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Bat Report in support of Derogation

PRESENTED TO

Dungrey Limited
Proposed Residential Development at Riverside Works, Bray, Co. Wicklow

January 2025

Environmental Consultancy Services

DOCUMENT CONTROL SHEET

Applicant	Dungrey Limited
Project Title	Proposed Residential Development at Riverside Works, Bray, Co. Wicklow
Document Title	Bat Report in support Derogation

Revision	Status	Author(s)	Reviewed	Approved	Issue Date
0.0	Draft for internal Review	SC *Ecologist*	BT *Ecologist*	-	-
1.0	Draft for Client	SC *Ecologist*	BT *Ecologist*	*SOD* *Principal Ecologist*	19/12/2024
2.0	Final	SC *Ecologist*	BT *Ecologist*	*SOD* *Principal Ecologist*	02/01/2025

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1 INTRODUCTION

1.1 Background

Enviroguide Consulting was commissioned by Dunmoy Properties Limited on behalf of Dungrey Limited, the Applicant to prepare a Bat Report for a Proposed Residential Development at Riverside Works, Bray, Co. Wicklow, hereafter referred to as 'Proposed Development' or 'Site', when referring to the application area.

Enviroguide conducted a preliminary ecological appraisal (PEA) of the Site on the 3rd of January 2024 to identify the habitat suitability and roosting potential in both built structures and trees where present on Site to further inform targeted surveys. The targeted surveys then comprised of three dusk emergence surveys in line with best practice guidelines (Collins, 2023 and Marnell *et al.,* 2022).

1.2 Quality Assurance and Competence

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

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

All surveying and reporting have been carried out by qualified and experienced ecologists and environmental consultants. Shane Connolly (SC), ecologist with Enviroguide conducted the necessary data analysis and authored this report. Emergence surveys were completed by Enviroguide ecologists Bryan Thompson (BT), Brian McCloskey (BMcC), Charith Kumar (CK), Katie Connolly (KC) and Kelly Macken (KM).

SC is an experienced Ecologist with three years in the consulting sector. SC holds a B.Sc. (Hons) in Botany from the University of Galway. SC has extensive experience in surveying bats, birds, mammals, plants, habitats, reptiles, amphibians, and invasive species and holds a valid bat disturbance licence (DER/BAT 2024-107). SC's experience in ecological report writing extends from Appropriate Assessment (AA) Screenings and Natura Impact Statements (NIS) to Ecological Impact Assessments (EcIA), Bat Reports, Constraints Reports, Invasive Species Management Plans (ISMP), and supporting submissions in Environmental Impact Assessment Report (EIAR) chapters.

BT has a B.Sc. in Environmental Biology (Hons) and a PhD in Marine Ecology from University College Dublin, and a wealth of experience in desktop research, literature scoping-review, and report writing, as well as practical field experience (Habitat

mapping surveys, intertidal surveys, vantage point surveys, winter bird surveys, fresh water macro-invertebrate identification etc.). BT has experience in compiling Biodiversity Chapters of Environmental Impact Assessment Reports (EIARs), AA screening and NIS reports, and in the overall assessment of potential effects to ecological receptors from a range of developments.

KC has a B.Sc. in Zoology and an M.Sc. in Applied Environmental Science from University College Dublin. KC's experience includes desktop research, report writing, animal behaviour surveys, invasive species surveys, vegetation surveys, bat emergence surveys, genetic/haplotype mapping and Appropriate Assessments. KC has experience in assessing terrestrial, freshwater, coastal and tropical environments and has contributed to the preparation of AA Screenings and Preliminary Ecological Appraisals.

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

KM was an intern Ecologist with Enviroguide, with experience in desktop research, report writing, and QGIS mapping, as well as practical field and laboratory experience. Field experience includes bat surveys, freshwater macroinvertebrate surveys, and trail camera set-up and analysis. KM has prepared several Municipal District Summaries and Stage I Appropriate Assessment Reports.

1.3 Policy and Legislation

European legislation, specifically the Habitats Directive (92/43/EEC), provides protection for all bats in Ireland. These species are listed in Annex IV of the Directive, which mandates strict protection for individual bats, their breeding sites, and resting places. The Lesser Horseshoe bat (*Rhinolophus hipposideros*) is additionally listed in Annex II of the Directive, necessitating the establishment of conservation areas for this species. Under this Directive, Ireland is obliged to maintain the favourable conservation status of Annex-listed species. This Directive has been transposed into Irish law through the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011).

All bat species are protected under the Wildlife Acts 1976 as amended, which make it an offence to wilfully interfere with or destroy the breeding or resting place of these species however, the Acts permit limited exemptions for certain kinds of development which would require a derogation licence to be obtained from the NPWS with input from a qualified bat specialist. All species of bats in Ireland are listed on Schedule 5 of the 1976 Wildlife Act, and are therefore subject to the provisions of Section 23, which make it an offence to:

1. Intentionally kill, injure or take a bat.
2. Possess or control any live or dead specimen or anything derived from a bat.

3. Wilfully interfere with any structure or place used for breeding or resting by a bat.
4. Wilfully interfere with a bat while it is occupying a structure or place which it uses for that purpose.

1.4 Site Description

The Site is located at Riverside Works, Bray, Co. Wicklow (Figure 1). The Site is situated in an urban environment. The Site is approximately 0.29ha, located west off of Main Street immediately south of Fran O'Toole Bridge, approximately 35m south of the River Dargle and 800m west of Bray Strand. The Site bounded on the north and east by the Maltings road, on the south by residential dwellings, and to the west by a residential carpark (Figure 2).

1.5 Description of the Proposed Development

The Proposed Development comprises the demolition of the existing stone walled warehouse and industrial style shed structures on the site and the construction of a mixed use residential and commercial development comprising the construction of an 7-no. storey mixed use apartment building of 58 no. new apartment units (14 no. 1 bed, 26 no. 2 bed and 18 no. 3 bed) and 4 no. commercial units at ground floor level, and 1 no. 3 bed duplex unit in a separate 3 no. storey building.

