedge bound agricultural fields.

This document is to be read in conjunction with the recommendations of
Ecological Impact Assessment Report
Tree Survey
Arboricultural Report
Drawing 01.02 – Ballinacurra LRD Proposed Landscape Plan.

1.2 Development Proposal

The development consists of:

- 128 Residential Units
  - 103 no. dwelling houses
  - 25 no. apartments
- Commercial & Retail Floor Area: 539m²
- Cafe: 69m²
- Creche : 223m²
- Public Open Space: 5,090m²
- Useable Public Open Space: 4,690m² Green Space & Civic Square (13% of nett site area)
- Private Open Space - Gardens: 7,915m²
- Useable Private Open Space - Gardens: 6,465 m²
- Communal Open Space - Apartments: 260m²

The proposal combines a housing development, café, creche and commercial, retail & office units within the grounds of Ballinacurra Mill and Rose Hill House with unique green infrastructure of parkland, homezones, streetscapes, squares, play spaces and wildlife zones. The proposal creates a focus and neighbourhood identity using the historic existing mill buildings which address a central location and square or *Cearnóg* within the housing area. Historic houses are integrated into the fabric of the scheme placing Rose Hill in parkland of open green space and historic and new trees while restoring a line of trees to the north of the house and creating the possibility of a connection to the adjacent open space of the housing of the *Old Dairy* and additional connections to the Ballinacurra to Midleton Pedestrian and Cycle Route and Greenway.

The proposal facilitates safe pedestrian accessibility and priority. The design adheres to principles of inclusivity for all ages, universal accessibility, and sustainable development with highly considerate green space and infrastructure.

The proposed development provides generous, deliberately placed open space, a home zone concept which is combined with street identity and a street and footpath hierarchy which ensures ease of movement through the site and safety for pedestrians. Passive supervision of open spaces and home zones is given a primary consideration as would be the case in the village historically. It is proposed to provide an unstructured play-space within a shared surface / home zone area of this scheme to complement the additional open spaces and ensure multiple use of space.

The landscape proposal preserves and extends existing hedgerow boundaries, which contribute to the character of the site's perimeter. The plan carefully considers the placement of trees, adding indigenous species to strengthen the area's character and boost local biodiversity. A designated wildlife zone is included along the southern perimeter of the site, aiming to sustainably enhance the natural landscape and support habitat and biodiversity. This zone features interconnected garden areas to facilitate wildlife movement and maintain an existing soft perimeter treatment between the existing housing at high level at Rose Hill Estate helping to integrate the development with the surrounding rural landscape.

The proposal includes native trees and plants, along with select non-native species that align with a desire for pollinators, to boost local biodiversity.

2. Site Analysis

2.1 Initial Concept

The proposal provides green infrastructure within built material expression that is considerate of the local context including:

- Design of buildings and landscaping based on local character.
- Character areas of separate identity related to context.
- Green infrastructure that reflects character spaces.
- Safe spaces and routes which connect homes to wider area.
- Parkland character that is varied and reflects historic setting.
- Homezones, squares and streetscapes that are defined by contextual architecture and green infrastructure.
- Strengthened biodiversity and habitats.
- Green infrastructure and built landscape that is easily maintained.

2.2 Planning Context

The site is designated as *Town Centre / Neighbourhood Centre* except for the area around Rosehill which is designated as *Existing Residential / Mixed Residential and Other Uses in the Cork County Development Plan* which informs the design of the landscaping and green infrastructure strategy. The proposals refer to the Cork County Council's *Design Guide for Residential Estate Development 2011* and national guidance, including the Urban Design Manual and the Design for Manual for Urban Roads and Streets.

2.3 Existing Buildings

The nett site area is 3.63 hectares. Historically the site combined industrial and domestic functions. It includes protected structures and monuments. To the west of the site is Rose Hill House; an 18th Century house that is protected and also classified as a national monument. To the north of the site against the village street of Rose Lane are large industrial storage buildings which were formally Bennett & Co. Maltings. The buildings facilitated malting processes, the storage of barley and some

2.4 Site Constraints

The site is a brownfield site which has existing buildings, services and boundaries and topography. Rosehill House and its setting have historic significance and are protected as are the Mill Buildings. Rosehill has an historic landscape form a character that requires design consideration. All design considerations are informed by existing and historic character and a requirement to create enhancement. The site has topographical constraints as it was generally levelled and the historic rise in height to the south must be considered carefully in the context of accessibility constraints and landscape comfort. There are some drainage service routes/wayleaves that run from the Rosehill Estate to the south to Rose Lane on the northern side of the site. Many of the constraints in design terms may be reinterpreted as opportunity.

2.5 Local Amenities

Midleton has a range of community facilities and services including educational facilities of five primary schools and four secondary schools in the town. Ballinacurra, located less than 2km south of Middleton town centre and south of the N25, lies at the meeting of the Owenacurra River and the east channel of Cork Harbour. The Ballinacurra Mill LRD site is located a short drive and reasonable cycle or walk from Midleton town centre. Notable local services and amenities include:

- Ballinacurra to Midleton Greenway (500m)
- CBS Secondary School (1.7km)
- Bailick Park (1.2km)
- Ballyannan Woodlands Walk Bridge (1.3km)
- Circle K Filling Station (1km)
- Montessori School (500m)
- Bus Éireann Bus stops (450-500m)
- Bransfield Green (230m)
- Old church and Cemetery (800m)
- Ballinacurra GAA Club (600m)

2.6 Walking & Cycling

The site connects well to the village at Rose Lane and to the Cloyne Road. A connection to The Old Dairy is proposed also as a possible connection for consideration that is designed into the scheme and is considerate of historic landscape and the requirement for increased connectivity. In addition to a road-based route through the site from Rose Lane to the Cloyne Road there are many connecting shared surface routes through streets that are proposed to be for resident car access and as pedestrian and cycling routes and home zones of low speed only (20km).

2.7 Public Transport

Transport priorities for the Cork Metropolitan Area in the *Regional Spatial & Economic Strategies* include the development of the Cork Metropolitan Area Transport Strategy and enhancements to the commuter rail service, including additional stations and rail fleet; and support the feasibility of converting the heavy rail commuter services to light rail services. The Cork County Development plan 2022-28 recognises the planned role for Midleton Train Station in providing a commuter rail service for the town.

2.8 Existing Wildlife

The proposed site aims to support existing wildlife as well as encourage further diversification. The scheme manages impact of the development on existing wildlife and their habitats by means of remediation.

The site has several wildlife species living and commuting through the site including bats, house sparrows, barn swallow, house martins, swift, kestrel, badgers, hedgehogs and foxes.

2.9 Context - Ecology

The existing ecology and habitats within the site are an essential consideration for the proposals. Green infrastructure maintains and protects habitat and proposes considerable addition of planting to expand that habitat.

The green infrastructure strategy acknowledges the importance of, protecting and enhancing wildlife habitat.

2.10 Site Constraints - Existing Trees

Nett site area: 3.63 ha

Existing Trees

1. Elder (Sambucus nigra)
2. Laburnum sp. (Laburnum sp.)
3. Birch sp. (Betula sp.)
4. Small leaved lime (Tilia cordata)
5. Aspen (Populus tremula)
6. Beech (Fagus sylvatica)
7. Holly sp. (Ilex sp.)
8. Poplar sp. (Populus sp.)
9. Sycamore (Acer pseudoplatanus)
10. Apple sp. (Malus sp.)
11. Common ash (Fraxinus excelsior)
12. English elm (Ulmus procera)
13. Wych elm (Ulmus glabra)
14. Contorted Willow (Salix matsudana)
15. Cordyline australis

Existing Tree Groups

A Cypress sp. (Cupressus sp.)

B Willow sp. (Salix sp.),
Sycamore (Acer pseudoplatanus),
Common ash (Fraxinus excelsior),
White poplar (Populus alba)

C Common ash (Fraxinus excelsior),
Sycamore (Acer pseudoplatanus)

D Common ash (Fraxinus excelsior),
Sycamore (Acer pseudoplatanus)

To be Removed

To be Retained (16 no.)

Figure 2.1 – Existing Trees to be Retained & Removed Diagram

3. Green Infrastructure Strategy

3.1 Proposed Strategy

The green infrastructure concept at Ballinacurra Mill supports the planning, management and engineering of green spaces to provide specific benefits from the natural environment in public spaces, homezones, streetscapes and parklands. Green infrastructure defines the network of green landscape spaces, habitats and ecosystems within a defined area and comprises of wild, semi natural and built environments to support nature within a built development in a sensitive and considerate manner.

Nature is supported in the development proposal with:

- Permeable boundaries, buffers and wildlife zones
- Sustainable drainage and urban water catchment
- Planting for wildlife resilience and support
- Protection of found plant species
- Adaptive use of structures for wildlife protection
- Varied green infrastructure in public spaces
- Widespread tree planting in public landscaping and private space

The proposal seeks to create a positive receiving environment and access in conveyance of water surface run off, which creates a better sense of place, a wellbeing benefit and a more aesthetically pleasing landscape. Designing green space and public realm with widespread seasonal green infrastructure provides valuable community recreational space as well as important environmental infrastructure. The design provides kickabout areas, squares, courtyards, playgrounds, green corridors and woodlands which are all popular types of open spaces. These will also contribute to development targets for open space as they are designed to be multifunctional in their use.

