MWP

Derogation Licence Application under the European Communities (Birds and Natural Habitats) Regulations 2011 - 2021

Supporting Information – Proposed Demolition at Ballybeggan, Tralee, Co. Kerry

Issued to Department of Housing, Local Government and Heritage

Ard-Rí Group 2025

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1. Introduction

This document provides supporting information which has been compiled by Fiona McKenna, an Ecologist at Malachy Walsh and Partners (MWP), on behalf of the Applicant ('Ard-Rí Group) to accompany an application for a Derogation Licence under Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations, 2011.

Fiona is an Ecologist (BSc.) working with MWP for over 6 years. Fiona graduated in 2019 from Munster Technological University – MTU (formerly Institute of Technology Tralee (IT Tralee)) after completing a degree in Wildlife Biology. She has completed numerous reports for Screening for Appropriate Assessment (AA), Natura Impact Statements (NIS), Ecological Impact Assessment (EcIA) and Biodiversity chapters for EIAR. She has also authored and contributed to a number of reports for ornithological and bat survey work. Fiona is experienced in the field and has conducted surveys in relation to birds, mammals and bats and she currently holds National Parks and Wildlife Service (NPWS) Licences, photographing wild animals (badger and otter) at their resting/breeding places (Licence No. 007/2025) and bat surveys (DER/BAT DER-BAT-2025- 236).

The Applicant is applying to Kerry County Council (KCC) for permission to demolish all existing buildings, structures, extensions, and landscaping elements and the decommissioning of existing septic tank and all associated site works at the old racecourse in Ballybeggan, Tralee Co. Kerry. The works will be phased and will include preparation before demolition wherein any potential hazards will be identified, all hazardous material will be appropriately removed, and the dismantling of current roofing will be carried out. The it is envisioned the duration of the proposed works will be approximately 6 – 9 months.

MWP are preparing the planning application for the proposed development on behalf of the Applicant. A Screening for Appropriate Assessment (AA) report and Bat Assessment report have been prepared by MWP and will accompany the planning application. As part of baseline surveys undertook by MWP, a number of bat roosts were identified in No.9 building/structures proposed development site.

The purpose of this '*Supporting Information*' document is to provide sufficient information to the Wildlife Licencing Unit (WLU) of NPWS and the Department of Housing, Local Government and Heritage to allow them to make an informed decision regarding the granting of a Derogation Licence to the Applicant in relation to disturbance of bats and/or roosts. A detailed '*Bat Survey and Assessment Report*' has been prepared by MWP. This report is included in **Appendix 1**. The appended '*Bat Survey and Assessment Report*' fully describes the surveys undertaken and the baseline conditions which pertain at the proposed development site in relation to bats. The survey results formed the basis upon which the impact assessment and mitigation proposals in relation to bats have been based.

As per Section E of the 'Application for Derogation' form (Revision 2.0 – July 2025), which is available on the NPWS website, this supporting document details relevant information in response to the criteria which are set out, in relation to the level of supporting information required. These are discussed under the following sub-headings.

2. Background to proposed activity including location, ownership, type of and need for the proposed activity, planning history, policy context, zoning in relevant Development plan (or equivalent), etc.

The proposed development site is located in Co. Kerry within the townland of Ballybeggan, 3km northeast of Tralee town centre (see **Figure 1** below). There are three access main points to the site, one from the west via a local road (Clash road), one from the northeast via a local road (Ballybeggan road) and one to the south of the site via a local road (Clash west estate).

Lands within the proposed site comprise a number of derelict buildings/structures associated with the racecourse such as bars, spectator stands, ticket stalls and bookmakers, to name a few. The old racecourse is adjacent to the proposed site and is currently used for grazing cattle and silage production.

Current land use of bordering lands is a mixture of agricultural, residential and industrial with the north and the east of the site predominantly used for agriculture, interspersed with single residential dwellings. Clash Industrial estate is located 20m to the south of the proposed development site with residential estates to the east, and the Tralee Bypass road to the west.

The proposed development site lands are owned by the Neil Fitzgibbon (the client) and Ard-Rí Group are applying for planning permission on behalf of Neil.

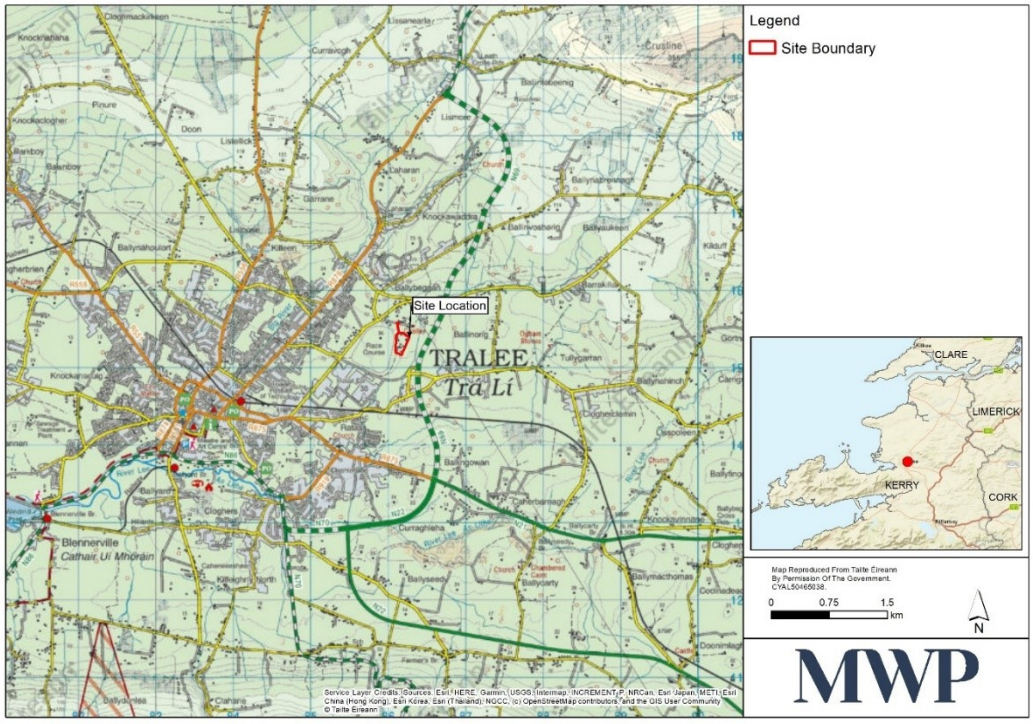

Figure 1. Proposed Site Location

3. Full details of proposed activity to be covered by the derogation (including a site plan). The site may be inspected by an NPWS representative, so the details given should clearly reflect the extent of the project. This information will be used to compare site conditions with the Method Statement.

It is proposed to demolish all existing buildings, structures, extensions, and landscaping elements and the decommissioning of existing septic tank and all associated site works within the study area. All buildings and structures to be demolished are labelled 1-24 and are shown in Figure 2 below. The buildings and structures are all unoccupied and in varying states of disrepair and. The works will be phased and will include preparation before demolition wherein any potential hazards will be identified, all hazardous material will be appropriately removed, and the dismantling of current roofing will be carried out. The it is envisioned the duration of the proposed works will be approximately 6 – 9 months.