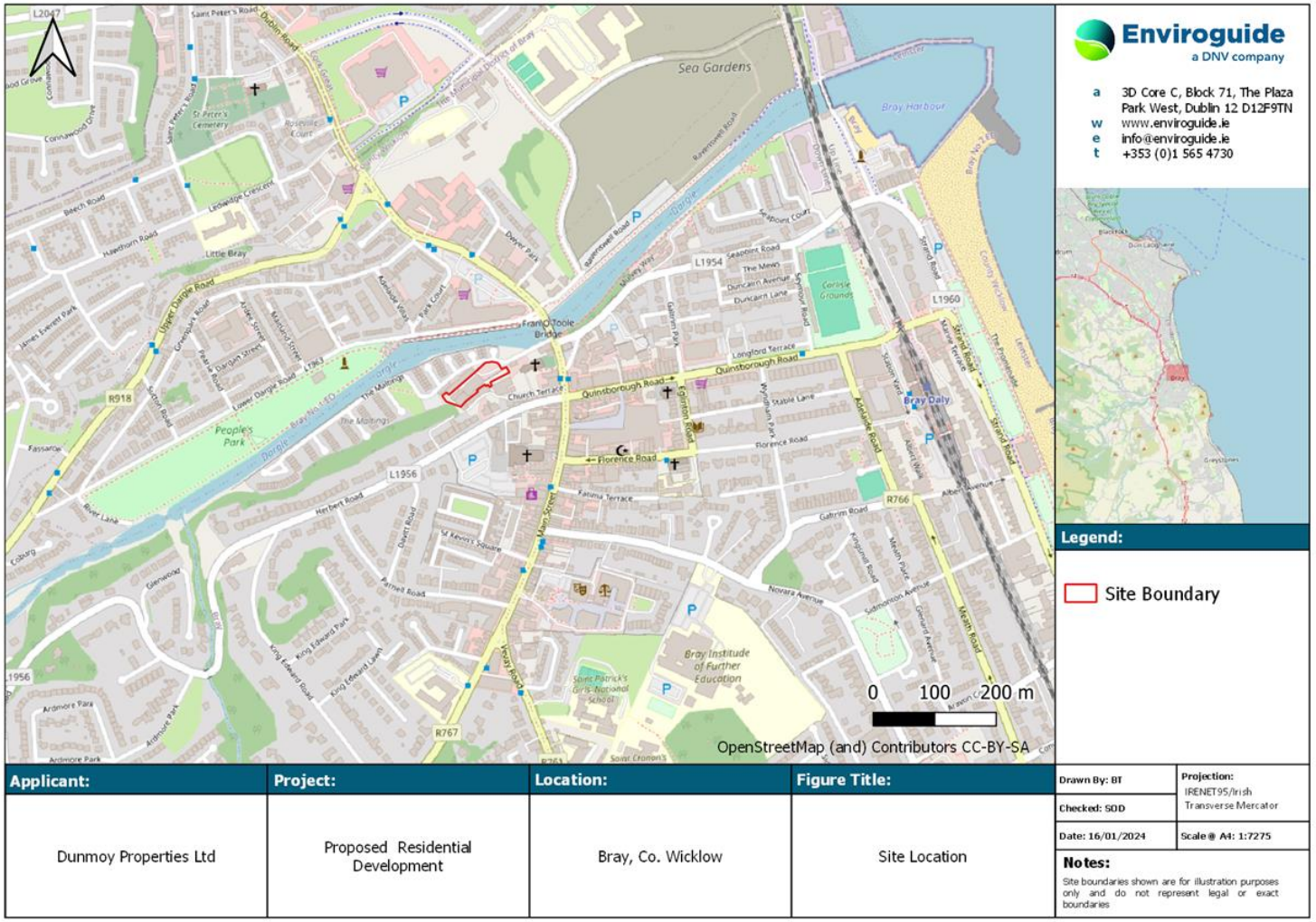

FIGURE 1. SITE LOCATION.

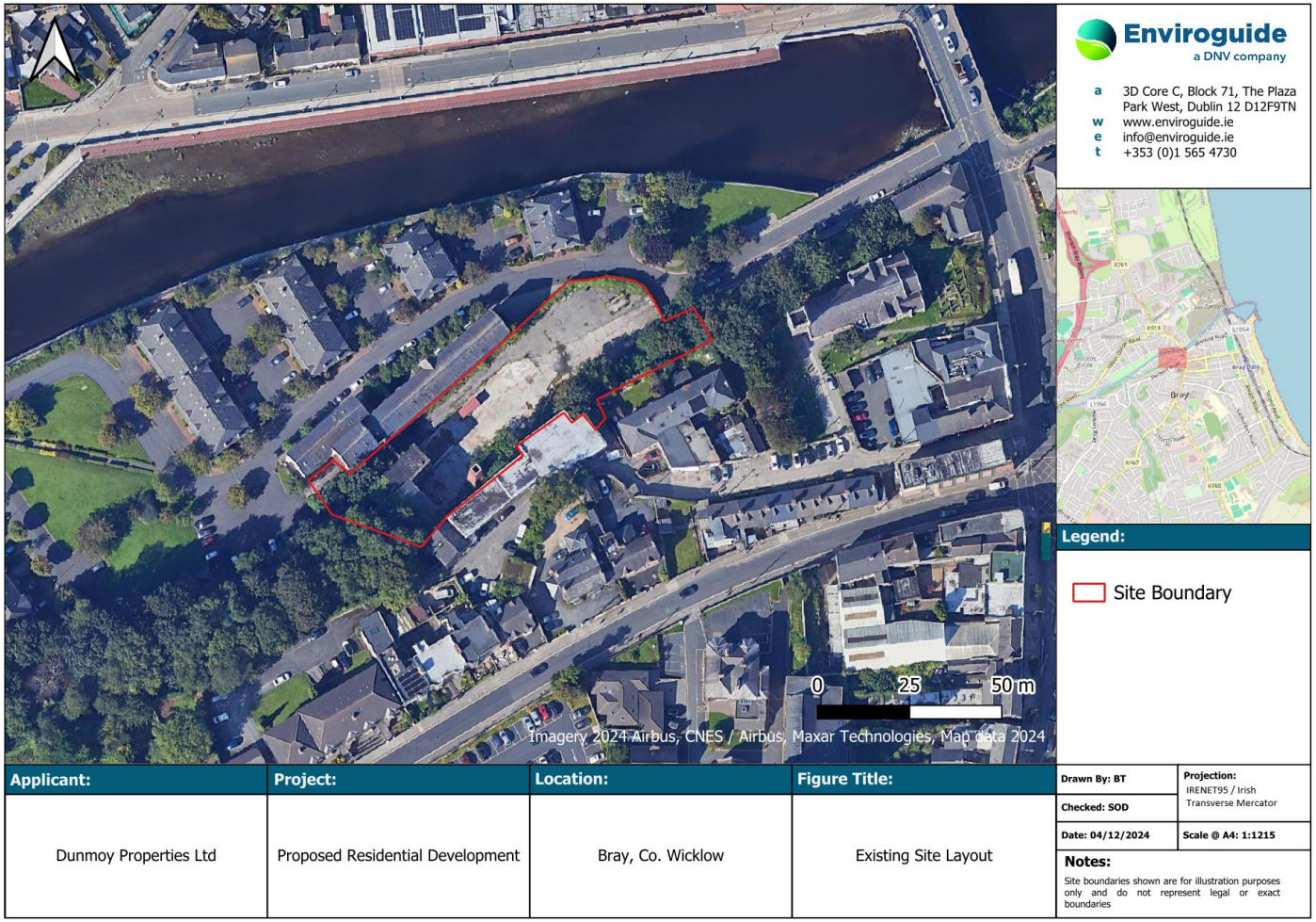

FIGURE 2. EXISTING SITE LAYOUT.