Landscaping is supported by Green Infrastructure providing amenities of:

- Squares supported by Public Functions and Services
- Planted Streetscapes
- Planted Courtyards and Homezones
- Planted Shared Surface Streets
- Parkland with Mature Trees and Play Areas
- Dedicated Playground Facilities

This particular strategy is designed to include a range of natural processes for managing and enhancing the habitat protection and biodiversity of the site. The inclusion of a range of vegetation within the multiple open spaces support local biodiversity and includes additionally a dedicated wildlife zone. To enhance the ecology of the area a variation of planting is used, ranging from woodland planting to pollinators. Consideration has been given to species and maintenance requirements of existing habitats and to the inclusion of native and some pollinator friendly non-native planting. The proposed landscape benefits aesthetically from the inclusion of highly considerate Green Infrastructure that supports existing wildlife and planting set in an historic landscape of some significant historic architecture. Character areas in varied landscape conditions maintained in resilient materials, highly developed contextual architecture and built landscape presents a highly considerate overall public realm character.

3.2 Proposed Amenity

The proposed residential development consists of 103 no. dwelling houses and 25 no. apartments and includes consideration of amenities as per the Cork County Council *Recreations and Amenity Policy Interim Approach 2019,* for schemes of 100 units and greater recognising the specific context of Ballinacurra Mill including:

- A Neighbourhood Play Area
- Circular paths and recreational walks
- Usable Open Space Provision of 13% of the developable site area.
- High quality accessible, and suitable proportioned areas of public open space.
- Varied topography natural play space. Suitably overlooked and passively surveyed.
- Connectivity to other, existing open spaces.
- Opportunities for informal play and passive amenity together with biodiversity.

The recreational needs of different age groups have been considered, with the provision of multiple types of green infrastructure supporting amenity spaces, such as home zones, streetscapes, looped walking routes, soft play areas, informal kickabout areas and parkland.

4. Landscape Plan

Diagram Key:

Nett site area: 3.63 ha

- Public Green Space
- Communal Green Space
- Ground Cover Shrubs & Pollinator Planting
- Native Hedgerow
- Wildflower Meadow
- Bee Orchid Meadow
- Woodland Bulbs
- Grasscrete – Planted Surface
- Concrete Footpath – Exposed aggregate
- Hot Rolled Asphalt
- Tarmac – Warm Sandstone Chip Finish
- Hot Rolled Asphalt – Sand Chip
- Heritage Granite Cobble
- Dark Flagstones – Urban Centre
- Paving slabs – Domestic – Town Centre
- Paving slabs – Domestic – Heritage Setting
- Play Area – Hoggin Base and Play Equipment
- Kerbstones – White
- Street Lighting
- Possible location for display of found Archaeology (External)

Figure 4.1 – Proposed Green Infrastructure & Landscape Plan

5. Green Infrastructure & Landscape Types

5.1 Home Zones

Homezones are shared residential space with pedestrian, cyclist, and community use priority. Vehicles are slowed by rising into the paved area defined by surrounding buildings and character which includes green infrastructure. Homezones create a shared environment where pedestrians and cyclists have priority, and the distinction between footpath and roadway is removed encouraging, social interaction, recreation and active use.

A key characteristic of the homezone is of slowed vehicles that are expected to travel at walking pace where the entire street is for all users, and there is no traditional separation between footpaths and the road. Homezones give pedestrians and cyclists priority where vehicles must give way to all. Homezone design encourages the use of the street for play and social interaction promoting social contact between neighbours. Homezone spaces encourage walking and cycling and improve natural surveillance opportunity and active uses.

Figure 5.1 – Home Zones

5.2 Civic Square

Civic squares are public, open spaces, acting as community gathering places for social, cultural, and civic life. The spaces are addressed by the centrally important Mill Buildings which are an historic and civic constant in the area and of a larger scale than local context generally. The civic space to the south named provisionally as An Cearnóg is intended to foster community and public interaction by being a central place to meet addressed by public functions including a coffee shop.

The civic square to the south, is a social and cultural hub acting as a large public room and place of gathering for cultural events. The square or Cearnóg is an important identifiable and symbolic location in the community for people to relax or meet others surrounded by well-placed green infrastructure of tree planting, pollinator planting and open green space.

Both squares are defined by the buildings that surround them. The Rose Lane square acts as an entrance location to commercial functions and an identifiable place associated with civic life and the Mill buildings as apartments. The main Square to the south of the mill complex is a gathering point and meeting location for recreation identifiable by its association with the mill buildings and open green space to the south. The café anchors the space and creates intimacy and enclosure. Both squares are defined by an increased level of paving in the Country Cork manner of dark slabs and white stone banding.

Figure 5.2 – Civic Square

5.3 Streetscape

Streetscapes define how buildings, footpaths, green infrastructure and vehicle routes work together to create the environment of a street. The streetscapes at Ballinacurra Mill define the interface between the private houses and the public space of the street carefully to protect the integrity of each entrance door. Planting, placement of doors and windows, railings and planting of trees all consider the eventual function of a safe harmonious and active street.

The main thoroughfare through the scheme links the Cloyne Road with Rose Lane and is an access to all parts of the scheme. It is presented as of traditional vehicle priority but with traffic calming including raised crossings, level changes, tree planting and ground planting. Tree planting is placed rhythmically where lighting poles are interspersed.

Secondary streets are home access streets and are denoted by changes in level and kerbstones but with similar road and footpath surfaces. Carriageways are defined only by level changes encouraging slower movement of vehicles.

Streetscapes are defined by the careful placement of various trees within the varied architecture; sometimes in line with buildings in rows and other times placed to accentuate views and create local picturesque distinctiveness. Planting is native to encourage biodiversity with some few longstanding specimens appropriate to an historic landscape.

Figure 5.3 – Streetscape

5.4 Public Green Open Space

Public green space is open space of strongly identifiable green infrastructure, planted with trees and groundcover that supports recreation and play. Green space is located around the Mill civic areas and Rosehill House to deliberately anchor the space in civic terms by association with the more significant architecture. Green space in Ballinacurra at Rosehill responds to the lesser density of the designation of the area and the setting of an historic building, the need for safe designated play area associated with the creche use and reflecting the historic open space to the north of the house that connects visually with the Old Dairy and significant historic trees to the west.

Green space supports kick around areas, children's play areas, dedicated habitat of wildflower lawns, bulb planting and pollinator planting as well as supporting historic trees and new tree planting in a picturesque way and in the formal manner of rows of trees which contribute to and enhance a varied and distinctive place.

Figure 5.4 – Public Green Space

6. Landscape - Materials

6.1 Material Finishes

Existing Material Character

Ballinacurra Mill has a number of existing historic buildings, proposed to be converted and used as commercial and residential function. The proposed material nature of the buildings in the development is directly influenced by existing buildings on site, many of which would have restored external finishes.

Proposed Material Character

The development proposes new buildings that are sympathetic to the existing character of the site and the village as well as mindful of historic precedent in the locality.

6.2 Landscaping Material Finishes

Materials & Finishes - Landscape

Kerbstones Granite - White.
Kerbstones Concrete Granite Replica - White.
Asphalt Hot Rolled
Tarmac - Warm Stone Matrix Finish - Wexford Sand
Footpath - Concrete – Exposed Aggregate.
Paving - Flagstone - Dark Granite Flag
Heritage Access - Traditional Granite Sett
Heritage Detail - Traditional Cobble
Paving Domestic - Concrete Dark Slabs
Permeable Parking - Grasscrete
Play Area - Hoggin / Sand