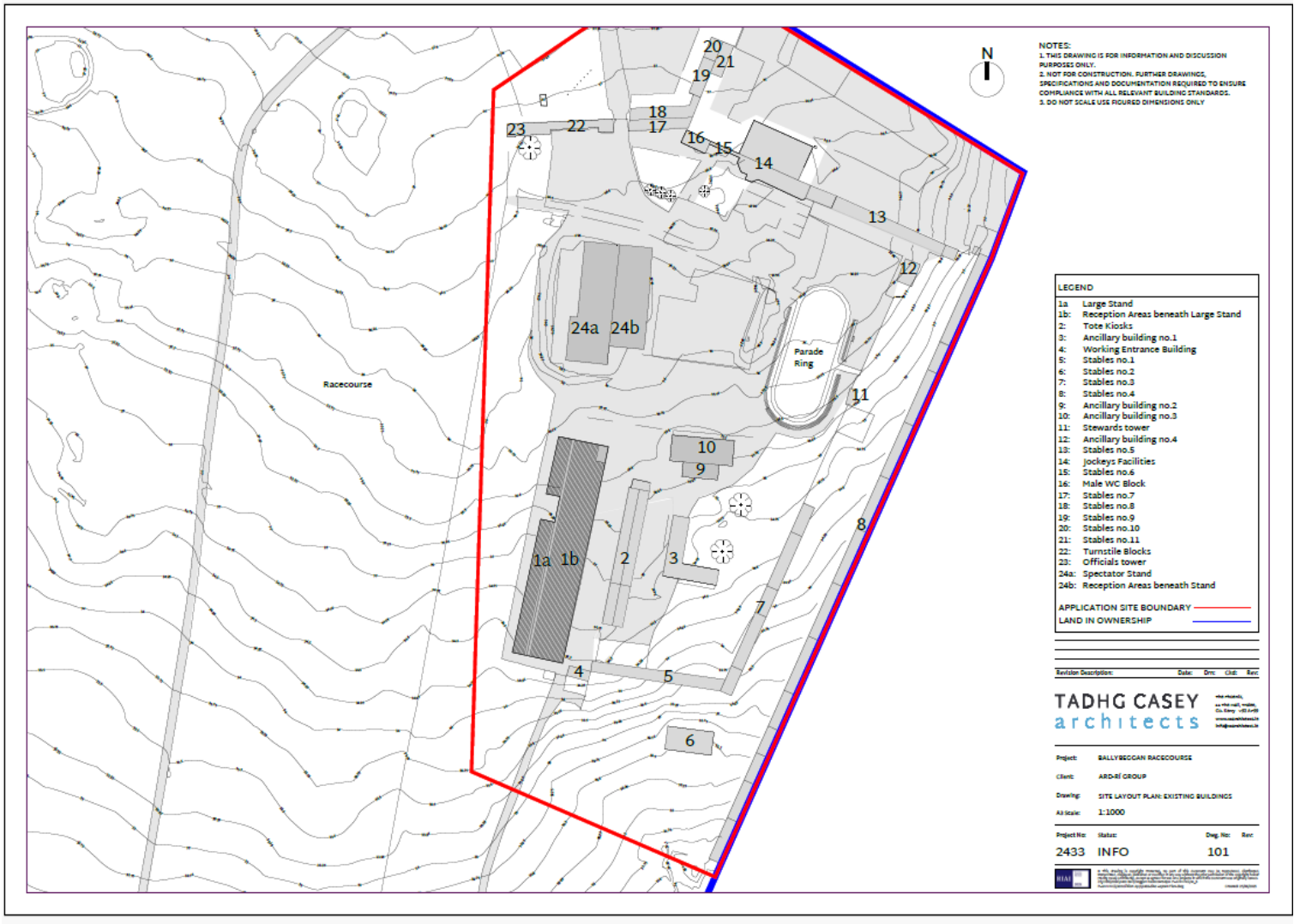

Figure 2. Site Layout

4. Ecological Survey and site assessment (Not required for applications to carry out surveys)

4.1 Field surveys

A. Pre-existing information on species at location and environs.

According to records received from a Bat Conservation Ireland (BCI) data request there are no known bat roosts at the proposed development site. Outside of the proposed development there are eight known bat roosts within 10km radius, three of which are within the Core Sustenance Zone[1] (A Core Sustenance Zone (CSZ) refers to 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) and are listed below:

- No. 1 Brown long-eared bat,
- No. 3 Common pipistrelle and,
- No. 1 Natterer's bat.

B. Status of the species in the local/regional area (relevant to the consideration of the impact on the population at the relevant geographic scale (Test 3))

Contact was made with Bat Conservation Ireland (BCI) in September 2025 with a request for local and county data for the species mentioned in the paragraph below. In their response, they stated, BCI do hold records throughout Ireland, their population monitoring schemes contribute to the overall national/island-wide populations they do no hold enough data to scale down the counts to local populations.

The overall Irish conservation status and population trends for the four species this application pertains to (common pipistrelle, soprano pipistrelle, Leisler's bat and brown long-eared) are considered favourable and improving (NPWS, 2019).

C. Objective(s) of survey

The surveys were undertaken to observe general bat activity within the proposed site and to establish whether any of the derelict buildings/structures are currently being used by roosting bats to inform an impact assessment.

D. Description of Surveys Area

The survey area comprised the area within the redline boundary shown in **Figure 2** above.

E. Survey methodology (including evidence as to how the methodology represents best practice and is appropriate to the Objective). Methodology should include survey maps, details of timing, climate, equipment used and identify any uncertainties or difficulties encountered.

Below is a summary of all surveys carried out and the methodology used. The full '*Bat Survey and Assessment Report*' can be found at in **Appendix 1** of this report.

[1] https://www.bats.org.uk/our-work/landscapes-for-bats/core-sustenance-zones

The following bat surveys were undertaken in view of guidance by Collins (2023):

- Bat Foraging/ Commuting Habitat Suitability Survey
- Preliminary Roost Assessment
- Presence/Absence Surveys
- Passive Automated Bat Surveys (PABS)

Bat roost characterisation, evaluation and the impact assessment were undertaken in view of guidance by:

- Marnell et al., (2022),
- 'Guidelines for Ecological Impact Assessment in the UK and Ireland' (CIEEM, 2018) and
- 'Guidelines for Assessment of Ecological Impacts of National Roads Schemes' (NRA, 2009).

F. Survey results including raw data, any processed or aggregated data, and negative results as appropriate. Photographs and maps must be provided where site-specific features are referred.

Several bat roosts have been identified in a number of buildings/structures within the proposed development site. A summary is presented in the table below listing the building no., the roost type, bat species and the approx. number of species in each building. **Figure 3** below shows all roost locations highlighted in yellow.

The please refer to the full '*Bat Survey and Assessment Report*' in **Appendix 1** for more details.

Table 1:Summary of Bat Roosts Identified at the Proposed Development Site

Building No.	Roost Type	Bat Species	Approx. No. of individuals
1b	Day/Night/Feeding Roost	Common pipistrelle Soprano pipistrelle	X5 minimum X1 minimum
2	Day/Night/Feeding Roost	Common pipistrelle Brown long-eared bat	X5 minimum X3 minimum
3	Day/Night Roost	Soprano pipistrelle	X3 minimum
10	Day/Night Roost	Common pipistrelle Soprano pipistrelle	X5 minimum X1 minimum
14	Day/Night Roost	Common pipistrelle	X3 minimum
16	Day/Night Roost	Common pipistrelle Soprano pipistrelle Leisler's bat	X2 minimum X1 minimum X1 minimum
17	Day/Night Roost	Common pipistrelle Leisler's bat	X4 minimum X2 minimum
22	Day/Night Roost	Common pipistrelle	X1 minimum
24b	Day/Night/Feeding Roost	Common pipistrelle Soprano pipistrelle	X8 minimum X2 minimum