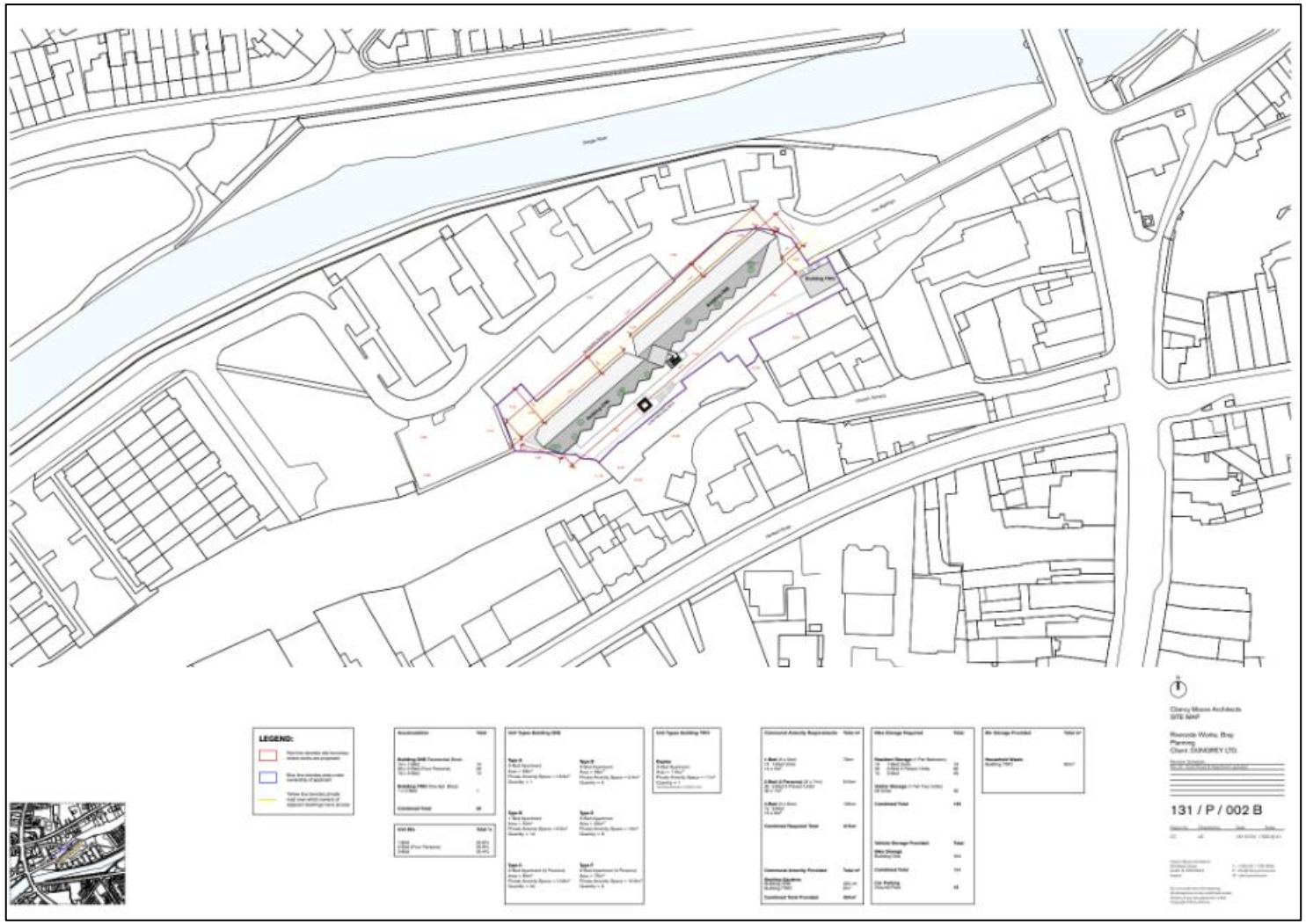

FIGURE 3. PROPOSED SITE LAYOUT

2 RELEVANT LEGISLATION

In view of their sensitive status across Europe, all species of bat have been listed on Annex IV of the EC 'Habitats and Species Directive', while the Lesser-Horseshoe bat is given further protection and listed on Annex II of the Directive. The Habitats Directive was transposed into Irish law as the European Communities (Natural Habitats) Regulations, 1997 and combined with the Wildlife Acts 1976 (as amended), which ensures that individual bats, their breeding sites and resting places are fully protected in Irish law. This has important implications for those who own or manage sites where bats occur.

All bat species are protected under the Wildlife Acts 1976 as amended, which make it an offence to wilfully interfere with or destroy the breeding or resting place of these species however, the Acts permit limited exemptions for certain kinds of development which would require a derogation licence to be obtained from the NPWS with input from a qualified Bat Specialist. All species of bats in Ireland are listed on Schedule 5 of the 1976 Act, and are therefore subject to the provisions of Section 23, which make it an offence to:

1. Intentionally kill, injure or take a bat.
2. Possess or control any live or dead specimen or anything derived from a bat.
3. Wilfully interfere with any structure or place used for breeding or resting by a bat.
4. Wilfully interfere with a bat while it is occupying a structure or place which it uses for that purpose.

3 METHODOLOGY

3.1 Desk Study

An updated desk study was carried out in December 2024 to collate and review available information, datasets, and documentation sources relevant for the completion of this Report. The desk study relied on the following sources:

- Relevant bat maps on the National Biodiversity Data Centre (NBDC) website (Lundy *et al.,* 2011).
- Review of NPWS Article 17 Report (NPWS, 2019).
- Information on the network of European Sites, boundaries, QIs and conservation objectives, obtained from the NPWS at *www.npws.ie*.
- Satellite imagery and mapping obtained from various sources and dates including Google, Digital Globe, Bing, and Ordnance Survey Ireland.
- Bat Conservation Trust (2023) Guidance Note GN08/23 Bats and artificial lighting at night.
- Collins, J. (2023). Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edition). The Bat Conservation Trust, London.
- Marnell, F., Kelleher, C. & Mullen, E. (2022) Bat mitigation guidelines for Ireland v2. Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland.

For a complete list of the documents consulted as part of this assessment, see Section 10 References.

3.1.1 Designated Sites

The potential impact of the Proposed Development on sites designated for the protection of bats was assessed. The NPWS provides data on rare and protected species, as well as sites designated for the conservation of habitats, flora, and fauna. A comprehensive search was undertaken in December 2024 to identify sites designated for bat conservation within a 15km radius and with connectivity to the Site of the Proposed Development as this is typically the maximum distance in which bats will commute (Shiel *et al.,* 1999; Waters *et al.,* 1999; BCI, 2012; Hundt, 2012).

3.1.2 NBDC Records

Numerous studies have been conducted on bat foraging ranges, also known as the Core Sustenance Zone (CSZ). A CSZ is defined as “the area surrounding a communal bat roost within which habitat availability and quality will have a significant influence on the resilience and conservation status of the colony using the roost.”.

Sheil *et al.,* (1999) found Leisler’s bats (*Nyctalus leisleri*) had a maximum foraging range of 13.4km, while Waters *et al.,* (1999) found Leisler’s bats flew a mean maximum distance of 4.2km from the roost. Collins (2023) provides a table depicting the CSZ of UK and Irish bat species. Irish bat species CSZ’s are typically less than 5km (Figure 4).

Table 3.5. CSZs for different UK bat species.

Species	CSZ radius (km)	No. of bats studied	No. of studies	Confidence in zone size[a]
Lesser horseshoe[b]	2	83	4	Good
Greater horseshoe[b]	3	39	4	Moderate
Daubenton's bat	2	7	2	Poor
Whiskered/Brandt's bat	1	24	1	Poor
Natterer's bat	4	53	2	Good
Bechstein's bat[b]	1	70	4	Moderate
Noctule	4	20	1	Poor
Leisler's bat	3	20	2	Moderate
Common pipistrelle	2	23	1	Poor
Soprano pipistrelle	3	91	3	Good
Nathusius' pipistrelle	3	9	2	Poor
Serotine	4	13	1	Poor
Barbastelle[b]	6	69	3	Moderate
Brown long-eared	3	38	1	Poor
Grey long-eared[b]	3	20	1	Moderate

a Confidence is based on the number of bats and number of studies used to inform the calculation of CSZ.
b There may be justification with Annex II and other rare species to increase the CSZ to reflect use of the landscape by all bats in a population. Bechstein's bat and grey long-eared bat both have very specific habitat requirements so CSZs may not work as well for these species and the distances quoted above may need to be increased to reflect this. At the time the CSZs were calculated, insufficient data was available to include Alcathoe.

FIGURE 4. CSZ RANGES OF IRISH AND UK BATS ADAPTED FROM COLLINS (2023).