Road - Asphalt - Hot Rolled

Footpath - Concrete - Exposed Aggregate

Urban Boundaries & Railings - Estate Fencing

Shared Surfaces - Tarmac - Wexford Sand Chip

Heritage Access - Heritage Granite Setts

Perimeter Fencing - Acoustic Timber Fencing

6.3 Materials & Finishes - Landscape

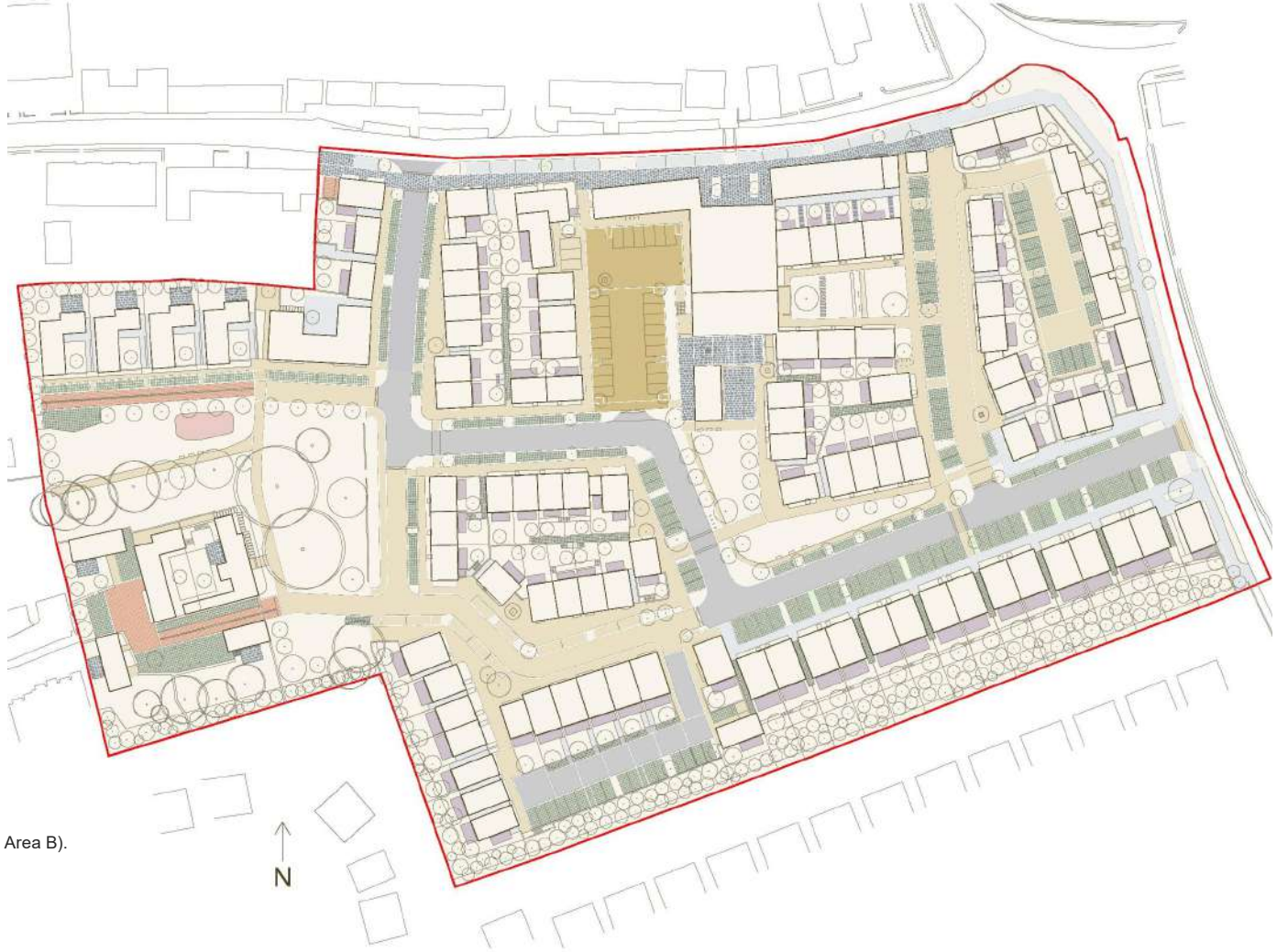

Diagram Key:

Nett site area: 3.63 ha

- Kerbstones - White.
- Hot Rolled Asphalt.
- Hot Rolled Asphalt – Sand Chip.
- Tarmac – Warm Sandstone Chip Finish.
- Concrete Footpath – Exposed Aggregate.
- Heritage Granite Cobble.
- Paving Slabs – Heritage Setting. (Back gardens of all houses in Area B).
- Dark Flagstones – Urban Centre.
- Paving Slabs – Domestic – Town Centre.
- Grasscrete – Planted Surface.
- Play Area - Hoggin Base and Play Equipment

Figure 6.1 – Materials & Finishes - Landscape Diagram

6.4 Boundaries & Fencing Diagram

Diagram Key:

Nett site area: 3.63 ha

- Historic Stone Walls – Rebuilding and Repair.
- Existing Block Wall.
- Existing Block Wall – New Stone Faced.
- Stone Faced Walls New - Historic Form.
- Flush Pointed Stone Wall – low 600mm.
- Harled Plaster Finish Walls.
- Harled Plaster Finish Walls – low to max 600mm.
- Estate Fencing – Galvanised & Painted.
- Timber Fencing.
- Timber Gate – Sheeted Douglas Fir.
- Acoustic Fencing.
- Post & Wire Fencing.
- Wrought Iron Gate – Heritage New.
- Pointed Brick Wall - Dark Varied.

Figure 6.2 – Boundaries & Fencing Diagram

7. Planting Proposals - Green Infrastructure

7.1 Proposed Planting Species

Trees Proposed - Numbers

- Street / Public Space Trees 114 (103 new trees 11 retained)
- Garden Trees 124 (119 new trees 5 retained)
- Boundary Trees 180 c.
- New Trees Total 402

- Trees New and Retained 418

Trees - Species

- Alder (alnus glutinosa) – Open Space
- Arbutus/ Strawberry Tree (arbutus unedo) – Garden Tree
- Ash (fraxinus excelsior) – Open Space / Street Tree
- Aspen (populus tremula) – Open Space
- Beech (fagus sylvatica) – Open Space
- Birch – Silver (betula pendula) - Open Space / Garden / Street
- Cherry – Bird (prunus padus) – Open Space / Garden / Street
- Elm – Wynch (ulmus glabra) – Open Space
- Hawthorn (crataegus monogyna) - Standardised – Open Space
- Hazel (corylus avellana) – Open Space / Garden
- Oak – Sessile (quercus petraea) – Open Space
- Rowan/ Mountain Ash (sorbus aucuparia) – Open Space / Garden / Street
- Scots Pine (pinus syvestris) – Open Space
- Whitebeam (sorbus hibernica) – Open Space / Garden/ Street
- Yew (Taxus Baccata) – Open Space / Hedging also
- Crab Apple (malus sylvestris) – Open Space

Native Hedgerow – (Wildlife Zone)

Small Trees:

- Blackthorn/ Sloe (prunus spinosa)
- Buckthorn - Alder (frangula alnus)
- Crab Apple (malus sylvestris)
- Elder (sambucus nigra)
- Evergreen Holly (ilex aquifalium)
- Hawthorn / Whitethorn (crataegus monogyna)
- Hazel (corylus avellana)
- Holly (ilex aquifolium)

Shrubs:

- Broom (cytisus scoparius)
- Buckthorn – Purging (rhamnus cathartic)
- Dog-Rose (rosa canina)
- Ferns Various including: Broad Buckler, Filmy, Hartes Tongue, Hay Scented, Lady, Scaley Male, Shield
- Guelder Rose (viburnum opulus)
- Honeysuckle (lonicera periclymenum)
- Spindleberry (euonymus europaeus)

Ornamental Hedging

- Bay (Laurus Nobilis)
- Miniature Leaf Spindle (Euonymus Japonicus Microphyllus)
- Spindle (Euonymus Japonicus Robusta)

7.2 Ground Cover & Ground Planting

Historic Shrubs

- Hydrangea (Serrata – Bluebird)
- Forsythia Iintermedia (Lynwood Variety)
- Crabapple (Malus sylvestris)
- Spotted Laurel (Aucuba Japonica)

Shrubs & Pollinator Planting - Not limited to:

- Barberry (Berberis Darwinii)
- Bergenia ‘Eroica’
- Hebe
- Lavender (Lavandula ‘Hidcote’)
- Potentilla Fruticosa (Shrubby Cinquefoil)
- Prunus Tenella (Fire Hill)
- Rosemary (Rosmarius Officialis)
- Skimmia Japonica
- Sage

Bulbs & Perennials (Native Woodland & Hedgerow)

– Not limited to:

- Anenome (Nemorosa)
- Bluebell (Irish Native -Hyacinthoides Non Scripta)
- Herb Robert (Geranium Robertianum)
- Meadowsweet (Filipendula Ulmaria)
- Violet (Viola Species)
- Wild Garlic (Allium Ursinum)
- Wood Avens (Geum Urbanum)
- Wood Rush (Luzula Sylvatica)
- Wood Sorrel (Oxalis Acetosella)
- Wood Speedwell (Veronica Montana)

Wildflower Meadow – Suggestion & not limited to:

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.

Flowering Lawn – Native Only -Suggestion and not limited to:

Birdsfoot Trefoil, Red Clover, Self Heal, Ladys Bedstraw, Forget me Not, Black Medick, Yarrow, Kidney Vetch, Ragged Robin, Rough Hawkbit, Oxeye Daisy, Bent, Sheeps Fescue, Smooth Stalked Meadowgrass, Slender Red Fescue, Chewings Fescue, Crested Dogstail.

Bee Orchid Note – A rare Bee Orchid found in the eastern portion of the site to be stored and then planted in a defined wildflower meadow.

7.3 Tree & Hedge Identification Diagram

Diagram Key:

Nett site area: 3.63 ha

Total no. trees proposed for site: 418c.
16 no. retained trees & 402c. no. proposed trees

01 Existing Trees to Be Retained
01 Proposed Trees
01 Proposed Hedging

Tree Species
1. Alder (alnus glutinosa)
2. Arbutus/ Strawberry Tree (arbust unedo)
3. Ash (fraxinus excelsior)
4. Aspen (populus tremula)
5. Birch - Silver (betula padus)
6. Beech (fagus sylvatica)
7. Cherry - Bird (prunus padus)
8. Elm - Wynch (ulmus glabra)
9. Hazel (corylus avellana)
10. Hawthorn - Standardised (crataegus monogyna)
11. Oak - Sessile (quercus petraea)
12. Rowan/ Mountain Ash (sorbus aucuparia)
13. Scots Pine (pinus syvestris)
14. Sycamore (acer pseudoplatanus) *
15. Whitebeam (sorbus hibernica)
16. Crab Apple (malus sylvestris)

Hedging
A. Bay (laurus nobilis)
B. Miniature Leaf Spindle (euonymus japonicus microphyllus)

	Existing Trees Retained	16 no.
	Street Trees New	103 no.
	Garden Trees New	119 no.
	Boundary Trees	180 c.
	Hedge Planting – Traditional Landscape	
	Native Hedgerow – Wildlife Zone	

* Retained Existing Trees - (no new Sycamore proposed)

Figure 7.1 – Tree & Hedge Identification Diagram

7.4 Ground Cover Planting Diagram

Diagram Key:

Nett site area: 3.63 ha

Proposed Historic Shrubs

1. Hydrangea (Serrata – Bluebird).
2. Forsythia Iintermedia (Lynwood Variety).
3. Crabapple (Malus sylvestris).
4. Spotted Laurel (Aucuba Japonica).