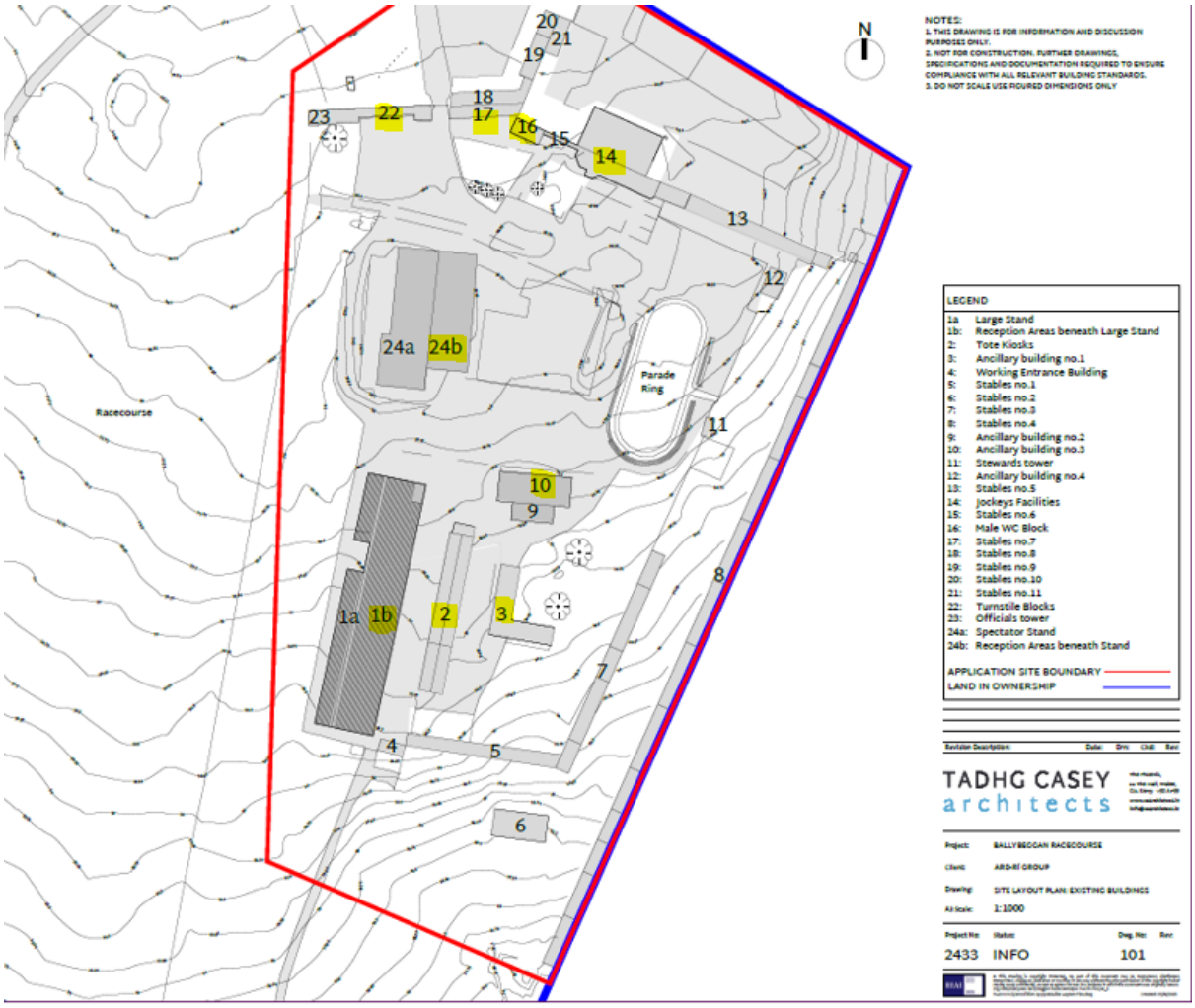

Figure 3. Identified Roost Locations

G. Population size class assessment.

Contact was made with Bat Conservation Ireland (BCI) on 16th September 2025 with a request for local and county data for the species mentioned in the paragraph below. In their response, they stated, BCI do hold records throughout Ireland, their population monitoring schemes contribute to the overall national/island-wide populations they do no hold enough data to scale down the counts to local populations.

The overall Irish conservation status and population trends for the four species this application pertains to (common pipistrelle, soprano pipistrelle, Leisler's bat and brown long-eared) are considered favourable and improving (NPWS, 2019).

5. Evidence to support the Derogation Tests

A. Test 1 - Reason for Derogation

The existing Ballybeggan Racecourse facilities and associated buildings were inspected by a structural engineer in May of 2025.

The buildings are all in a poor state of repair and many of them are structurally compromised.

Many of the buildings have no fully intact roof or external wall structures. Buildings have been severely damaged by weather and the ingress of water over time. There are extensive areas of broken windows and glazing along with semi- collapsed roof elements that in themselves are a risk to safety, particularly due to high winds and storm effects.

Boundary walls , gate and stable buildings are in a poor state of repair and unsafe. Access to the site is controlled at present but requires full time security.

The buildings have no useable value and are in a dangerous condition.

The facility poses a risk to any people who may illegally access the site and in particular young or inexperienced teenagers could come to significant harm within the buildings.

Consequently, and in terms of public safety, we recommend that the buildings be demolished safely and in a managed fashion and all materials be safely removed from site.

See **Plates 1- 6** below for examples.

Plate 1. Damaged roof

Plate 2. Damaged roof

Plate 3. Water damage in ceiling

Plate 4. Damaged stables

Plate 5. Roof damaged and partially missing

Plate 6. Roof damaged and partially missing

B. **Test 2** - Absence of Alternative Solutions

Table 2: Absence of Alternative Solutions

Alternative Solution	Reasons for "Unsatisfactory"
Do-Nothing – Leave buildings/structures in-situ	Public health and safety issues due to asbestos and dangerous structural conditions

C. **Test 3** - Impact of a derogation on Conservation Status

Contact was made with Bat Conservation Ireland (BCI) in September 2025 with a request for local and county data for the species mentioned in the paragraph below. In their response, they stated, BCI do hold records throughout Ireland, their population monitoring schemes contribute to the overall national/island-wide populations they do no hold enough data to scale down the counts to local populations.

According to the Article 17 report published in 2019, the conservation status was stated as being Favourable (FV) and improving for the species mentioned in this application (Common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, Leisler's bat *Nyctalus leisleri* and brown long-eared bat *Plecotus auritus*) See **Table 3** below. In relation to the overall bat suitability index value (28.44), this suggests the landscape in which the study area is located is of medium suitability for bats in general.

Table 3: Bat Conservation Status

Species	Conservation Status	Overall trend in Conservation Status	Bat Habitat Suitability Index Rating[2]
Brown long-eared bat	Favourable (FV)	Improving	44
Common pipistrelle	Favourable (FV)	Improving	35
Leisler's bat	Favourable (FV)	Improving	34
Soprano pipistrelle	Favourable (FV)	Improving	36
			Overall Bat Suitability for all species - 28.44

[2] Maps - Biodiversity Maps

The same trends stated in Article 17 report appear to ongoing, as the 'Bat Monitoring Programme 2028-2021[3]' published in 2022 stated over the last 12 years there has been a significant population increase seen in several species such as common pipistrelle, soprano pipistrelle, Leisler's bat and the Annex II listed lesser horseshoe bat. The population trend of the brown long-eared bat appears to be currently stable.

A range of Demolition phase mitigation measures are decried in the 'Bat Survey and Assessment Report' which accompanies this application. These demolition phase mitigation measures designed to remove or reduce predicted impacts on bats include the following:

- The provision of alternative roost-sites to mitigate for loss of day/night/feeding roosts and day/night roosts of common pipistrelle, soprano pipistrelle, Leislers's bat and brown long-eared bat due to the demolition works. It is proposed to use a mix of bat-box designs to attract a variety of bat species. Schwegler Woodcrete bat boxes are suitable for species such as common pipistrelle, soprano pipistrelle, Leisler's bats and brown long-eared bats, and are self-cleaning. The final number, type and location of bat boxes will be determined by the appointed ecologist.
- A suitably experienced and licenced ecologist is to be appointed for the duration of the works.
- Pre-construction surveys in advance of preparation works and demolition works.
- Bat-sensitive approach to demolition works relation to proposed timing of works, and other measures to minimise impacts on bats.
- Measures in relation to demolition phase lighting to minimise impacts on bats.

Studies/reports with examples of common pipistrelle, soprano pipistrelle, Leisler's bat and brown long-eared bat successfully using bat boxes in Ireland, Norway and the United Kingdom.