The National Biodiversity Data Centre (NBDC) keep a record of nationwide bat activity. This information is visible in generated reports ranging from 1km squared to 10km squared. Considering the CSZ of Irish bats, the 10km grid square in which the Site lies (O21) was searched for records of bats to determine what species generally utilise the lands surrounding the Site.

3.1.3 NBDC Bat Landscape Suitability

The NBDC contains a map viewer based on research by Lundy *et al.,* (2011). A review of the NBDC Bat Landscapes map was conducted in December 2024 to determine the suitability of the Site and its surrounding area to support bats.

The map utilises Maximum Entropy Models to give a Bat Habitat Suitability Index (BHSI) to examine the relative importance of bat landscape and habitat associations in Ireland. The model divides the country into 1 km grid squares and ranks the habitat within the squares according to its suitability for various bat species. The index ranges from 0 to 100, with 0 being the least favourable (green) and 100 being the most favourable for bats (red). The scores are divided into five qualitative categories of suitability, namely:

- 0.0000000 - 13.000000: Low
- 13.000001 - 21.333300: Low – Medium
- 21.333301 - 28.111099: Medium
- 28.111100 - 36.444401: Medium – High
- 36.444402 - 58.555599: High

The BHSI rating for the area containing the Site was checked and is included in the results section below.

3.2 Field Surveys

A range of field surveys have been carried out at the Site to date. These are summarised in Table 1.

All surveys were carried out at the appropriate time of year during suitable weather conditions by suitably qualified ecologists. Results relevant to this Bat Report have been summarised in Section 4.

TABLE 1. FIELD SURVEYS UNDERTAKEN AT THE PROPOSED DEVELOPMENT SITE.

Survey	Surveyor(s)	Date(s)
Preliminary Habitat Appraisal and Bat Roost Assessment	Enviroguide Consulting (BT)	3rd of January 2024
Dusk Emergence Survey 1	Enviroguide Consulting (BT, BMcC, CRK, KM)	5th of June 2024
Dusk Emergence Survey 2	Enviroguide Consulting (BT, BMcC, WS, KM)	4th of July 2024
Dusk Emergence Survey 3	Enviroguide Consulting (BT, BMcC, WS, KC)	24th of August 2024

3.2.1 Preliminary Assessments

3.2.1.1 Bat Roost Assessment

3.2.1.1.1 Buildings and Structures

A daytime inspection of the Site was undertaken on the 3rd of January 2024. The aim of the inspection was to search for indication of the presence of roosting bats, and to assess the habitat for its ability to support commuting and foraging bats. Any structures (buildings, bridges, ruins etc.) and trees on Site were visually assessed with the aid of a torch and binoculars.

The roost inspection comprised a detailed inspection of structures and trees on Site. These were subject to exterior and interior inspections (where possible) to search for evidence of bat use. This includes live and dead specimens, droppings, feeding remains, oil staining and noise (Collins, 2023). Buildings were assessed for cracks and crevices, or entry points to the roof that might support roosting bats, while trees were searched for Potential Roosting Features (PRFs) such as hollow trunks, knot holes, peeling bark, splits, cracks, and crevices (Andrews, 2018).

Collins (2023) recommends that structures and trees are assessed for their ability to support roosting bats under separate categorizations using professional judgement.

A structure with roosting potential can be further divided into one of five sub-categories as presented in Table 4.1 (Collins, 2023);

- None – No habitat features on site likely to be used by any roosting bats at any time of the year.
- Negligible – No obvious features observed, however, a small element of uncertainty remains.
- Low – A structure with one or more roost features as used by individual bats opportunistically at any time of year.

- Moderate – A structure with one or more roost features that could be used by bats on a regular basis or by a larger number of bats; and
- High – A structure with one or more roost features that are obviously suitable for use by a larger number of bats on a regular basis, and potentially for longer periods of time. These features have the potential to support high conservation status roosts.

3.2.1.1.2 Trees

Trees are categorized separately according to Table 4.2 of Collins (2023). These classifications are:

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

Where a tree contains at least one PRF, each PRF is further assessed according to Table 6.2 (Collins, 2023). PRF's are scored as either:

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

3.2.1.2 Bat Habitat Suitability Assessment

A Bat Habitat Suitability Assessment was carried out in conjunction with the roost assessment on the 3rd of January 2024. This assessment evaluated the habitats present on Site and in the wider area for bat foraging and commuting suitability. Habitat suitability is assessed qualitatively from None to High as per Collins (2023):

- None - No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flight-lines, or generate/shelter insect populations available to foraging bats)
- Negligible – No obvious habitat features on site likely to be used as flightpaths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.
- Low – Habitat that could be used by small numbers of bats as flightpaths such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
- Moderate – Continuous habitat connected to the wider landscape that could be used by bats for flightpaths such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland, or water.
- High – Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flightpaths such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats

such as broadleaved woodland, tree-lined watercourses, and grazed parkland. Site is close to and connected to known roosts).

All survey methodologies will follow those of the Bat Conservation Trust *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collins, 2023). Any further recommended bat survey work will be undertaken within the recommended survey period of May to September inclusive and as per best practice guidelines.

3.2.2 Bat Activity Surveys

3.2.3 Dusk Emergence Surveys

Dusk emergence surveys are carried out following the preliminary assessment (Table 2). The aim of a dusk emergence survey is to observe if bats are emerging from a previously identified PRF. Surveyors watch, listen and record any bats exiting/entering any PRFs identified during the daytime inspection. The survey also aims to identify bat species present on Site and gather information on foraging and commuting behaviour where possible.

Emergence surveys should be undertaken in the period from May to September in suitable weather conditions. The number of surveys required, and methodology followed during emergence/re-entry surveys is in line with best practice guidelines (Collins, 2023 and Marnell *et al*., 2022).

Surveyors were equipped with handheld full spectrum Elekon bat detectors (M and M2), redlight torches and head torches, and were positioned at locations that allowed observation of previously identified PRFs.

Species identification was made in the field where possible and behaviour such as call type, feeding indications and commuting directions were recorded. All bat echolocation was recorded for subsequent analysis to confirm species identifications. The dusk emergence surveys commenced 15 minutes before sunset and were completed for a minimum of 1.5 hours after sunset (Collins, 2023).

Emergence surveys were carried out on the building on Site. The building is one large structure with numerous sections. The building will be referred to as Building A for the remainder of the report.

TABLE 2. DUSK SURVEY EFFORT.

Date	Survey Type	Sunset	Survey Start & End	Weather Conditions
5th of June 2024	Dusk Emergence	21:49	21:34 - 23:19	Temperature: 14 °C Wind: Beaufort 1 Cloud Cover: 10 % Rain: None
4th of July 2024	Dusk Emergence	21:51	21:36 - 23:21	Temperature: 16 °C Wind: Beaufort 2 Cloud Cover: 40 % Rain: None
24th of August 2024	Dusk Emergence	20:32	20:17 - 22:02	Temperature: 15 °C Wind: Beaufort 1 Cloud Cover: 70 % Rain: None

FIGURE 5. SURVEYED BUILDINGS ON SITE AND THE VANTAGE POINTS OF SURVEYORS.