- Ground Cover Shrubs & Pollinator Planting.
- Shrubs - Historic.
- Flowering Lawn.
- Wildflower Meadow.
- Native Hedgerow - Wildlife Zone.
- Bee Orchid Meadow.
- Wood Land Bulbs.
- Hedge Planting – Traditional Landscape

Figure 7.2 – Ground Cover Planting Diagram

8. Green Infrastructure Biodiversity & Wildlife

8.1 Sustainability

Existing Built Environment

Ballinacurra has archaeological and architectural heritage sites in particular at the Mill Buildings (Malt Houses) and at Rose Hill (House).

The design approach to the site incorporates the context of the notable existing buildings integrating new buildings and creating new urban space referencing the existing development pattern of the town.

New Planting Structure

Planting aims to encourage biodiversity by concentrating on native trees, and natural planting forms. The scheme includes:

- The creation and enhancement of hedgerows / a wildlife zone to the southern site boundary.
- The planting of mainly native trees and shrubs suitable for the long term site objectives of biodiversity. definition of space, screening, seasonality and restoration of character.
- Careful consideration of maintenance and management requirements for the future.
- Environmental benefit with access and circulation routes for pedestrians and cyclists through various planted spaces.
- The provision of nature based, safe and healthy recreational spaces which promote activity and social interaction.
- Provision of quality residential environments supported by planting to encouraging sustainable communities.

8.2 Biodiversity Enhancement

Biodiversity potential on the site may be enhanced by measures including:

- Significant native tree planting
- Native woodland / hedge planting
- Native Woodland ground planting
- Native Bulb planting
- Pollinator Planting
- Native Species Meadow Planting
- Native Species Flowering Lawn

The proposed native tree planting and landscaping enhances the amenity and character of the site. Biodiversity is encouraged with the introduction of native hedgerows, native trees and flowering lawns and meadows. The scheme proposes the creation of natural environments by the introduction of native only planting in the majority except for pollinator species and ornamental hedging.

Existing Wildlife

The proposals aim to support new and existing wildlife habitat and its further diversification. The scheme aims to manage impacts of the development by means of remediation and proposes to increase habitat

Bats – Habitat Creation - Bat Boxes

It is proposed to install bat boxes on built structures. Bat boxes are south and north facing to provide winter and summer roosting opportunities. They are a minimum of 3m above ground level with the roost entrance not illuminated and placed in areas connected to surrounding vegetation. See Figure 5.1 – Bat & Bird Box Location.

Birds – Habitat Creation

Multiple bird species inhabit the site at present; this includes House Sparrows, Barn Swallows, House Martins & Swifts. Nesting boxes are placed a minimum of 4.5m above ground level. The entrances of the nesting boxes are not illuminated. Multiple nesting boxes are provided at all locations and no nest boxes are placed above one another. Hedgerows and trees may support additional habitat.

See Figure 5.1 – Bat & Bird Box Location.

Swifts

It is proposed to install artificial nesting boxes below eaves level along the western elevation of the Malt House and Kiln building. A minimum of 20 swift nesting boxes are proposed.

Barn Swallows

Artificial swallow nest cups are proposed to the underside of balconies on the West and East Elevation of the Malt House and Kiln Building. 10 nesting cups are proposed to be installed.

House Martins

The outbuildings of Rosehill House are proposed to be constructed in a manner to facilitate nesting by House Martin. Outbuildings to incorporate 150mm cast gutters on traditional brads with 150mm masonry roof overhang. One no. nesting box is also proposed underneath the gutters of the outbuildings at Rosehill House. Two nesting boxes are also proposed on the northern elevation of the Maltings building, with a roof overhang of 150mm.

Kestrels

Kestrels were identified on the site. It is proposed to install an artificial nesting box to one of the blank windows at the 3rd floor level of The Malt House on the east facing elevation away from opening windows reducing disturbance or human activity. See Figure 5.1 – Bat & Bird Box Location.

Non-Volant Mammals

The proposed site is currently suitable for Hedgehogs, Badgers and Foxes. To support these species a wildlife zone is proposed. Post and wire fencing is proposed at the rear part of all gardens to facilitate access for hedgehogs throughout the site. Post and wire fences allows for mammal movement. The fencing is a box based design to contain domestic dogs.

Ornamental hedges are proposed in double rows to create quiet shaded areas for mammals.

Hedgehog domes are proposed within the wildlife zone.

Planting for Wildlife & Climate Resilience

Substantial tree planning is proposed to replace trees removed to facilitate the construction works.

Adaptive Use - Existing Structures

It is proposed to allow bat habitat in the roof structures of the outbuildings to Rose Hill (House) and the Mill Buildings at The Kiln Building roof structure. Refer to section 5.5.1.4 of Ecological Impact Assessment Report for detail on minimum requirements for adapting roof structures for bats.

8.3 Bat and Bird Box Locations

Diagram Key:

Nett site area: 3.63 ha

- Bat Box - Schwegler 1WI and 1WI
- G — General Bird Box - 07 no. sites – Schwegler 1MR and 2MR
- HS — House Sparrow - 10 no. sites – Schwegler 1SP
- HM — House Martin - 03 no. sites – Schwegler no. 11
- S — Swift - 20 no. sites – Schwegler no. 17
- SW — Barn Swallow - 10 no. sites – Schwegler no. 10B
- Kestrel - Min. of no.1 box at 4th floor level

*Box specification to standards noted in Schwegler product specification. Equivalent products may be used as approved by ecologist.

Figure 8.1 – Bat & Bird Box Location Diagram

9. Maintenance & Landscape Works

9.1 Green Landscape & Planting

This section outlines proposed maintenance and management plans for the establishment and ongoing green infrastructure maintenance of the proposed development. A defects period applies to all soft green infrastructure landscape works carried out. Landscape works require continuous maintenance and repair. The proposals here aim to reduce the maintenance liability by design.

A. Site Clearance - General

Remove rubbish, concrete, metal, glass, decayed vegetation, weed growth, large roots and contaminated topsoil and stones over 25mm.

Contamination

Remove material contained toxins, pathogens or other extraneous substances harmful to plant, animal or human life. In accordance with current Health and Safety legislation.

B. Weed Control

Remove all undesirable weeds from the site including Ragwort, Himalayan Balsam, Giant hogweed, Thistle, Dock, Common Barberry, Male Wild Hop and Spring Wild Oat, or any other noxious species identified by the Department of Environment. Japanese Knotweed has not been identified on site.

Planting Conditions

Soil for cultivating and planting

Healthy, composted, crumbling and wet but not waterlogged.

Weather

Avoid planting in high winds or drought conditions and avoid planting in frosty conditions. If planting with frost protect roots and lower trunks. Adhere to planting season as follows:

Deciduous Trees and Shrubs

October / November to March / April.

Evergreens/ Conifers

October/ November or February / March.

Watering

Wet full depth of topsoil, applying evenly and without damaging or displacing plants or soil as often as necessary to support wellbeing of planting.

Planting & Mulching

Mulch should be free from toxins, pathogens or other material that may be harmful to plant or animal life.

Plants/Trees – General

Condition - Materially undamaged, sturdy, healthy and vigorous.

Appearance - With good shape and without weak or delicate shoots.

Hardiness - Grown in suitable environment and hardened off outside.

Health - Plants free from pests, diseases, discoloration, weeds and physical disorders.

Budded or Grafted Plants - Bottom worked (ground level).

Root System and Condition - Healthy, undamaged, in balance with branch system.

Species - True to name and description.

Labelling & Information

Provide each plant / tree or plant group / trees of a single species or grown cultivar with supplier's labelling indicating@

- Full botanical name, total number, number of bundles, part bundles.
- Supplier's name
- Employer's name and project reference.
- Plant specification, in accordance with scheduled National Plant Specification Categories and BS 3936.

Labelling may require one or more labels of a durable nature.

Plant / Tree Substitution

Plants / trees unobtainable at time of ordering having searched extensively for such and with no option and in exceptional circumstances only. Submit alternatives, stating the price and difference from specified plants/ trees. Obtained employers approval for change.

Plant Handling, Storage Transport and Planting

Standard - To Horticultural Trades Association Handling and Establishing Landscape Plants.

Frost - Protect plants from frost using shelter indoors or cover.

Handling - Handle plants with care. Protect from mechanical damage and do not subject to shock, e.g. by dropping from a vehicle.

Planting - Upright or well-balanced presented with best side forward.

Treatment of Tree Wounds - Cutting

Keep wounds as small as possible. Cut cleanly back to sound wood using sharp, clean tools. Leave branch collars intact. Do not cut flush to stem or trunk. Ensure that water will not collect within a cut part.

Container Grown Plants/ Trees

Growing Medium / Soil - With adequate nutrients for plants to thrive until permanently planted.

Plants - Centred in containers, firmed in and well watered.

Root growth - Substantially filling containers, not root bound, and in good condition conducive to successful transplanting.

Hardiness - Hardened out in the open air for reasonable time of months.