Study Location and Species	Summary	Citation for Study
United Kingdom *Pipistrellus* spp., brown long-eared bats and *Myotis* spp.	A review in 2018 of 119 studies of building developments in the UK (Lintott et al 2018) found that a third of bat boxes installed to replace destroyed roosts were used by bats, mainly Pipistrellus spp., and bats were more likely to use bat boxes when a greater number were installed across a site. Bats were present in 31% of bat boxes after development with the majority used by *Pipistrellus* spp. (27%). A small number of bat boxes were used by brown long-eared bats (2%) and Myotis spp. (2%).	**Referenced paper:** Lintott P. & Mathews F. (2018) Reviewing the evidence on mitigation strategies for bats in buildings: informing best-practice for policy makers and practitioners. Chartered Institute of Ecology and Environmental Management (CIEEM), UK report[4].
Ireland *Pipistrellus* Spp., Leisler's bat and Brown long-eared bat	The Vincent Wildlife Trust's Irish bat box project carried out a box scheme study between 1999 and 2015. Bat boxes were set up three locations in Ireland. No. 62 Schwegler boxes of three models were erected in Portumna Forest Park, no. 50 boxes were erected in Coole-Garryland Nature Reserve and no. 50 boxes were erected in Knockma Nature Reserve of which 40 were later transferred to Glengarriff Nature Reserve County Cork. The following species were recorded using the bat boxes	**Referenced report:** The Vincent Wildlife Trust's Irish bat box schemes (Kate McAney & Ruth Hanniffy July 2015)[5]

[3] https://www.npws.ie/sites/default/files/publications/pdf/IWM137.pdf
[4] https://www.conservationevidence.com/actions/1024
[5] https://www.vwt.org.uk/wp-content/uploads/2015/08/VWTIrelandBatBoxReport.pdf

Study Location and Species	Summary	Citation for Study
	each year at least one of the locations; *Pipistrellus* spp. Leisler's, brown long-eared during.	
Norway Soprano pipistrelle	A replicated study in 2005–2014 in a fiord landscape in Norway (Michaelsen et al 2014) found that the number of soprano pipistrelle bats *Pipistrellus pygmaeus* using bat boxes increased more than tenfold over three years, with three larger bat boxes being used as maternity roosts. Soprano pipistrelles were first recorded using the boxes in 2010, five years after installation, with less than 100 individual bats counted. This number increased to an estimated 1,000–1,600 individuals in 2012 and 2013.	**Referenced paper:** Michaelsen T.C., Jensen K.H. & Hogstedt G. (2014) Roost site selection in pregnant and lactating soprano pipistrelles (Pipistrellus pygmaeus Leach, 1825) at the species northern extreme: the importance of warm and safe roosts. Acta Chiropterologica, 16, 349-357.
Ireland Common pipistrelles, soprano pipistrelles Leisler's bats, Daubenton's bat	A study in 2004–2008 of five road developments and three residential and commercial developments in Ireland (Aughney 2008) found bats of four species occupying 33 of 150 bat boxes (22%) and bat droppings in 77 of 150 bat boxes (77%) across all eight sites. Overall, 91 individual bats were recorded occupying bat boxes, including soprano pipistrelles *Pipistrellus pygmaeus* (68), common pipistrelles *Pipistrellus* pipistrellus (17), Leisler's bats *Nyctalus leisleri* (5) and Daubenton's bat *Myotis daubentonii* (1). Bat droppings of Pipistrellus spp. were recorded in 62 bat boxes, Leisler's bat droppings were recorded in 12 bat boxes and Myotis spp. droppings were recorded in three bat boxes. Bat boxes were either woodcrete (137 bat boxes: either Schwegler designs 1FD, 1FF, 1FN, 1FS, 2F, 2FN or 2F-DPF), wedge-shaped wooden bat boxes (5 boxes) or standard wooden bat boxes (8 boxes). At each of eight sites, 3–33 bat boxes were installed in 2002–2008 as mitigation for habitat loss. Each of the 150 bat boxes was checked once in June, October, or November 2008.	**Referenced paper:** Aughney T (2008) An investigation of the impact of development projects on bat populations: Comparing pre- and post-development bat faunas. Bat Conservation Ireland report.

Based on the small numbers of bats within each structure and with the full and proper implementation of the measures mentioned above, it is considered that the actions permitted by the Derogation Licence being applied for will not be detrimental to the maintenance of the populations of any bat species at their respective favourable conservation status in their natural ranges, as required under Section 54(2) of the 2011 Regulations.

6. Monitoring the impacts of the derogations

It is recommended that demolition works are undertaken in spring or autumn when bats are less likely to be present.

A suitably experienced and licenced ecologist is to be appointed for the duration of the works.

Specific measures in relation to demolition, including removal of blockwork, suspended ceilings or sub-floor materials, roof works etc. will need to be drawn up by the appointed contractor in consultation with the appointed licenced ecologist.

The appointed ecologist is to supervise all demolition works, in particular at confirmed or suspected roost locations, and be on hand in the event that bats are discovered. It is important that bat presence throughout the building is regularly monitored during works to ensure that bats have not re-gained access to any part of the building's interior. Regular inspections of all areas should be undertaken and any signs of bat activity searched for.

Prior to any works commencing, a detailed work plan involving both the appointed contractor and the appointed ecologist will be required to be drawn up. This will be done in consultation with NPWS and in-line with any Derogation Licence conditions. The work plan will set out the approach to be taken and specific measures with regard to site preparation works, clearance and demolition works, and will be tailored, as required, with regard to specific works/activities required. The work plan will also be informed by the results of the pre-construction surveys to ensure that the approach to works will be undertaken in such a way as to minimise impacts on bats.

Prior to any works commencing, toolbox talks will be given by the appointed ecologist to contractor staff to explain the general approach to works and outline any specific areas of sensitivity/measures required. Toolbox talks should be given to new contractor staff arriving to site, as required (on an 'as needed' basis). As part of toolbox talks, staff will be informed by the ecologist of the procedure to follow in the event that a bat is discovered, and the ecologist is not present.

Using the above approaches, the likelihood of bats being present within buildings throughout the works will be reduced. If bats, or signs of bats are found, during works, works are to cease in the area until the licenced ecologist has advised how to proceed and/or undertaken removal of bats, in which case they will be carefully relocated to the alternative roost-sites (bat boxes).

7. References

Aughney, T., Roche, N. and Langton, S. (2022) Irish Bat Monitoring Programme 2018-2021. Irish Wildlife Manuals, No. 137. National Parks and Wildlife Service, Department of Housing, Local.Government and Heritage, Ireland.

CIEEM (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester.

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

Marnell, et al., (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.

National Parks and Wildlife Service (NPWS), (2019) *The Status of EU Protected Habitats and Species in Ireland*. Species Assessments Volume 3, Version 1.0. Unpublished NPWS Report, Edited by Deirdre Lynn and Fionnuala O'Neill.

National Roads Authority (NRA) (2006a) Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes. National Roads Authority.

National Roads Authority (NRA) (2006b) Guidelines for the Treatment of Bats during the Construction of National Road Schemes. National Roads Authority.

Appendix 1

'Bat Survey and Assessment Report' for the proposed Demolition at Ballybeggan, Tralee, Co. Kerry

MWP

Bat Survey and Assessment Report

Proposed Development at Ballybeggan Racecourse, Ballybeggan, Tralee, Co. Kerry

Client - Adri Marble

September 2025

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Project No.	Doc. No.	Rev.	Date	Prepared By	Checked By	Approved By	Acceptance Code / Status
25266	6008	A	10/09/2025	SH, FMK	OV	HD	Final

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1. Summary

- Bat surveys were conducted at the site of the proposed demolition works at Ballybeggan, Tralee, County Kerry.
- Surveys within the study area comprised foraging and commuting habitat suitability surveys, preliminary roost assessments (PRAs), Presence/absence dusk emergence surveys and passive automated bat surveys (PABS).
- Foraging and commuting habitat suitability surveys did not identify extensive linear features within the study area but there are some mature scattered trees and areas of scrub habitats. Additionally the study area has low levels of artificial lighting and no real human presence and is therefore considered to have 'low - moderate' commuting and foraging potential for bats.
- Preliminary Roost Assessment (PRA) surveys were undertaken at potential roost-sites (structures and tree) in April and May 2025.
    - A total of 13 building/structures were identified as having 'Low'' or "Moderate" suitability for roosting bats.
    - One tree marked for potential removal was identified as having ''Negligible'' suitability for roosting bats.
- Presence/absence dusk emergence surveys were carried out on all No. 13 building/structures identified as having 'Low'' or "Moderate" suitability for roosting bats during the PRA surveys.
    - Low numbers of individuals (Leisler's bat, common pipistrelle, soprano pipistrelle and brown long-eared bat) were recorded utilising No.9 building/structures for roosting during presence/absence surveys.
- To gather baseline data of bat activity at the site passive automated bat (PAB) surveys were carried out in April 2025 . They were designed to passively sample and record bat activity at 8 pre-selected sampling points (SP) and were carried out on 8 consecutive nights.
    - The following species were recorded during the PAB surveys:
        - Soprano pipistrelle (46.%),
        - Common pipistrelle (33.4%),
        - Leisler's bat (7.7%),
        - Species from the genus *Myotis* (0.5%).
        - Lesser horseshoe (0.4%),
        - Brown long-eared (0.3%) and
        - Nathusius' pipistrelle (<0.1%) and
        - No ID (11.7).
    - The highest level of overall activity during the PAB surveys was recorded at SP7 (Building No.2 – Tote Kiosks), where over 80% of all bat passes were recorded during the survey period.
- Recommendations for minimising impacts to bats are described in Section 11.