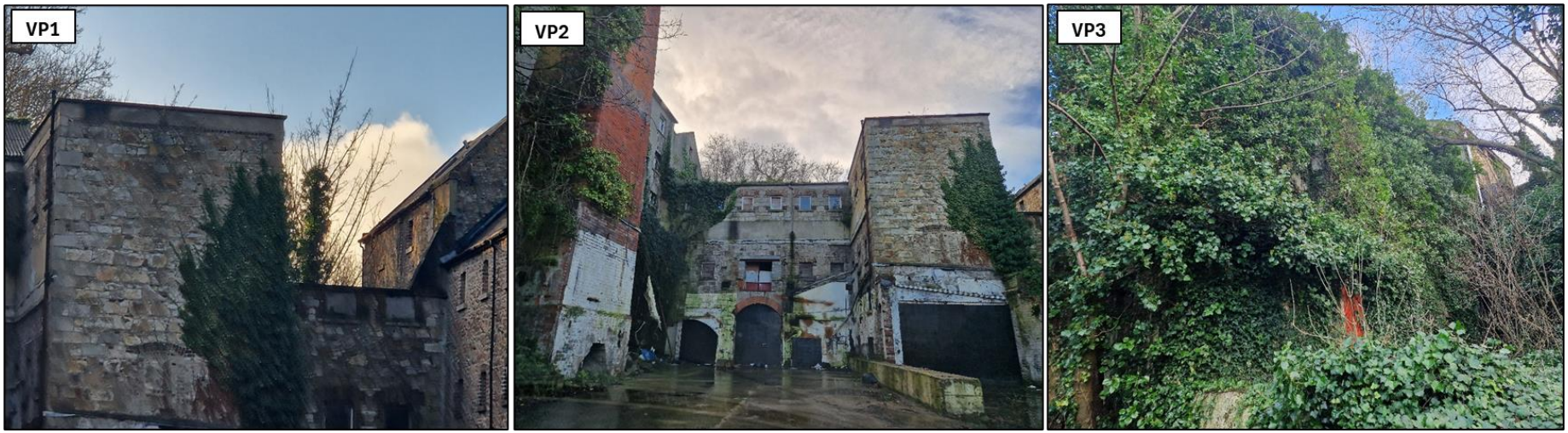

FIGURE 6. VANTAGE POINTS OF SURVEYORS (VP1, VP2, VP3) DURING EMERGENCE SURVEYS

3.2.4 Data Analysis

Species were identified from any Batlogger equipment using Kaleidoscope Pro software (Version 5.6.6) and species assigned to each record with reference to species identification guides such as Russ (2012).

Each record i.e., a sequence of bat calls/pulses, is noted as a bat pass and indicates the level of bat activity for each species recorded. It is important to note that bat passes are representative of activity levels and do not necessarily denote individual bats. For example, some bats such as pipistrelle species may continuously circle a treeline or hedgerow, and multiple calls may represent one individual circling an area. Alternatively, Leisler's bats recorded early in a survey are likely to be commuting high overhead, and each call may represent a singular bat. Therefore, a bat pass is a measure of activity and is not representative not of the number of bats present.

3.2.5 Limitations

Surveyors were positioned at ground level outside of the building for emergence surveys. During survey 1 and 3 several bats were noted entering and exiting the 3rd floor of the building through broken windows. As no surveyor was stationed inside the building, it cannot be confirmed if any of the internal PRF's on the 3rd floor are active bat roosts. However, the precautionary principle will be applied as part of the demolition and habitat compensation mitigation to prevent significant long-term impacts to individual bats or and local populations.

4 RESULTS

4.1 Desk Study

4.1.1 Designated Sites

The Lesser Horseshoe bat is the only Annex II bat species in Ireland and therefore requires the designation of Special Areas of Conservation (SAC). Lesser Horseshoe bats typically forage within 6 km of their roost (BCI, 2012) and have only been recorded in the west coast of Ireland; primarily in counties, Mayo, Galway, Clare, Limerick, Cork, and Kerry. The Proposed Development is situated outside of the current known range of this species.

There will therefore be no direct effects on Lesser Horseshoe bats as the Proposed Development is located entirely outside any designated sites for this species. No indirect impacts on this species as a result of disturbance, displacement or loss of foraging habitat are anticipated.

4.1.2 NBDC Records

A desktop review was carried out to identify previous historical records of bat species from within the vicinity of the Site in question. The NBDC website (*www.nbdc.ie*) was accessed in December 2024 and a search of the relevant 10km grid square (O21) was conducted for records of bats in the vicinity of the Site. Records for Seven bat species were found and are displayed in Table 3.

TABLE 3. RECORDS OF BATS FOR THE 10KM GRID SQUARE IN WHICH THE SITE LIES (NBDC, 2024).

Species	Grid Square	Date of last record	Database	Designation
Brown Long-eared Bat (*Plecotus auritus*)	O21	10/07/2021	National Bat Database of Ireland	• EU Habitats Directive - Annex IV • Wildlife Act 1976 (as amended)
Common Pipistrelle (*Pipistrellus pipistrellus*)	O21	21/05/2022	National Bat Database of Ireland	• EU Habitats Directive - Annex IV • Wildlife Act 1976 (as amended)
Daubenton's bat *(Myotis daubentonii)*	O21	25/08/2022	National Bat Database of Ireland	• EU Habitats Directive - Annex IV • Wildlife Act 1976 (as amended)
Leisler's bat *(Nyctalus leisleri)*	O21	11/08/2021	National Bat Database of Ireland	• EU Habitats Directive - Annex IV • Wildlife Act 1976 (as amended)
Natterer's bat *(Myotis nattereri)*	O21	03/09/2017	National Bat Database of Ireland	• EU Habitats Directive - Annex IV

				• Wildlife Act 1976 (as amended)
Soprano Pipistrelle (*Pipistrellus pygmaeus*)	O21	25/08/2022	National Bat Database of Ireland	• EU Habitats Directive - Annex IV • Wildlife Act 1976 (as amended)
Whiskered bat *(Myotis mystacinus)*	O21	28/08/2016	National Bat Database of Ireland	• EU Habitats Directive - Annex IV • Wildlife Act 1976 (as amended)

4.1.2.1 NBDC Bat Landscape Suitability

The Site is located in an area with an overall "High (39.78)" suitability for bats in general. The suitability index for specific bat species is presented in Table 4.

TABLE 4. LANDSCAPE SUITABILITY INDEX FOR INDIVIDUAL BAT SPECIES (SOURCE: NBDC).

Bat Species	Suitability Index
Daubenton's bat *(Myotis daubentonii)*	34
Whiskered bat *(Myotis mystacinus)*	43
Natterer's bat *(Myotis nattereri)*	50
Leisler's bat *(Nyctalus leisleri)*	57
Nathusius' pipistrelle (*Pipistrellus nathusii*)	6
Common Pipistrelle (*Pipistrellus pipistrellus*)	55
Soprano Pipistrelle (*Pipistrellus pygmaeus*)	51
Brown Long-eared Bat (*Plecotus auritus*)	57
Lesser horseshoe bat *(Rhinolophus hipposideros)*	5