Containers - With adequate drainage when placed on any substrate commonly used for irrigation.

Protection of Lawn - Flowering

General - Protect areas affected by planting operations using boards/ tarpaulins for a minimal period.

Excavated or Imported Material - Do not place directly on grass.

Surplus Material

Remove subsoil, stones, debris, wrapping material, pots, canes, ties, temporary labels, pruning's and all other surplus material arising from the works.

General Planting/Seeding

Planting to be carried out within the contract period but not during periods of frost, drought, cold drying winds or when the soil is waterlogged, or when the moisture of the soil is excessive.

All containers and protective coverings including biodegradable coverings to root systems to be removed before planting. Roots, except for emergent vegetation, to be teased gently from the outer root-ball. Plants to be planted upright or placed with care. Extreme care is to be taken to avoid damage above and below ground. The original soil mark on the stem must be at finished ground level after planting. After planting, lawn seeding, the soil over the planted, seeded or turfed area to be watered to achieve capacity. On completion of planting, watering and mulching, all areas to be left tidy and weed-free and to be maintained in a tidy and weed-free state until completion of the works a date established before commencement with the employer. For shrub and transplant pit planting, notch planting and ordinary planting, the plant positions to be set at equal centres to obtain a natural dense cover when mature. For notch and pit planting plants to be planted in parallel lines. Planting positions in each row to be staggered with previous rows. Finely separated backfill material to be carefully spread around roots and root trainers of plants. Ensure that all gaps are filled with soil and then be consolidated by heeling. Careful filling and heeling to continue as necessary at 150mm approximate layers.

Mulching

Newly planted shrub areas to be mulched immediately after planting to a depth of 50mm. Mulch to be coarse chipped tree bark, composted for 2-4 months. Particle size circa. 50mm diameter.

After Planting & Mulching

Watering - Immediately after planting, thoroughly and without damaging or displacing plants or soil.

Firming - Lightly firm soil around plants and fork and/ or rake soil, without damaging roots, to a fine tilth with gentle cambers and no hollows.

All areas to be left tidy and weed-free and to be maintained in a tidy and weed-free state until completion of the works.

Tree Planting

Tree Pits

Sizes: At least 300mm greater than rootball in all directions.

Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum depth throughout.

Pit bottoms: With slightly raised centre. Break up to a depth of 100mm.

Pit sides: Scarify / Break.

Semi-Mature Trees

Standard - Prepare roots and transplant to BS 8545. Planting to be carried out by positioning the tree in the centre of the pit closely against the tree stake and spreading the tree roots with care.

Backfilling Material - Prepared mixture of topsoil excavated from pit and additional compost as required.

Ties - Immediately following planting, trees with stakes to be secured with tree ties. Tree ties to be fixed so that movement of the tree to not cause damage or abrasion to the bark, top tie to be 100mm below top stake.

Staking

Use softwood, peeled chestnut, larch or pine, straight, free from projections and large or edge knots and with pointed lower end. Adjustable rubber ties designed to prevent injury and approved by the employer to be fixed to all trees and at the correct size for the tree.

Mulch Circles

All existing trees/newly planted trees within open grass areas or grass verges to have 50mm depth mulch circle of a maximum 1m diameter or as allowed by verge width.

Shrub Planting

All shrubs are to be pit planted. General pit dimensions are to be wide enough to accommodate roots when spread and 100mm deeper than root system. Break up base of pit to a depth of 100 mm, incorporating soil conditioner at approximately 50 g/m². Pits to be backfilled with previously excavated material enriched as appropriate. Backfilling to be done in layers of 150mm depth; at each stage the filling to be firmly consolidated. Soil additives can be premixed with the soil applied or mixed in during planting. Soil additives to consist of an approved compost at 10L per m2 average; and 150g/m2 slow release fertilizer, or as approved and appropriate to each circumstance. All shrub areas to be finished, with 75mm average of medium grade approved mulch.

Hedgerow Planting

Preparation - Tench to 500mm width for a staggered row, ensuring pit base is broken up 100mm deeper than plant root ball.

Additives - Compost at 10lt/m2 with slow release fertiliser at 150g/m2 approximately.

Planting - Mix in soil additives with excavated topsoil, or if there is poor topsoil then mix in with imported new topsoil. Firm down topsoil lightly in layers of 150mm by treading.

Additional Requirements - If there is no existing fencing or barrier, install a protective fence / wind breaker until hedge is established. Check that planting is protected from pests and livestock. With employers' permission and approval install a stockproof fence or electrical fence 1m from hedge line to livestock until hedge is established. Prior to new growth cut the hedge back by 300mm to encourage new growth outside of growing season.

Removing Trees & Shrubs

Identification - Clearly mark trees and hedges to be removed.

Work near Retained Trees - Where canopies overlap, take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained.

Failures of Planting & Replacements

Defects due to materials or workmanship not in accordance with the specification's guidance or common understanding for plants/ trees/ shrubs that have failed to thrive.

- Exclusions: Theft or malicious damage after completion.
- Rectification: Replace with equivalent plants/ trees/ shrubs.

Replacements - To match size of adjacent or nearby plants of same species or match original specification, whichever is greater.

Grass Seeding

Herbicide Application - No glyphosate or other controlled chemical pesticides.

Cultivation - Compacted Topsoil to be broken up to full depth.

Soil additives / enrichers / conditioner/ fertilizer. - To be used to boost late seeding only. Type to be used is to be agreed with the employer depending on the time of year and the condition of the soil.

Tilth / Soil Condition - Reduce topsoil to a tilth suitable for blade grading of approximate depth of 75 mm and particle size 20 mm down.

Material brought to the surface. - Remove stones and clay balls larger than 50 mm in any dimension, roots, tufts of grass, rubbish and debris.

Topsoiling & Subsoil - Lawns

Areas to be reinstated to be top soiled to a min. depth of 200mm, provided as necessary to make up any deficiency of topsoil existing on site and to complete the work.

Do not use topsoil contaminated with subsoil, rubbish or other materials that are corrosive, explosive or flammable; hazardous to human or animal life; detrimental to healthy plant growth. Defer strictly to Council rules on topsoil movement and licencing. Refer to BS3883.

Do not leave waste or large objects in subsoil and ensure subsoil id appropriate to growth and in good condition.

Grading

A fine graded finish to bring the ground to a uniform and even grade at the correct finished levels with smooth, flowing contours is required. Topsoil should be reasonably dry and workable. Contours to be smooth and flowing, with falls for adequate drainage. Hollows and ridges are not approved. Finished levels after settlement to be 25 mm above adjoining paving, kerbs, manholes etc.

Blade grading: May be used to adjust topsoil levels provided depth of topsoil is nowhere less than 150mm on completion.

Fertilizer for Seeded Areas

Apply for lawns superphosphate with a minimum of 18% water-soluble phosphoric acid and a sulphate of ammonia with a minimum of 20% nitrogen. Apply before final cultivation and three to five days before seeding/turfing if advised for flowering lawns or as advised. Spread evenly, each type at 70 g/m², in transverse directions.

Final Cultivation

Timing: After grading and fertilizing.

Seed bed: Reduce to fine, firm tilth with good crumb structure.

Depth: 50-100mm.

Surface preparation: Rake to a true, even surface, friable and lightly firmed but not over compacted.

Remove surface stones/earth clods exceeding: Pastoral areas: 50mm. Fine lawn areas: 10mm.

Adjacent levels: Extend cultivation into existing adjacent grassed areas sufficient to ensure full marrying in of levels.

Grass Seed / Grass / Flowering Seed Mix

All seeds to carry appropriate certificates. Seed to be purchased as fresh. Seed to be stored under non-transparent wrapping, off the ground, in a dry, shaded place, in well-ventilated conditions under cover and to be protected from vermin and contamination until required for use.

Sowing

General: Establish good seed contact with the root zone to suit soil type, proposed usage, location and weather conditions during and after sowing. Carry out two equal sowings at right angles to each other. Fence off areas with suitable fencing to stop people or animals from trampling new growth.

Lawn / Flowering Lawn Sowing Season

April to June or August to November.

Cleanliness of the Works

After completion of all works remove all debris and waste material from site. Remove soil from hard surfaces and grassed areas. Leave the works in a clean, tidy condition at completion and after maintenance works.

Standards for the Works

Planting Standards and Specifications - Not exhaustive

BS 3882	Specification for topsoil and requirements for use.
BS 3883	Topsoil
BS 3936-1 to 10	Specification for the supply of nursery stock.
BS 3998	Tree Works: Recommendations.
BS 4428	Code of Practice for general Landscape Operations.
BS 5837	Tree in relation to Construction.
BS 7370-1 to 10	Grounds Maintenance.
BS 8545	Trees: from nursery to independence in the landscape- recommendations.
BS 8601	Specification for subsoil and required use.

Use latest publications for each document.

9.2 Maintenance Plan

Maintenance programme organised on the basis of specific performance standards. These are to be met by the contractor and be the basis on which this contract will be assessed. Along with these performance standards a monthly report sheet to be filled out and returned each month. Details of the performance standards are outlined below.

Remove all noxious and undesirable weeds from the site. Weeds include but are not limited to: Ragwort, Himalayan Balsam, Giant Hogweed & Japanese Knotweed, Clematis Vitalba (Old Mans Beard) Thistle, Dock, Common Barberry, Male Wild Hop and Spring Wild Oat, or any other noxious species identified by guidance. Notify identification of Japanese Knotweed & Giant Hogweed and others as directed by guidance and manage as directed only and with great care and consideration of method application. Refer to Waste Management Plan, NIS and legislation.