2. Introduction

Malachy Walsh and Partners, Engineering and Environmental Consultants (MWP), was appointed by Ard-Rí Group, the 'Applicant', to undertake a bat assessment in relation to a planning application for the demolition of a number of derelict buildings/structures at the lands at Ballybeggan Racecourse, Tralee, Co. Kerry. See **Figure 1,** for the location of the proposed demolition site.

In order to inform the impact assessment in relation to bats at the proposed site, a suite of bat surveys were undertaken by MWP ecologists. This 'Bat Survey and Assessment Report' outlines the bat surveys undertaken, results recorded, impact assessment and proposed mitigation measures.

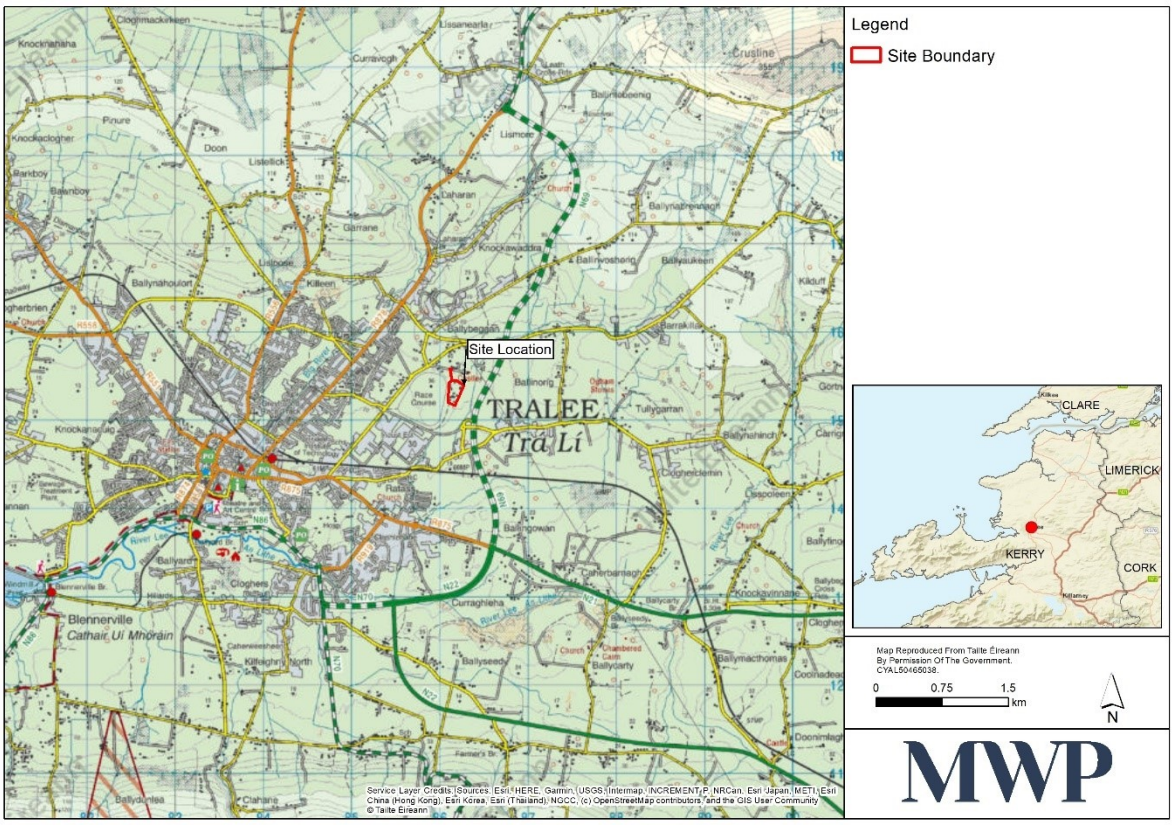

Figure 1. Proposed Development Location

2.1 Statement of Competency

This report was authored by Fiona McKenna (BSc Hons, Wildlife Biology), an Ecologist with Malachy Walsh and Partners (MWP) Engineering and Environmental Consultants. Fiona has over 6 years' experience with MWP and graduated in 2019 from Munster Technological University – MTU (formerly Institute of Technology Tralee (IT Tralee) after completing a degree in Wildlife Biology. She has completed numerous reports for Screening for Appropriate Assessment (AA), Natura Impact Statements (NIS), Ecological Impact Assessment (EcIA) and Biodiversity chapters for EIAR. She has also authored and contributed to a number of reports for ornithological and bat survey work. Fiona is experienced in the field and has conducted surveys in relation to birds, mammals and bats and she currently holds National Parks and Wildlife Service (NPWS) Licences, photographing wild animals (badger and otter) at their resting/breeding places (Licence No. 007/2025) and bat surveys (DER/BAT DER-BAT-2025- 236).

This report was reviewed by Orla van der Noll (MSc, BSc). Orla is an Ecologist at MWP with experience in consultancy since 2021. She has completed numerous ecological reports including bat impact assessments, screening for AA reports, Natura Impact Statements (NIS), and EcIA reports for a range of projects across Ireland. Orla has strong ecological field survey skills, particularly in ornithology and bats. In 2020 she qualified with a first-class honours master's degree in Marine Biology from Bangor University in Wales, after graduating from University College Cork in 2018 with a Bachelors (Hons) degree in Ecology and Environmental Biology. Orla holds an NPWS bat survey license (DER/BAT 2025-222) and has experience in bat related work including preliminary roosts assessments (PRAs), emergence surveys, night bat walkover (NBW) surveys, and sonogram analysis of bat data. Orla volunteered with the Vincent Wildlife trust (VWT) in 2024 conducting lesser horseshoe roost surveys in south Kerry and has experience as an Ecological Clerk of Works (EcoW) during roof works at a maternity bat roost in 2021. She also holds a T-permit under the British Trust for Ornithology (BTO) ringing scheme in Ireland since January 2022. Orla is registered with the Chartered Institute of Ecology and Environmental Management (CIEEM) as a Qualifying member working towards an Associate membership.

Field work was carried out by Fiona, Orla and a number of MWP personnel on the Ecology and Environmental team. Please see Appendix 2 for the Statement of Competency for the core team.

2.2 Scientific Nomenclature: Conventions

Species nomenclature follows the standard form of the common name, followed by the binomial, on the first instance of usage in the text or the first instance of usage in a table. Thereafter, for any subsequent usage, common names only are used.

2.3 Purpose of the Surveys

The surveys were undertaken to observe general bat activity within the proposed site and to establish whether any of the derelict buildings/structures are currently being used by roosting bats to inform an impact assessment.

Further details on the field survey design are provided in Section 5.2. The field survey results are presented in Section 6 and the impact assessment in Section 10.

3. Brief Description of Site and Proposed Works

The proposed development site is located in Co. Kerry within the townland of Ballybeggan, 3km northeast of Tralee town centre. There are three access main points to the site, one from the west via a local road (Clash road), one from the northeast via a local road (Ballybeggan road) and one to the south of the site via a local road (Clash west estate).

Lands within the proposed site comprise a number of derelict buildings/structures associated with the racecourse such as bars, spectator stands, ticket stalls and bookmakers, to name a few. The old racecourse is adjacent to the proposed site and is currently used for grazing cattle and silage production.

Current land use of bordering lands is a mixture of agricultural, residential and industrial with the north and the east of the site predominantly used for agriculture, interspersed with single residential dwellings. Clash Industrial estate is located 20m to the south of the proposed development site with residential estates to the east, and the Tralee Bypass road to the west.

There are no water features within the proposed site, and the nearest watercourse is the Ballybeggan River (EPA Code 23B76) which is situated to the east approx. 140m away at its closest point.