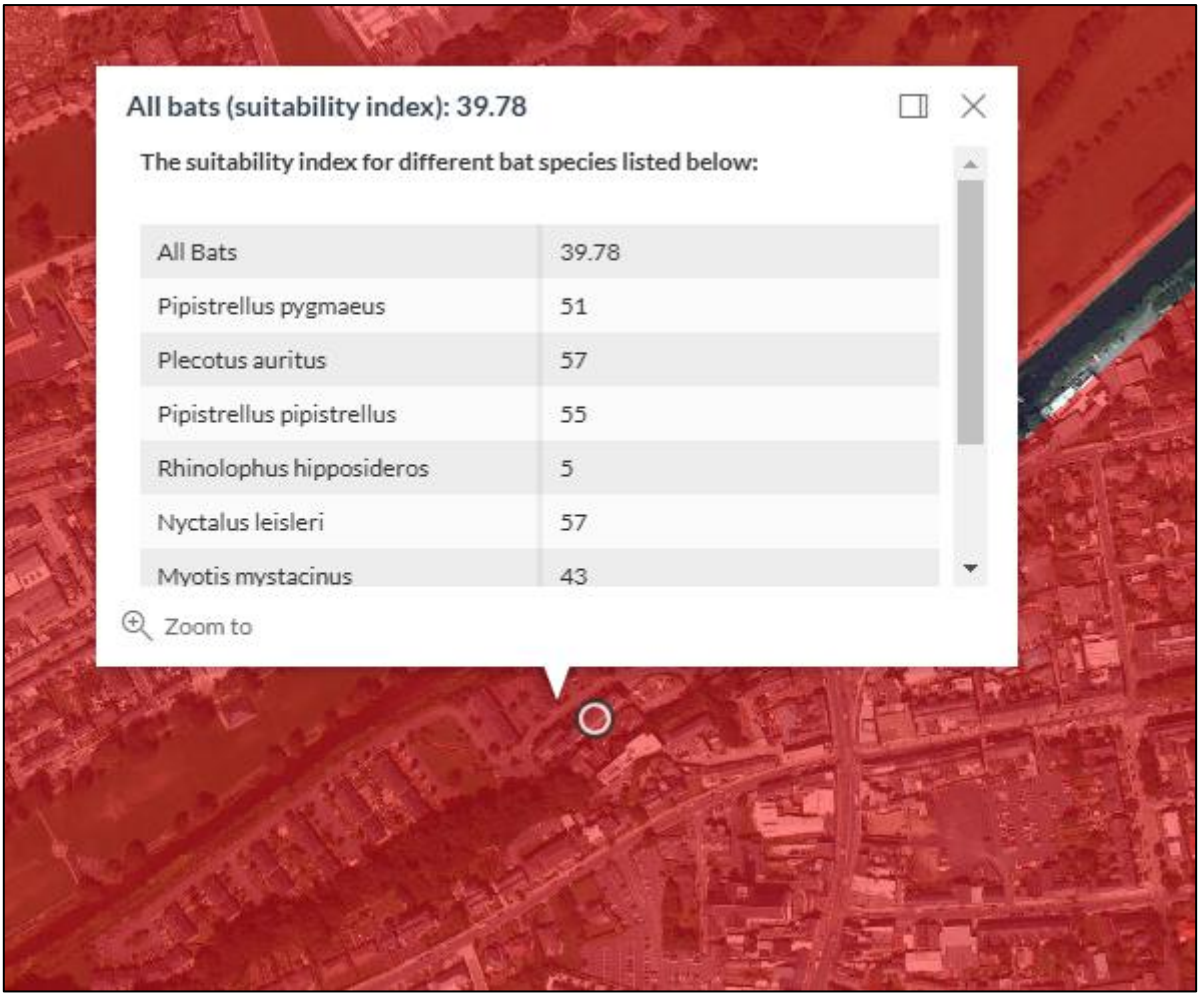

FIGURE 7. BAT LANDSCAPE SUITABILITY MODEL (ALL BATS) SURROUNDING THE PROPOSED DEVELOPMENT SITE (ADAPTED FROM NBDC).

4.2 Field Survey Results

4.2.1 Habitat Appraisal

Habitats on Site were assessed during both the desk study in December 2024 and field survey on the 3rd of January 2024 for their ability to support foraging and commuting bats, as well as the Site's connectivity to the wider landscape. A range of factors are considered in making this assessment according to Collins (2023), such as the connectivity of the Site to the wider landscape by means of treelines, hedgerows, and river corridors, the size, quality and species composition of treelines and hedgerows on Site, and the presence of any barriers to commuting for bat species.

It is determined that the Site provides "Moderate" suitability for foraging and commuting bats as per Collins (2023) given its connectively to a linear strip of woodland to the south west of the Site (Figure 2).

4.2.2 Preliminary Bat Roost Assessment

4.2.2.1 Structures and Buildings

Structures and buildings (where present) on Site were assessed for their ability to support roosting bats on the 3rd of January 2024. One building was present on Site, although it does have several facets. Details of the building are described in Table 5 along with its bat roost potential according to Collins (2023). The majority of PRF's occur in the building's envelope. The windows on the top floor of the building were broken allowing access the interior of the building. Within the building, PRF's were less common with many of the interior walls and ceilings being well intact. However, a ceiling on the 3rd floor was in poor condition missing large sections of plasterboard allowing access to the void space between the floor joists.

TABLE 5. EMERGENCE SURVEY REQUIREMENTS.

Building Description	Potential Roost Features	Collins (2023) Rating	Further Survey Required
Riverside Works	• Cracks in masonry. • Gaps beneath facia board • Lifting lead flashing • Openings in building envelope (i.e. broken windows)	High	Yes

FIGURE 8. EXTERNAL AND INTERNAL PRFS WITHIN THE BUILDING. THESE INCLUDE, MASONARY CRACKS, LIFTING LEAD FLASHING, GAPS WITHIN FACIA BOARD, VOID SPACES BETWEEN FLOOR JOISTS AND HOLES WITHIN BUILDING ENVELOPE.

4.2.2.2 Trees

No trees on Site were identified as having PRF-M features and therefore none were subject to further dusk emergence surveys.

4.2.3 Dusk Emergence Surveys

4.2.3.1 Dusk Emergence Survey 1 – 5th of June 2024

The following species were recorded utilising the Site to forage. Common pipistrelle (*Pipistrellus pipistrellus*) (n=295) was the most frequently recorded bat species, accounting for 91.98% of all bat passes. Soprano pipistrelle (*Pipistrellus pygmaeus*) (n=17) was the second most recorded species, making up 5.30% of recorded bat passes, followed by Leisler's bat (*Nyctalus leisleri*) (n=6) and Nathusius' pipistrelle (*Pipistrellus nathusii*) (n=5), which accounted for 1.87% and 1.56%, respectively. Bat passes and species composition for this survey are shown in Figure 9. The majority bats were noted flying in both a southwest and northeasterly direction over the building. During the survey bats were continuously foraging in a circular pattern infront of the building at VP1 and VP2.

During the survey, a single Common Pipistrelle bat was noted emerging at 22:10. This bat emerged from beneath the facia board of the building visible from vantage point 1 (VP1). Once emerged this bat flew over the building a south westerly direction towards the linear strip of woodland adjoining Site. It was also noted during the latter stages of the survey that bats were flying in two broken windows on the top floor of the building at VP2. Bats were only seen emerging from these same windows after they had entered the building, so it is assumed that these bats were foraging on moths inside the building. However, as there are some potential PRFs on the 3rd floor the possibility of active roosts cannot be discounted.