Lawns / Flowering Lawns

Lawn Areas

Cut grass areas to achieve an even cover of vegetation of uniform height and colour comprising predominantly of grass and appropriate flowering species. No more than 5% of the grass areas to contain dicotyledonous (dicots) weeds, except for intended flowering species. Lawn cutting to not be carried out during excessively wet or waterlogged conditions.

Mowing

Where practical use a cylinder mower, otherwise a rotary mower may be used. All clippings to be collected and sent to the composting area. Lawn grass cutting to be carried out every 15 days during the growing season at recommended heights, (throughout the period of March to October), but need to be adjusted according to season's weather conditions. Flowering lawn is mown as you would a conventional lawn; but not too short; 30 - 50

mm in height. The mowing regime can be suspended at the end of June for up to eight weeks, allow for flowering.

Weed Control

Weeds to be removed by hand or dug out according to guidance (except for Invasive Species which may require specific approach.)

Fertilizer

Approved natural fertilizer may be used if growth / establishment is limited or yellowing occurs as approved by seed supplier and as agreed with the employer / management body.

Amenity Grass Areas

Amenity areas may have the addition of sturdier grass to flowering lawns for durability and may be cut locally in areas to support play areas if desired.

Edging and Strimming

Grass edges along pathways, planting borders, roadways, trees, lampposts, signs and any other obstacle to be kept neat and tidy at all times using hand tools making sure to work in hours as agreed with management and reducing disturbance and noise pollution.

Between the months of March and October inclusive edging to be carried out to all areas of grass abutting isolated/ specimen trees or shrub borders or mulch circles. These areas to be maintained using a half moon tool or similar to maintain straight or curved defined line and to be carried out a minimum of 2 - 3 times per year.

Mowing strips against permanent obstacles to be a max. width of 150mm and to be maintained using a hand strimmer. Large areas of desiccated/ burnt off grass are not permitted. Strimming to be carried out a min. of 12 times per year.

Grass clipping and all arisings to be swept up and removed off site.

Spring Bulbs in Grassed Areas

For strong regrowth cut lawns populated by spring bulbs once the leaves of the bulbs have died down and/or yellowed completely. Initially reduce height by one third, followed by a 2-3 stage further reduction over two weeks to achieve desired height.

Failed areas

Areas of lawn which fail or are damaged or worn to be reinstated by re-turfing or re-seeding in accordance with the original or preferred specification.

Shrub Planting

Shrub areas to be kept litter and weed free, particularly of perennial weeds. Healthy growth to be maintained to cover as much as possible of the planting area and allowing the individual plants to achieve a natural form. With the exception of hedges, boxing or pruning is not encouraged but to avoid obstructing pathways or sightlines.

Pruning / Cutting Back

In general pruning to be done to support natural growth. Dead, damaged and diseased portions of the plant may be removed but may also remain as decorative in winter. Cuts to be flush and clean, leaving no stubs or tearing of bark. All major pruning to be done following flowering or during plant's dormant season. Emergency or minor pruning to be done when needed. Remedial attention and repair to shrubs to be provided as appropriate by season or in response to incidental damage. Areas of natural planting / wildlife zone as indicated to be contained by trimming once per year.

Wildlife Protection

All clearance operations or cutting within woodland, hedging and scrub areas to be carried out outside of the Birdnesting season to preserve the bird life in the area. This season extends from the 1st March to 31st August.

Mulching

Shrub beds to contain a min. depth of 50mm bark mulch throughout the year. Mulch is not generally required in areas where plant foliage covers the soil surface, such that the soil is not visible. While carrying out spot treatment to remove weeds do not cultivate or incorporate mulch into the soil. Any mulch outside of designated planting areas to be returned to the planted area on a weekly basis.

Mulch to be uniform in colour and appearance, and free of leaves, sticks, or trash. When replacing existing mulch, use a mulch product that is similar in appearance to that already at the site.

Weed Control

Planting beds to be maintained relatively weed free (no more than 5% of weed cover at maximum) by hand weeding. Saplings to be removed from all planting areas on emergence. Areas of natural planting / wildlife zone as indicated to be weeded as appropriate once per year or more if required for management of a healthy environments for wildlife and native hedgerow.

Tree Planting Care

Trees to be maintained in a healthy, vigorous growing condition with a well-shaped framework for future growth.

Tree Planting Maintenance

In Spring and Autumn of each year during the maintenance period check trees, stakes, rabbit guards and ties and adjust, the soil firmed, any dead wood removed back to healthy tissue and mulch adjusted to original levels. Any broken stakes or ties evident throughout the maintenance period to be replaced.

A 1m-diameter mulch circle to be maintained at the base of each tree located in open grass areas or grass verges. Top up bark mulch to 75mm where required and make good any mulch mats.

All clearance operations within woodland, hedging and scrub areas to be carried out outside of the Birdnesting Season to preserve the bird life and wildlife generally in the area. This season extends from the 1st March to 31st August.

Litter Clearance / Pick-up

The maintenance contractor to maintain all areas free from litter. This means the removal of all litter, rubbish and any other unwanted debris from all areas, which will include grass areas, planted areas, carparks, footpaths as well as woodlands and tree canopies.

In addition to removal of litter from footpaths, planted areas, etc., the contractor to make provision for the immediate (within 1 days of notification) arrangement for collection and removal of all extraneous matter which has deliberately been deposited on site by persons known or unknown (fly-tipping).

Watering

During the first growing season all standard trees / semi-mature trees to be watered at least five times during the growing season - in April, May,

June, July and August unless otherwise directed by the Landscape Architect / Employer. During the second growing season trees to be well watered, particularly during June, July and August.

The edge of the mulch circle to be maintained in a neat and tidy condition as appropriate to the location. The surface of all planting pits is to be kept free of weeds during the maintenance period by mechanical weeding of annual weeds and perennial weeds - to be carried out with fortnightly regularity during the growing season.

Tree Stakes and Ties

Check tree stakes and ties on each maintenance visit. Repair, strengthen and adjust (loosen / tighten) to ensure optimum functioning and trees not being damaged by poor fixings. If trees no longer require stake / ties may be removed. Check all tree stakes and ties regularly.

Woodland / Scrub / Wildlife Area Management

Woodland / hedgerow areas specified to be maintained in a healthy, vigorous condition and free from litter and invasive weeds. Some thinning of woodland may be required over the 5-year period.

Replacements

Any tree, hedge or shrub that is removed, uprooted, destroyed or becomes seriously damaged, defective, diseased, or dead to be replaced in the same location with another plant of the same species and size as that originally planted within the defect period after planting. All such replacements to be carried out in the first available planting season after the requirement to do so is recognised.

10. Reference

CCC- Cork County Council Tree Plan

Cork County Council recommended list of native tree and shrub species. Prepared by CCC Ecology Office, Ver 2, June 2022.

Cork County Council Recommended List of Native Tree and Shrub Species for Residential & Industrial Developments														
Native Tree & Shrub Species	Scientific Name	Height (m)	Site Preferences	Soil PH	Tolerates shade	Suitable for					Tolerates Coastal Sites	Conspicuous Flowers / Catkins	Fruit / Berries / Nuts	Biodiversity Value
						Natural Hedgerow	Open Space	Garden	Street Trees	Industrial Sites				
Alder	*Alnus glutinosa*	20m+	Found in a wide variety of conditions. Prefers wet ground & watercourse banks. Good for stabilising riverbanks. Does not like dry sandy ground. Observed to have some tolerance to salt & air pollution.	Neutral to Alkaline	✓		✓			✓			✓	Birds, Insects, Squirrels, Mosses, Lichens, Fungi
Arbutus / Strawberry Tree	*Arbutus unedo*	5-10m	Nutrient rich, well-drained soil in sun or semi-shade. Needs a warm microclimate to perform well. Observed to have some tolerance to salt. Does not like cold, drying winds.	Acidic to Neutral				✓			✓	✓	✓	Birds, Insects
Ash	*Fraxinus excelsior*	20m+	Thrives best in fertile, deep & well-drained soil in cool atmospheres. Does not like waterlogged sites.	Neutral to Alkaline	✓		✓		✓	✓	✓			Birds, Bats, Small Mammals, Insects, Mosses, Lichens
Aspen	*Populus tremula*	20m+	Thrives in open sunlight & moist soil. Fast growing. Tolerant of exposed, windy sites with some tolerance to salt. Does not like very dry sites. Low tolerance to herbivory.	Neutral to Alkaline			✓			✓	✓			Birds, Insects, Lichens
Birch - Downy	*Betula pubescens*	10-20m	Tends to grow on damper soils than Silver Birch & can even tolerate peat bogs & clay. Low tolerance to shade. Require good crown space in order to	Acidic to Neutral			✓	✓		✓		✓		Birds, Bats, Insects, Lichens, Fungi, Deadwood

Cork County Council recommended list of native tree and shrub species. Prepared by CCC Ecology Office, Ver 2, June 2022.