3.1 Study Area

The study area is taken to be the full extent of the of lands within the redline boundary encompassing the demolition area. The study area is shown in **Figure 2** below. All buildings and structures within the study area have been numbered and labelled, and will be referred to throughout this report, see **Figure 3** below.

Figure 2. Site Boundary and Study Area

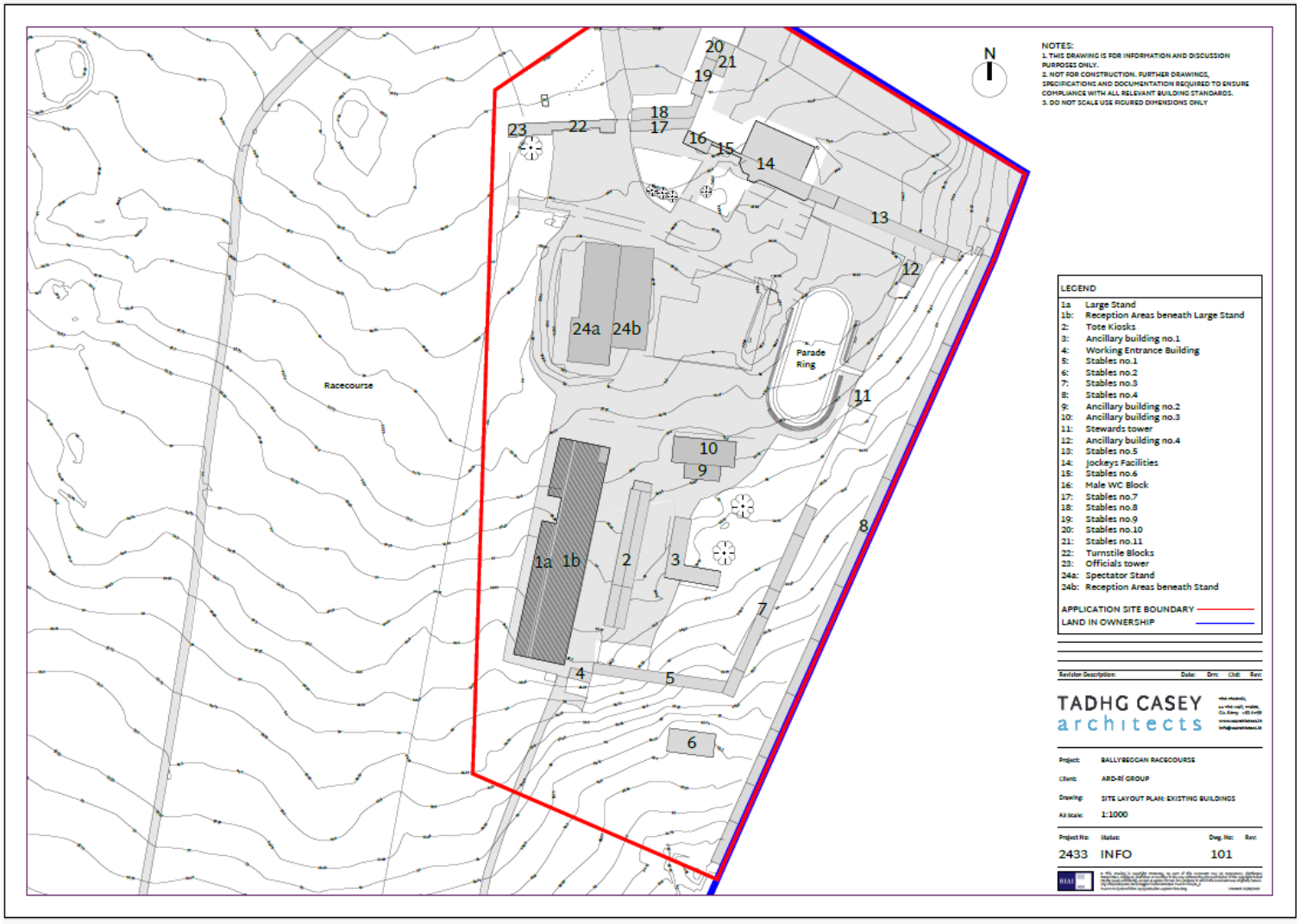

Figure 3. Site Layout and all Building and Structures Numbered

3.2 Proposed Works

It is proposed to demolish all existing buildings, structures, extensions, and landscaping elements and the decommissioning of existing septic tank and all associated site works within the study area shown in **Figure 2 above**. The works will be phased and will include preparation before demolition wherein any potential hazards will be identified, all hazardous material will be appropriately removed, and the dismantling of current roofing will be carried out. The it is envisioned the duration of the proposed works will be approximately 6 – 9 months.

4. Bat Ecology and Behaviour

4.1 Resident Species

There are nine resident bat species on the island of Ireland. These species are:

- Common pipistrelle (*Pipistrellus pipistrellus*),
- Soprano pipistrelle (*Pipistrellus pygmaeus*),
- Nathusius' pipistrelle (*Pipistrellus nathusii*),
- Brown long-eared bat (*Plecotus auritus*),
- Daubenton's bat (*Myotis daubentonii*),
- Leisler's bat (*Nyctalus leisleri*),
- Lesser horseshoe bat (*Rhinolophus hipposideros*),
- Natterer's bat (*Myotis nattereri*),
- Whiskered bat (*Myotis mystacinus*),

All species are insectivores that feed on insects, and all use a seasonal feeding strategy to help build fat reserves during the summer and autumn, before their hibernation during winter - a time, generally, when insects are not available. Most hunt flying prey, but some species, e.g., lesser horseshoe bat or Daubenton's bat, glean their prey from surfaces of leaves or water on which the prey have alighted.

All species hibernate during winter and typically become active in late spring and early summer. As the days and nights warm up each species flies out to forage for insects, for progressively longer periods, at night. Around late June or early July, pregnant females give birth to a single offspring which feeds on its mother's milk for 6-7 weeks at which point it can fly and learns to echolocate and to catch its own prey. Mating takes place from August onwards. Delayed fertilisation occurs wherein the female retains the sperm throughout the winter but does not ovulate and become pregnant until spring the following year. The onset of hibernation, which takes place from October/November onwards, begins once temperatures drop and insect prey abundance drops.

4.2 Legal and Conservation Status of bat Species in Ireland

All Irish bat species are protected under the Wildlife Acts 1976 to 2023[1] and by the Habitats Directive[2] which protects rare species, including bats, and their habitats. All bat species are listed in Annex IV of the Habitats Directive as species protected across their entire natural range and the lesser horseshoe bat is further listed under Annex II, as a species for which core areas of their habitat must be protected within the Natura 2000 network of protected sites. Under Regulation 51 of the European Communities (Birds and Natural Habitats) Regulations 2011-2021, any person who, in regard to the animal species listed in Annex IV of the Habitats Directive:

- deliberately captures or kills any specimen of these species in the wild,
- deliberately disturbs these species particularly during the period of breeding, rearing, hibernation, and migration,
- deliberately takes or destroys eggs of those species from the wild,
- damages or destroys a breeding site or resting place of such an animal, or
- keeps, transports, sells, exchanges, offers for sale, or offers for exchange any specimen of these species taken in the wild, other than those taken legally as referred to in Article 12(2) of the Habitats Directive.

Across Europe, bats are further protected under the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1982), which, in relation to bats, exists to conserve all species and their habitats. The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979) was instigated to protect migrant species across all European boundaries. The Irish government has ratified both these conventions.

Under Article 11 of the Habitats Directive, each member state is obliged to undertake surveillance of the conservation status of the natural habitats and species in the Annexes and, under Article 17, to report to the European Commission every six years on their status and the implementation of the measures taken under the Directive. In April 2019, Ireland submitted the third assessment of conservation status for 59 habitats and 60 species. The current Conservation Status assessments for bat species resident in Ireland are listed in Table 1, below; the trend in the Conservation Status for each is included.