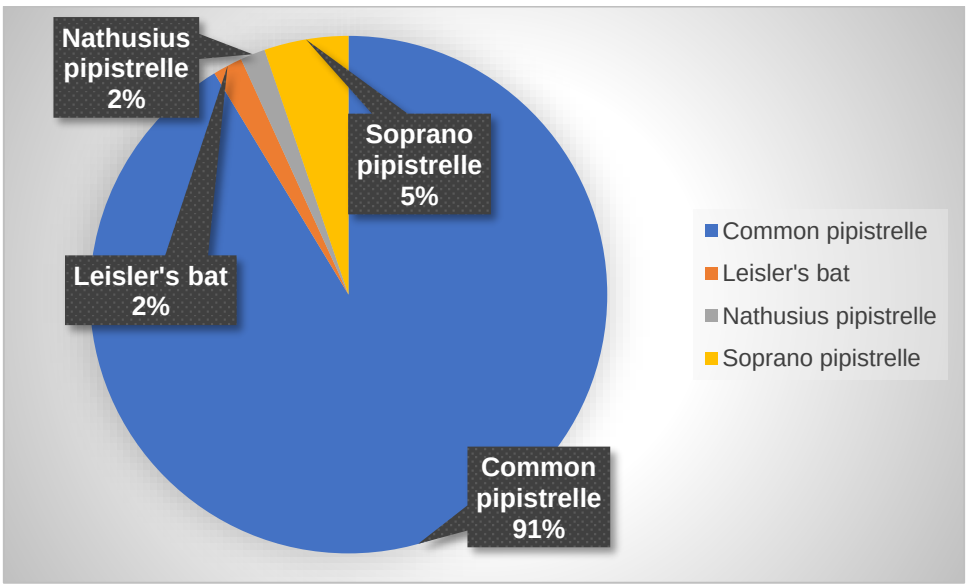

FIGURE 9. SPECIES COMPOSITION ON THE 5TH OF JUNE 2024.

4.2.3.2 Dusk Emergence Survey 2 – 4th of July 2024

Common pipistrelle (*Pipistrellus pipistrellus*) (n=760) was the most frequently recorded bat species, accounting for 97.04% of all bat passes. Soprano pipistrelle (*Pipistrellus pygmaeus*) (n=12) was the second most recorded species, making up 1.53% of recorded bat passes, followed by Leisler's bat (*Nyctalus leisleri*) (n=6) and Nathusius pipistrelle (*Pipistrellus nathusii*) (n=4), which accounted for 0.77% and 0.51%, respectively.

Bat passes and species composition for this survey are shown in Figure 10. No bats were recorded emerging from the PRF's at any vantage point during this survey.

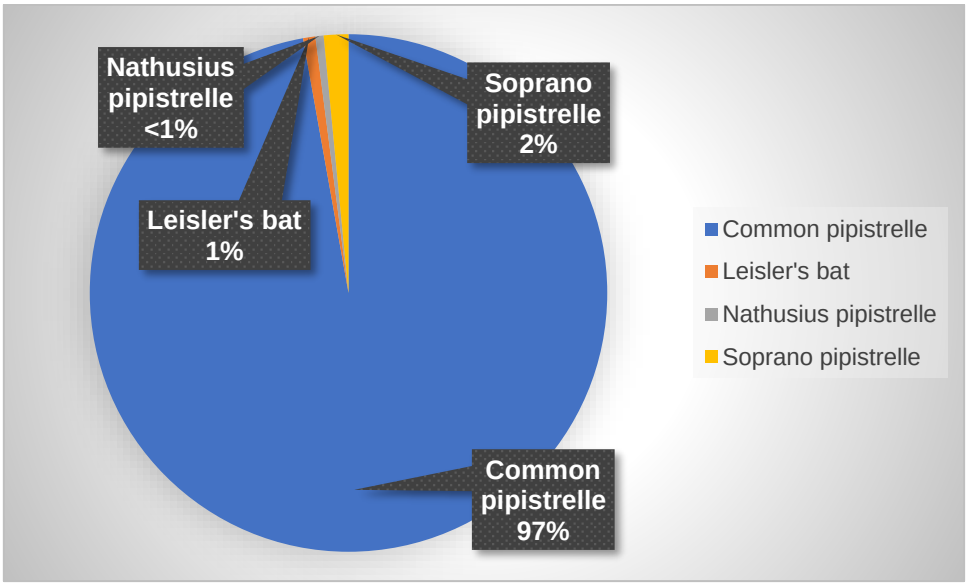

FIGURE 10. SPECIES COMPOSITION ON THE 4TH OF JULY 2024.

4.2.3.3 Dusk Emergence Survey 3 – 24th of August 2024

Common pipistrelle (*Pipistrellus pipistrellus*) (n=443) was the most frequently recorded bat species, accounting for 97.79% of all bat passes. Soprano pipistrelle (*Pipistrellus pygmaeus*) (n=6) was the second most recorded species, making up 1.32% of recorded bat passes, followed by Leisler's bat (*Nyctalus leisleri*) (n=1), which accounted for 0.22%. Bat passes and species composition for this survey are shown in Figure 11. A similar pattern of bat foraging and commuting activity that was observed during emergence survey 1 was also observed during survey 3.

Similar to first survey, a single Common Pipistrelle bat was recorded emerging from a crack in the stonework of the building at VP1 in the same vicinity where the first bat emerged during survey 1.

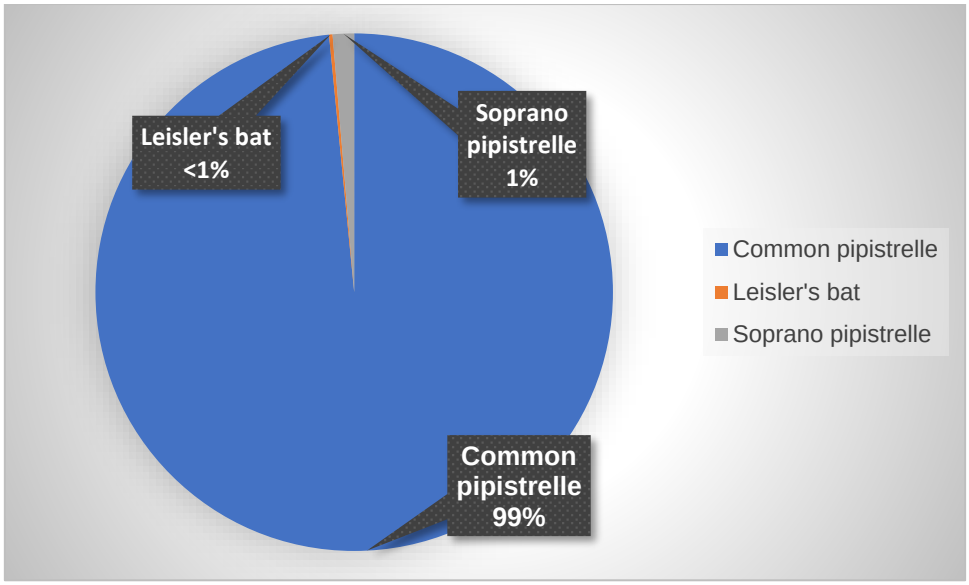

FIGURE 11. SPECIES COMPOSITION ON THE 24TH OF AUGUST 2024.

5 ASSESSMENT OF POTENTIAL IMPACTS

5.1 Construction Phase

5.1.1 Roost Loss/Disturbance

The Proposed Development requires the demolition of the buildings and as such, will result in the loss of and disturbance to a bat roost. If unmitigated, this loss could leave an important, Annex II protected species without a resting place. Increased Construction Phase lighting could also degrade the quality of and/or limit the use of a known roost.

5.2 Operational Phase

5.2.1 Increased Lighting

During the Operational Phase, there is potential for increased lighting around the buildings which are currently unlit. This could impact local bat populations by degrading the quality of and/or limiting the use of a known roost. The loss of roosting, habitat at the Site would result in long-term, moderate, negative impacts to bats utilising the Site if unmitigated.

6 NPWS CONSULTATION

Given the presence of a confirmed bat roost on-site, Enviroguide Ecologist BT consulted with Mr. John Griffin, NPWS District Conservation Officer for the Wicklow area by email between the 11/12/2024 and the 23/12/2024. John Griffin reviewed the contents of this bat report. Overall, he was satisfied with the contents of this report including the survey results and proposed mitigation and had no further comments or queries regarding this application for derogation.