Cork County Council Recommended List of Native Tree and Shrub Species for Residential & Industrial Developments														
Native Tree & Shrub Species	Scientific Name	Height (m)	Site Preferences	Soil PH	Tolerates shade	Suitable for					Tolerates Coastal Sites	Conspicuous Flowers / Catkins	Fruit / Berries / Nuts	Biodiversity Value
						Natural Hedgerow	Open Space	Garden	Street Trees	Industrial Sites				
			develop into mature tree. Sensitive to weed competition during establishment.											
Birch - Silver	*Betula pendula*	10-20m	Thrives best in a sunny position & well-drained soils. Require good crown space in order to develop into mature tree. Sensitive to weed competition during establishment.	Acidic to Neutral			✓	✓	✓	✓		✓		Birds, Bats, Insects, Lichens, Fungi, Deadwood
Blackthorn / Sloe	*Prunus spinosa*	0-5m	Grows best in moist, well-drained soil & thrives in full sunlight. Grows naturally in scrub, copses & woodland. Can grow in exposed & windswept coastal conditions. Does not like very wet conditions.	Acidic to Alkaline		✓					✓	✓	✓	Birds, Insects, Small Mammals
Broom	*Cytisus scoparius*	0-5m	Grows best on light, dry, acid soils. Does not like wet conditions.	Acidic to Neutral		✓						✓		Insects
Buckthorn - Alder	*Frangula alnus*	5-10m	Wide variety of conditions. Prefers wet ground & open woods, thriving in scrub, hedgerows, wet heathland, riverbanks & bogs.	Acidic		✓						✓	✓	Birds, Insects
Buckthorn - Purging	*Rhamnus cathartic*	0-5m	Grows well in most soils & sunny conditions. Not	Alkaline		✓							✓	Birds, Insects

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Cork County Council Recommended List of Native Tree and Shrub Species for Residential & Industrial Developments														
Native Tree & Shrub Species	Scientific Name	Height (m)	Site Preferences	Soil PH	Tolerates shade	Suitable for					Tolerates Coastal Sites	Conspicuous Flowers / Catkins	Fruit / Berries / Nuts	Biodiversity Value
						Natural Hedgerow	Open Space	Garden	Street Trees	Industrial Sites				
			tolerant of heavy shade or very dry sites.											
Cherry - Bird	*Prunus padus*	10-20m	Commonly found in wet woodland, hedgerows & stream & riverbanks. Does not like exposed sites.	Acidic to Neutral			✓	✓	✓	✓		✓	✓	Birds, Insects, Mammals
Cherry - Wild	*Prunus avium*	10-20m	Grows best in full sunlight & fertile soil. Can be very sensitive to poor soil aeration so should not be planted in heavy, frequently waterlogged or compacted soil. Observed to have some tolerance to air pollution.	Neutral to Alkaline	✓		✓	✓				✓	✓	Birds, Insects, Mammals
Crap Apple	*Malus sylvestris*	5-10m	Thrives best in heavy, moist, well-drained soil & areas of scrub. Low tolerance to waterlogged sites. Trees production of nectar, pollen and fruit optimised in more open environments.	Neutral to Alkaline		✓	✓	✓		✓		✓	✓	Birds, Insects, Mammals
Dog Rose	*Rosa canina*	0-5m	Found in a wide variety of conditions. Does not like wet soils or exposed sites.	Neutral to Alkaline		✓						✓	✓	Birds, Insects, Small Mammals
Elder	*Sambucus nigra*	5-10m	Grows in woodland, scrub, wasteland & along hedgerows. Suitable as an understorey tree in new woodland. Low tolerance to waterlogged sites.	Neutral to Alkaline		✓	✓	✓				✓	✓	Birds, Insects, Mammals, Fungi

Cork County Council recommended list of native tree and shrub species. Prepared by CCC Ecology Office, Ver 2, June 2022.

Cork County Council Recommended List of Native Tree and Shrub Species for Residential & Industrial Developments														
Native Tree & Shrub Species	Scientific Name	Height (m)	Site Preferences	Soil PH	Tolerates shade	Suitable for					Tolerates Coastal Sites	Conspicuous Flowers / Catkins	Fruit / Berries / Nuts	Biodiversity Value
						Natural Hedgerow	Open Space	Garden	Street Trees	Industrial Sites				
Elm - Wych	*Ulmus glabra*	20m+	Found in a wide variety of conditions. Prefers fertile free draining soils. Fast growing. Good tolerance to salt and air pollution. Does not like very dry sites.	Neutral to Alkaline	✓		✓				✓			Insects, Squirrels, Lichens, Deadwood
Gorse	*Ulex Europeaus & Ulex gallii*	0-5m	Prefers well drained sandy/acid soil. Does not like poorly drained heavy clay soils.	Acidic to Alkaline		✓					✓	✓		Birds, Insects
Guelder Rose	*Viburnum opulus*	0-5m	Found in damp places along riversides & in fens, scrub & old hedgerows. Does not like acid soils.	Neutral to Alkaline	✓	✓						✓	✓	Birds, Insects, Small Mammals
Hawthorn / Whitethorn	*Crataegus monogyna*	5-10m	Found in a wide variety of conditions but commonly found growing in hedgerows, woodland & scrub. It will grow in most soils, but flowers & fruits best in full sun. Tolerant of urban pollution. Does not thrive in wet sites or very acid soils. Suitable as an understorey tree in new woodland. Can grow to 15m+	Neutral to Alkaline	✓	✓	✓	✓		✓	✓	✓	✓	Birds, Insects, Small Mammals

Cork County Council recommended list of native tree and shrub species. Prepared by CCC Ecology Office, Ver 2, June 2022.

Cork County Council Recommended List of Native Tree and Shrub Species for Residential & Industrial Developments														
Native Tree & Shrub Species	Scientific Name	Height (m)	Site Preferences	Soil PH	Tolerates shade	Suitable for					Tolerates Coastal Sites	Conspicuous Flowers / Catkins	Fruit / Berries / Nuts	Biodiversity Value
						Natural Hedgerow	Open Space	Garden	Street Trees	Industrial Sites				
Hazel	*Corylus avellana*	5-10m	Prefers heavier fertile soils. Found in the understorey of woodland, & in scrub & hedgerows. Does not like acid soils. Suitable as an understorey tree in new woodland. Low tolerance to waterlogging.	Neutral to Alkaline	✓	✓	✓	✓				✓	✓	Birds, Insects, Squirrels, Small Mammals, Mosses, Lichens
Holly	*Ilex aquifolium*	10-20m	Hardy species. Found commonly in woodland, scrub & hedgerows. Tolerant of urban pollution. Does not like wet, poorly drained sites. Suitable as an understorey tree in new woodland.	Acidic to Neutral	✓	✓	✓	✓			✓	✓	✓	Birds, Insects, Small Mammals, Lichens
Honeysuckle	*Lonicera periclymenum*	5-10m	Climber. Occurs naturally in woodland, scrub or hedgerows.	Acidic to Neutral	✓	✓		✓		✓		✓	✓	Birds, Insects
Juniper	*Juniperus communis*	5-10m	Thrives in moorland & in rocky areas. Very tolerant of exposure. Low tolerance to shade.	Neutral to Alkaline			✓	✓					✓	Birds, Insects
Oak - Pedunculate	*Quercus robur*	20m+	Prefers clay soils & damp lowlands. Must have plenty of space. Does not like badly drained infertile soils. Observed to have some tolerance to salt and air pollution.	Neutral			✓				✓		✓	Birds, Bats, Insects, Squirrels, Small Mammals, Lichens, Deadwood, Fungi

Cork County Council recommended list of native tree and shrub species. Prepared by CCC Ecology Office, Ver 2, June 2022.

Cork County Council Recommended List of Native Tree and Shrub Species for Residential & Industrial Developments														
Native Tree & Shrub Species	Scientific Name	Height (m)	Site Preferences	Soil PH	Tolerates shade	Suitable for					Tolerates Coastal Sites	Conspicuous Flowers / Catkins	Fruit / Berries / Nuts	Biodiversity Value
						Natural Hedgerow	Open Space	Garden	Street Trees	Industrial Sites				
Oak - Sessile	*Quercus petraea*	20m+	Very frequent on acidic soils in mountainous areas. Must have plenty of space. More shade tolerant than Pedunculate Oak. Does not like badly drained infertile soils. Observed to have some tolerance to salt and air pollution. Sessile Oak is the National tree of Ireland.	Acidic to Neutral			✓				✓		✓	Birds, Bats, Insects, Squirrels, Small Mammals, Lichens, Deadwood, Fungi
Rowan / Mountain Ash	*Sorbus aucuparia*	10-20m	Very hardy. Grows in poor thin acid soils. Tolerant of exposed sites & urban pollution. Can be very sensitive to poor soil aeration so should not be planted in heavy, frequently waterlogged or compacted soil. Very sensitive to herbivore browsing in establishment.	Acidic to Neutral		✓	✓	✓	✓	✓	✓	✓	✓	Birds, Insects, Lichens
Scots Pine	*Pinus syvestris*	20m+	Prefers light sandy soils/also peaty acid soils. Thrives in heathland. Does well on dry sites. Does not like limestone soils or exposure to sea winds. Low tolerance to shade and herbivore impacts.	Acidic to Neutral			✓						✓	Birds, Bats, Insects, Mammals, Lichens
Spindle	*Euonymous eoropaeus*	5-10m	Found in a wide variety of conditions. It thrives in limestone and shale soils. Found commonly on the edges of forests & in	Neutral to Alkaline	✓	✓	✓	✓			✓		✓	Birds, Insects

Cork County Council recommended list of native tree and shrub species. Prepared by CCC Ecology Office, Ver 2, June 2022.