Table 1: Overall Assessment of Conservation Status for Bat Species Resident in Ireland (NPWS 2019)

Species	Conservation Status	Overall trend in Conservation Status
Brown long-eared bat	Favourable (FV)	Improving
Common pipistrelle	Favourable (FV)	Improving
Daubenton's bat	Favourable (FV)	Improving
Lesser horseshoe bat	Unfavourable-Inadequate (U1)	Deteriorating
Leisler's bat	Favourable (FV)	Improving

[1] Collective citation for the following: Wildlife Act 1976 (no. 39 of 1976); Wildlife (Amendment) Act 2000 (no. 38 of 2000); Wildlife (Amendment) Act 2010 (no. 19 of 2010); Wildlife (Amendment) Act 2012 (no. 29 of 2012); Heritage Act 2018 (no. 15 of 2018), Part 3 and Planning, Heritage and Broadcasting (Amendment) Act 2021 (no.11 of 2021), Chapter 3.

[2] Council Directive 92/43/EEC

Species	Conservation Status	Overall trend in Conservation Status
Nathusius' pipistrelle	Unknown (X)	N/A
Natterer's bat	Favourable (FV)	Stable
Soprano pipistrelle	Favourable (FV)	Improving
Whiskered bat	Favourable (FV)	Stable

4.3 Habitat Association

Bats in Ireland feed exclusively on insects and, in the summer, they generally emerge from their roosts at dusk. While the distances covered while foraging varies considerably between individual species, all are known to use several different foraging sites in the same night and to move between them to locate areas of high insect density.

The interplay between habitat mix, environmental conditions, topography, elevation, and availability of prey is a key determinant of whether a location is suitable for bats as is the distance between roosts and the location in question. Because bats preferentially select certain habitats and avoid others, each species has a strong association with different habitat types to which they exhibit a high level of site loyalty and species will frequently return to the same foraging sites night after night (Entwhistle *et al.*, 2001). Because bats are colonial mammals, intergenerational learning is a fundamental characteristic of their biology and one that tends to reinforce site loyalty such that foraging grounds are frequented for periods of years or even decades. Juvenile bats hunt independently within weeks of birth and, therefore, acquire knowledge of foraging sites before their first hibernation period. Reliability of supply of prey biomass is foundational to each species' capacity to maintain populations at viable levels (in this regard see content on metabolic constraints in Section 4.5.

Table 2, below, lists and ranks, in order of precedence, the relative importance to bat species of certain landscape features that bats use to roost, commute, and hunt. They use hunting grounds - foraging sites - to find food and commuting habitats to travel. Table 3, below, lists the types of features commonly selected as roost sites, the species associated with each type, and the relative frequency with which each species selects each type of feature

Table 2: Landscape features of importance to bat species[3]

Features of High Importance	Features of medium importance	Features of low importance
Underground sites	Improved pasture	Intensive arable
Buildings with high bat roost potential	Drainage ditches	Dense urban, particularly lit areas
Broadleaved woodland and scrub	Walls and fences	
River valleys	Minor roads (no hedges)	
Small field systems with low-intensity pasture	Exposed upland sites	

[3] Adapted from the UK Department of Transport Interim Advice Note 116/08 Nature Conservation Advice in Relation to Bats

Features of High Importance	Features of medium importance	Features of low importance
Treelines and hedgerows	Coniferous woodland	
Bridges and structures with high bat roost potential		

Table 3: Species' associations with bat roost types Error! Bookmark not defined.

Species	Trees		Buildings		Underground	
	Maternity	Hibernation	Maternity	Hibernation	Maternity	Hibernation
Lesser horseshoe bat	L	L	H	M	L	H
Daubenton's bat	M?	L?	M	L	M?	H
Whiskered bat	M?	M?	H	L	N	H
Natterer's bat	M?	M?	H	L	L	H
Nathusius' pipistrelle			H?			
Common pipistrelle	M	M	H	H	N	L
Soprano pipistrelle	M	M	H	H	N	L
Leisler's bat	M	M	H	L	N	N
Brown long-eared bat	H	H	H	H	N	M

Trees - includes all types of crevice and hollows as well as bat-boxes attached to trees.

Buildings - above-ground areas, with an emphasis on roof voids and other areas warmed by the sun.

Underground - anywhere that provides cool humid conditions buffered against rapid temperature change. Includes caves, mines, tunnels, souterrains, fortifications, cellars, icehouses, limekilns, etc.

N – not recorded in recent times. **L** - low dependence; unusual but has been recorded. **M** – some usage recorded, though perhaps not the most important type of site. **H** – the most frequently recorded type of site for this species/activity

4.4 Distribution of Prey

At any location, the abundance of flying insects is heavily influenced by, inter alia, wind speed (Møller, 2013). Small insects generally tend to settle in areas with low wind speeds because control and manoeuvrability of flight are optimised where wind speeds are lower than the insect's flight speed (Pasek, 1988). Therefore, within any established foraging ground, existing windbreaks such as tree lines, vegetated field - or roadside - boundaries, and woodland edges create sheltered corridors where concentrations of insects accumulate leeward of these windbreaks, particularly in comparison with adjacent unsheltered areas. Within these sheltered corridors the patterns of distribution will be affected by wind speed, angle of incidence of the wind, permeability of the windbreak, turbulence, vegetative composition, and source of insects (windbreak, local fields, upwind sites) (Pasek, 1988). Bats will know from experience and repetition where insects are likely to be more abundant and

will return to these areas. As a result of these variables, bats can be unevenly distributed within any given area due to the influence of localised conditions even on small scales (de Jong & Ahlén, 1991).

4.5 Metabolic Constraints

Two fundamental behavioural characteristics impose a high metabolic cost on all bat species: flight and the use of acoustic signalling to navigate, hunt, and communicate. As true fliers, rather than gliders, bats use flapping flight which is one of the most expensive activities in terms of metabolic cost (Winter *et al.*, 1998). In addition, the metabolic costs of acoustic signalling are about eight times that of the silent animal (Ophir *et al.*, 2010), and the cost of echolocation can be even higher. As a group, therefore, bats have evolved to favour minimal mass because of the energetic demands of flight, hunting, and communication and have developed behaviours that minimise other metabolic costs.

The wing of a bat resembles a modified human hand with a flexible skin membrane that extends between each long finger bone, and it is the many movable joints that make bats agile fliers. Because of the thin wing membrane, flying during the heat of the day could be hazardous causing excessive absorption of heat and resulting in dehydration and possible heat prostration. Nocturnality offers protection from the heat and helps bats maintain body temperature and moisture. It also affords protection from aerial predators most of which hunt during the day.

Even though they share the characteristics of all mammals - hair, regulated body temperature, the ability to bear live young, and to nurse them; bats are the only mammals to truly fly. Flying consumes so much energy that each female bat is only able to produce a single offspring each year, and a bat typically will need to consume about 1/3 of its body weight in food per night; a common pipistrelle, for example, can eat over 3,000 insects in a single night. As insectivores, bats in Ireland feed on arthropods which contain the energy-rich carbohydrate chitin in their exoskeleton, which is indigestible for the typical mammalian gastrointestinal tract. However, European vespertilionid bat species have evolved an enzymatic adaptation (acidic mammalian chitinase) which enables them to digest the chitin present in their primary source of food to optimize resource use and energy intake (Strobel *et al*., 2013).

This aspect of their ecology, this high metabolic demand, is a key determinant in the foraging strategies of all bat species. Speculative foraging carries too low a risk/reward ratio in that the metabolic costs of flight and echolocation are so high that bats will seek out locations that have previously rewarded energy cost inputs. This aspect of their behaviour is demonstrated by the previously mentioned high level of site loyalty exhibited by bat species and the repeated return to the same foraging sites night after night (Entwhistle *et al*., 2001). In addition, because the cost of flight increases with decreasing body size, de Jong (1994 cited in Erickson *et al*., 2003) hypothesized that smaller bats with slower flight could be restricted from using habitats where insect abundance was low and long-distance foraging flights were required.

Differences in activity on different nights could be the result of climatic conditions, insect availability, or morphological differences between species. Cooler and windier nights tend to suppress the flight activity of bats (Anthony *et al*., 1981; O'Farrell, 1967; Stebbings, 1968; all cited in Erickson *et al*., 2003) by imposing thermoregulatory stress and by reducing the activity of their insect prey. Strong winds can also increase the cost of flight and can affect the net energy gain for foraging bats (Weimerskirch *et al*., 2012; cited in Møller, 2013).