7 MITIGATION

Two bats were recorded emerging from two locations, one from behind the fascia, and another from a crack in the stone. Bats were also observed entering and exiting a window on the third floor suggesting they may be a roost internally on this floor.

7.1 Construction Phase Mitigation

7.1.1 Derogation Licensing

A derogation license will be applied for from the NPWS and will be submitted to the Local Planning Authority (LPA) prior to the demolition of the building on Site as there is no suitable alternative for its retention given its derelict condition. This building was confirmed to support roosting by at least one species, likely the common pipistrelle. As such, derogation from the protection afforded by the Wildlife Act 1976 (as amended) and the habitat directive must be acquired to allow its removal.

This requires application to the NPWS and a conservation plan to ensure that bats will not be adversely affected (individually or by physical harm as a species) by the loss of the roost. The following measures will be implemented to ensure that bats are not killed or injured during the demolition works:

- A licensed Bat Ecologist will be instructed to advise on and supervise the demolition of all confirmed roost structures.
- No demolition works will take place until the Bat Ecologist is instructed and available to supervise the works.
- A bat specialist will inspect the structure for the presence of bats availing a number of methods and specialist equipment. If weather conditions allow (i.e., temperatures ≥ 10°C at sunset, dry and wind below 5m/s) a bat emergence survey the night prior to planned demolition may be carried out to determine bat presence. This survey should be assisted by a thermal/infrared imaging device to identify bat emergence and return locations
- Where there is any doubt whether bats may be present, a follow-up inspection of the structure must be undertaken. This may require access from a hoist or other mobile elevated work platform (MEWP). This should avail of lights, a thermal imager and a fiberscope.
- If necessary, exclusion of bats from the roosting features within the building using one-way valve devices may be installed or similar appropriate measures by a bat specialist.
- The demolition of the building should be carried out during the Autumn (September-November) or Spring (March-May) months, when it is less likely that hibernating or breeding bats will be present in the structure and ensure that any bats if present within the structure are capable of escape and flight, if deemed necessary.
- Prior to demolition two bat boxes will be erected on a suitable sized tree or pole erected nearby, but away from the zone of disturbance caused by the demolition works. Any bats found during the works will be safely and carefully collected and translocated to this replacement roost box.

- Demolition of the roost structures will be carried out carefully and methodically by way of contractors using hand-tools and MEWPS as required, under the watching brief of the licensed Bat Ecologist.
- Known roost features such as the vents will be removed carefully by hand, with any bats found collected by the Bat Ecologist and placed in a safe, dark protective container; containing a tea-cloth and with access to water, and moved to the replacement roost box.

7.1.2 Replacement Roost Habitat

Two bats were confirmed roosting within building envelope during emergence surveys, with other bats (approximately 3) observed entering and exiting the building through a window.

To mitigate against the loss of roosting habitat for bats, it is recommended that **2 no. Schwegler 1FF bat box,** and **3 no. Schwegler 2FN bat boxes** will be installed at the Site in advance of any works commencing.

It is important to note that bat boxes should be placed in their final, permanent locations from the outset. This should take into account the final design and lighting plan of the Proposed Development. Once the bat boxes are installed, and should bats successfully habituate them, further derogation licence(s) will be required to relocate the bat boxes should they need to be relocated, as they will be confirmed roosts.

Bat boxes should be erected as close to the original roost as is possible, without compromising the integrity of the roost by exposing it to areas of light spill or similar disturbances. The final positioning of the bat box will be decided by the Bat Ecologist during the pre-commencement surveys and will consider potential disturbances such as light spill, noise, and the potential effects of any future works at the Site.

An alternative bat box or number of boxes may be installed should any issues arise in sourcing Schwegler's, upon the agreement of the bat ecologist and the NPWS. There will be no lighting within the area of the proposed location of any bat box. Any proposed movement to a bat box in future will require inspection by a suitably qualified Bat Ecologist. If bats are confirmed to be roosting in a bat box, a derogation licence will be required from the NPWS prior to any movement or disturbance to the structure.

Bat bricks should also be explored as a habitat compensation option which can be include within the building envelope.

The addition of these extra bat boxes reduces the impact of roost loss to a **short-term, negative, local, slight** impact.

7.1.3 Bat-sensitive Construction Phase Night-time Lighting

The lighting plan will be reviewed by the Bat Ecologist prior to commencement of works, with particular attention paid to the lighting around areas where bat boxes are proposed. Lighting of bat commuting/foraging habitat will be minimized or avoided entirely.

7.2 Operational Phase Mitigation

7.2.1 Lighting

The operational phase lighting plan will be reviewed by the Bat Ecologist prior to commencement of works, with particular attention paid to the lighting around areas where bat boxes are proposed.

7.3 Operational Monitoring

Monitoring is recommended post-construction works. This monitoring should involve the following aspects:

- Inspection of the bat boxes within one year of erection.
- Register the bat boxes with Bat Conservation Ireland. This should be undertaken for a minimum of 2 years.
- Monitoring of any other bat mitigation measures e.g., any installed lighting once operational. All mitigation measures should be checked to determine that they were successful. A Bat Ecologist will assess any operational lighting such as security lighting once the works are complete and will ensure that no light-spill adversely affects bat boxes or commuting/foraging habitat.
- A full summer bat survey is recommended post-works to determine that bat mitigation/compensation at the Site was successful. Any decrease in bat activity at the Site, such as the failure for bats to roost in the provided bat boxes, will trigger a re-assessment of their quality and placement by a professional ecologist. Similarly, over-stocking of the bat boxes on Site will require the installation of further bat boxes. The decision as to the number and quality, or re-location of bat boxes will be decided by a suitably qualified ecologist.

Any deviation from the above proposed monitoring measures and/or requirement to amend the approach will be agreed with the Local Authority to ensure compliance.

8 PREDICTED IMPACTS ON BAT POPULATIONS

Based on the survey work completed at the in 2024, a total of 1 bat species (Common Pipistrelle) will be directly affected by the Proposed Development. As outlined in section 4.2 above, although the building on site did support roosting bats, it did not provide roosting habitat for a significant number of bats. During surveys in 2024, a combined total of 2 no. bats (Common Pipistrelle) were observed utilising the building as a roost.

The national population estimates for the affected species are listed below:

- **Common Pipistrelle** - The population in Ireland is increasing and is estimated to comprise 1-2 million mature individuals (Aughney et al., 2018).

Given the negligible proportion of the national population of this species which is likely to be effected by the Proposed Development coupled with Construction and Operational Phase mitigation measures and derogation licensing, it can be concluded that the Proposed Development will not be detrimental to the maintenance of the populations of this species to which the Habitats Directive relates at a favourable

conservation status in their natural range as is required under Section 54(2) of the European Communities (Birds and Natural Habitats) Regulations.

9 CONCLUSION

The Proposed Development at Riverside Works, Bray, Co. Wicklow has been assessed for the presence of roosting bats. The survey and reporting techniques described in this report are in line with best practice guidelines (Collins, 2023 and Marnell *et al*., 2022).

None of the trees on site contained suitable roosts. The building on site contained several PRF's. Two Common Pipistrelle bats were noted emerging from PRF's in the building fabric during survey 1 and survey 3. Multiple bats were also noted entering and exiting the 3rd floor of the building through broken windows however confirmed roosts within the interior of the building were not noted.

Based on the findings of this report, and provided that the proposed mitigation is implemented in full, no long-term negative effects on roosting bats are expected as a result of the Proposed Development.

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