Cork County Council Recommended List of Native Tree and Shrub Species for Residential & Industrial Developments														
Native Tree & Shrub Species	Scientific Name	Height (m)	Site Preferences	Soil PH	Tolerates shade	Suitable for					Tolerates Coastal Sites	Conspicuous Flowers / Catkins	Fruit / Berries / Nuts	Biodiversity Value
						Natural Hedgerow	Open Space	Garden	Street Trees	Industrial Sites				
			hedges, scrub & hedgerows. Suitable as an understorey tree in new woodland.											
Whitebeam	*Sorbus hibernica*	10-20m	Found in a wide variety of conditions. Tolerates coastal exposure, rocky ground & fairly damp sites. Can be very sensitive to poor soil aeration so should not be planted in heavy, frequently waterlogged or compacted soil. This tree only occurs in Ireland and is one of our few endemic tree species.	Neutral to Alkaline	✓		✓	✓	✓		✓	✓	✓	Insects
Willow	*Salix spp.*	5-10m	Found in a wide variety of conditions (depending on species). Prefers wet ground & watercourse banks. Good for stabilising riverbanks. Fast growing. Do not like dry sites. Some species can grow to 15m+. Some species can hybridise freely.	Alkaline			✓			✓	✓	✓		Birds, Insects, Lichens, Fungi, Deadwood
Yew	*Taxus baccata*	10-20m	Prefers to grow in well-drained soil. Tolerant of exposure & urban pollution. Slow growing. Does not like very wet sites. Also used as a hedging plant. Can grow to 20m+.	Neutral to Alkaline	✓		✓	✓		✓			✓	Birds, Insects, Small Mammals.

Appendix D

Regulation 54 Derogation

Derogation Number
DER-BAT-2025-227

EUROPEAN COMMUNITIES (BIRDS AND NATURAL HABITATS) REGULATIONS, 2011 (S.I. No 477 of 2011)

DEROGATION

Granted under Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations 2011, hereinafter referred to as "the Habitats Regulations".

The Minister for Housing, Local Government & Heritage, in exercise of the powers conferred on him by Regulation 54 of the Habitats Regulations hereby grants to **Conor McCarthy** of **Ballinacurra Project Limited Partnership, Great Island Enterprise Park, Ballincollig, County Cork** a derogation. It is stated that this derogation is issued:

A. In the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment
B. As there is no satisfactory alternative, and the action authorised by this derogation will not be detrimental to the maintenance of the population of **bats** referred to below at a favourable conservation status in their natural range.

This derogation authorises the following:
1. Roost disturbance
2. Actions authorised within the derogation

The derogation is issued in respect of the following **bat species**:

- **Brown Long-Eared Bat** **Plecotus Auritus**
- **Common Pipistrelle** **Pipistrellus Pipistrellus**
- **Soprano Pipistrelle** **Pipistrellus Pygmaeus**

Terms and Conditions

1. This derogation is granted solely to allow the activities specified in connection with the works located at **Former Ballinacurra Mills, Ballinacurra, Co. Cork**, for **Conor McCarthy.**
2. All activities authorised by this derogation, and all equipment used in connection herewith, shall be carried out, constructed and maintained (as the case may be) so as to avoid unnecessary injury or distress to any species of **BAT**. Anything done other than in accordance with the terms of this derogation may constitute an offence
3. This derogation may be modified or revoked, for stated reasons, at any time.
4. The mitigation measures outlined in the application report (**Survey Report Ballinacurra Mills LRD, Co. Cork.**), together with any changes or clarification agreed in correspondence between NPWS and the agent or applicant, are to be carried out. Strict adherence must be paid to all the proposed measures in the application.
5. The actions which this derogation authorise shall be completed between **25th April – 31st December 2025, inclusive.**
6. The works will be supervised by bat ecologist(s): **Tom O'Donnell**
7. If this derogation addresses works that are subject of a planning application, no such works permitted under this derogation can occur until planning permission is granted.
8. If this derogation expires prior to works permitted under this derogation commencing, a new application must be sought in advance, including the provision of any updated data or reports.
9. This derogation shall be produced for inspection on a request being made on that behalf by a member of An Garda Síochána or an authorised NPWS officer appointed under Regulation 4 of the Habitats Regulations.
10. The local **NPWS Divisional Manager,** seamus.hassett@npws.gov.ie**,** must be contacted prior to the commencement of any activity, and if bats are detected on site during the course of the work, under the terms of this derogation.
11. On completion of the actions which this derogation authorises, all recordings of bat species affected will be made using the standardised data form provided below and must be submitted to the NPWS **within four weeks of the expiry date of this licence**. Included with the below returns form, a report will also be submitted to wildlife.reports@npws.gov.ie detailing results of works and success of mitigation. **Both documents must be submitted to constitute a derogation return.**

For the Minister for Housing, Local Government & Heritage

(an officer authorised by the Minister to sign on his behalf)

25 April 2025

Any query in relation to this derogation should be sent to reg54derogations@npws.gov.ie

Derogation Number
DER-BAT-2026-52

EUROPEAN COMMUNITIES (BIRDS AND NATURAL HABITATS) REGULATIONS, 2011 (S.I. No 477 of 2011)

DEROGATION

Granted under Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations 2011, hereinafter referred to as "the Habitats Regulations".

The Minister for Housing, Local Government & Heritage, in exercise of the powers conferred on him by Regulation 54 of the Habitats Regulations hereby grants to **Conor McCarthy** of **Ballinacurra Project Limited Partnership, Great Island Enterprise Park, Ballinacollig, County Cork, P31 P973** a derogation. It is stated that this derogation is issued:

A. In the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment
B. As there is no satisfactory alternative, and the action authorised by this derogation will not be detrimental to the maintenance of the population of **bats** referred to below at a favourable conservation status in their natural range.

This derogation authorises the following:

1. Roost disturbance
2. Actions authorised within the derogation

The derogation is issued in respect of the following **bat species**:

- **Brown Long-Eared Bat** **Plecotus Auritus**
- **Common Pipistrelle** **Pipistrellus Pipistrellus**
- **Soprano Pipistrelle** **Pipistrellus Pygmaeus**

Terms and Conditions

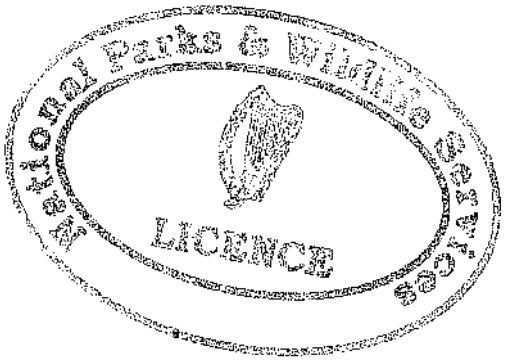
1. This derogation is granted solely to allow the activities specified in connection with the works located at **Former Ballinacurra Mills, Ballinacurra, County Cork** for **Conor McCarthy**
2. All activities authorised by this derogation, and all equipment used in connection herewith, shall be carried out, constructed and maintained (as the case may be) so as to avoid unnecessary injury or distress to any species of **BAT**. Anything done other than in accordance with the terms of this derogation may constitute an offence
3. This derogation may be modified or revoked, for stated reasons, at any time. In addition, the Minister reserves the right to revoke the derogation where updated information indicates that the basis upon which the derogation was granted has materially changed.
4. The mitigation measures outlined in the application report **(Derogation Licence Application and Bat Survey Report Ballinacurra Mills LRD, Co. Cork.)** together with any changes or clarification agreed in correspondence between NPWS and the agent or applicant, are to be carried out. Strict adherence must be paid to all the proposed measures in the application.
5. The actions which this derogation authorise shall be completed between **22nd January 2026 – 31st December 2027, inclusive.**
6. The works will be supervised by bat ecologist(s): **Tom O'Donnell, Colm Breslin, Oisin O'Sullivan, Claire McCarthy**
7. The derogation does not provide consent to proceed with any works that may also be subject to another approval (for example, planning permission).
8. The derogation is based upon information provided in the application. Where this information may cease to be accurate due to the passage of time or changes to the circumstances giving rise to the need for the derogation, the derogation holder is responsible for notifying the NPWS.
9. If this derogation expires prior to works permitted under this derogation commencing, a new application must be sought in advance, including the provision of any updated data or reports.
10. This derogation shall be produced for inspection on a request being made on that behalf by a member of An Garda Síochána or an authorised NPWS officer appointed under Regulation 4 of the Habitats Regulations.
11. The local **NPWS Divisional Manager – Seamus Hassett,** seamus.hassett@npws.gov.ie**,** must be contacted prior to the commencement of any activity, and if bats are detected on site during the course of the work, under the terms of this derogation.
12. On completion of the actions which this derogation authorises, all recordings of bat species affected will be made using the standardised Returns Form and must be submitted to the NPWS within **four weeks of the expiry of the derogation or the 31st January each year**, should the derogation run for longer than one calendar year. Additionally a report will also be submitted detailing results of works and success of mitigation. **Both documents must be submitted to constitute a derogation return** and should be submitted to wildlife.reports@npws.gov.ie

For the Minister for Housing, Local Government & Heritage

(an officer authorised by the Minister to sign on his behalf)

22 January 2026

Any query in relation to this derogation should be sent to reg54derogations@npws.gov.ie



O'DONNELL ENVIRONMENTAL

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