4.6 Audio Signature

Because they have evolved to be active in the dark, bats use echolocation, a form of acoustic signalling, for sensing the environment and to orientate and forage at night. It is these signals that were detected and recorded during

the surveys described in this report. Echolocation involves the production of pulses of high-frequency sound, usually in the ultrasound range above 20 kHz, and the detection of the returning echoes with acutely sensitive ears. By comparing the outgoing pulse with the returning echoes — which are modified versions of the outgoing pulse — their brains can assemble dynamic images of the surroundings including the size, shape, distance, and motion of their prey – the location of which can be determined, in three dimensions, from its range and direction (Jones, 2005).

Each species uses echolocation in an individualised manner adapted to its preferred habitat and flight behaviour. Species that fly high emit signals over a long-range, i.e., long signals that sweep through a narrow spectrum, which enable them to retrieve information from a long way ahead. Conversely, species that hunt where obstacles are likely to be quite near, or that glean their prey from surfaces, such as Daubenton's bat and lesser horseshoe bat, do not need to emit intense pulses because of proximity.

4.7 Species Detectability

Due to the species use of echolocation in an individualised manner the detectability of each depends mainly on two factors:

- the abundance of the species and its ubiquity in the area surveyed,
- the intensity of its echolocation signals.

As a result, the probability of acoustic detection varies from species to species, and this probability is also influenced by the acuity of the microphones in the units used for detection. Each species' intensity of emission is characterised in Table 4, below; the detection range is also included.

Table 4: Intensity of emission and detection range (open to semi- open environment) Error! Bookmark not defined.

Intensity of emission	Species	Detection Range (m)
Very weak	Lesser horseshoe bat	15
	Whiskered bat	5
	Daubenton's bat	10
	Natterer's bat	15
Medium	Brown long-eared bat	20
	Common pipistrelle	25
	Nathusius' pipistrelle	25
	Soprano pipistrelle	25
Strong[4]	N/A	N/A
Very strong	Leisler's bat	80

[4] No species in this category are resident in Ireland.

5. Methodology

5.1 Desk Study

A desk study was carried out to collate available information on the bat species likely to be present within the proposed development site and surrounding area. This comprised a review of the following publications, datasets, and on-line resources:

- OSI Aerial photography and 1:50,000 mapping,
- The Bat Conservation Trust publications and website,
- Bat Conservation Ireland publications and website,
- National Biodiversity Centre (NBDC) (on-line map-viewer),
- Aerial imagery available at Google Earth and Bing Maps,
- National Parks and Wildlife Service (NPWS), and
- Other information sources and reports footnoted in the report.

5.1.1 Data Base Search

5.1.1.1 Bat Conservation Ireland Data Request

A data request for all bat data within hectad Q81 was submitted to Bat Conservation Ireland (BCI) on 24th April 2025. These records contain a dataset of bat records from within a 10km radius search of the site. The on-line dataset record distribution for known lesser horseshoe bat roosts retained by NPWS was checked for records of lesser horseshoe bat roosts in the area[5].

5.1.1.2 Bat Habitat Suitability Index (BHSI)

NBDC

The desk study included a preliminary assessment of the availability of landscape features with importance to bats within the proposed development site or within the geographical area extending away from it.

The National Biodiversity Data Centre's online mapper[6] includes a Bat Habitat Suitability Index (BHSI) layer derived from an analysis of the habitat and landscape associations of Irish bats compiled in Lundy *et al*. (2011). The index evaluation ratings range from 0 to 100 with 0 being the least favourable, and 100 the most favourable. Index evaluations are available for each species and an overall rating is also available for all species in combination. As the ratings are mapped to a 2km grid square resolution, multiple ratings are available for any search area that extends beyond this 2km scope.

These ratings, while not predictive, provide meaningful metrics that characterise the probable value of an area to bats. They are an indicator as to the likelihood that different bat species are, or are not, likely to, typically, be a significant presence in an area. The BHSI ratings can, therefore, be used to indicate the probability that bats may

[5]https://www.npws.ie/maps-and-data/habitat-and-species-data

[6] https://maps.biodiversityireland.ie/Map

use an area. The BHSI ratings for the area encompassing and extending away from the study area[7] were reviewed. For results, please refer to Table 11 in Section 6.1.2 below.

5.2 Field Survey Design

The following bat surveys were undertaken in view of guidance by Collins (2023):

5.2.1 Bat Foraging/ Commuting Habitat Suitability Survey

As part of the initial site walkover, the site was assessed for its foraging and commuting potential. Any linear habitat features such as hedgerows and treelines, were described in terms of plant species occurring, overall condition and structure and degree of connectivity within the wider landscape, in relation to evaluating their potential suitability for foraging and commuting bats. Habitat features occurring were assigned a suitability rating ranging between 'negligible', 'low', 'moderate' or 'high'.

5.2.2 Preliminary Roost Assessment

The Preliminary Roost Assessment (PRA) was conducted on 9th April and 1st May 2025 was undertaken to identify any actual or potential bat roosts which could be either directly or indirectly impacted by the proposed works. The survey involved an inspection of any buildings and structures found within the red line boundary, to identify features that could support roosting bats, and/or identify any evidence of bat activity.

There are nine mature trees within the study area. Eight of these trees will remain in-situ at the site and therefore were not assessed any further. The remaining tree (Eucalyptus spp.) which may be removed was assessed for bat roosting potential. The tree was visually inspected, the exterior surface of the tree from ground level using a torch and binoculars, as well as the areas of ground in the immediate vicinity.

Buildings and structures were evaluated in terms of structural integrity, degree of dampness, degree of shelter/protection, etc and potential as bat roosting habitat. This involved the surveyor visually inspecting both the interior using torches and the exterior from ground level using torches and binoculars.

Over 20 buildings/structures were surveyed, each of which are labelled 1 – 24 and are listed in Table 5 and shown in Figure 4 below.

All buildings/structures were inspected for actual or potential bat entry/exit points e.g. openings, cracks and crevices, actual or potential bat roosting locations, live bats or dead specimens, or any other evidence of old or recent bat usage, such as droppings, staining, feeding remains, etc.

On completion of the PRA, any building/structure and tree was categorised as having either 'negligible', 'low', 'moderate' or 'high' suitability for roosting bats. The results of the PRAs determined whether additional survey effort was required. The criteria set out in Table 6 below were used to classify the potential of the building/tree to support roosting bats.

[7] The area encompassed within the 10 km grid squares Q81

Table 5: All buildings and Structures Surveyed Within the Study Area

Building No.	Description
1a	Large Stand
1b	Reception Areas Below Large Stand
2	Tote Kiosks
3	Ancillary Building no. 1
4	Working Entrance Building
5	Stables no.1
6	Stables no.2
7	Stables no.3
8	Stables no.4
9	Ancillary building no.2
10	Ancillary building no.3
11	Stewards tower
12	Ancillary building no.4
13	Stables no.5
14	Jockeys Facilities
15	Stables no.6
16	Male WC Block
17	Stables no.7
18	Stables no.8
19	Stables no.9
20	Stables no.10
21	Stables no.11
22	Turnstile Block
23	Officials tower
24a	Spectator Stand
24b	Reception Areas beneath Stand

Figure 4. All buildings and Structures Surveyed Within the Study Area

Table 6: Classification criteria for bat roosting potential (Collins 2023)

Category	Description
Confirmed	A building or structure with features confirmed to be used by roosting bats either by historic records (verified appropriately), or evidence recorded during survey (such as droppings).
High	A building or structure with one or more potential roost features 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. These structures have potential to support high conservation status roosts, e.g. maternity or classical cool/stable hibernation site.
Moderate	A building or structure with one or more potential roost features that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).
Low	A building or structure with one or more potential roost features that could be used by individual bats opportunistically at any time of year. However, these features do not provide enough space, shelter, protection, 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 and not classic cool/stable hibernation site but could be used by individual hibernating bats).
Negligible	No obvious habitat features on-site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.
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).

5.2.3 Presence/Absence Surveys

Following the PRA surveys of structures/buildings within the study area, presence/absence surveys (comprising dusk emergence surveys) were undertaken for structures/buildings found to have potential to support roosting bats. The purpose of the presence/absence surveys was to confirm the presence or absence of roosting bats by recording bats emerging or returning, identifying roost exit/entry points, and confirming the species and numbers occurring. This data would then be used to assist in categorising the type of roost present.

Collins (2023) outlines the recommended timings and minimum survey effort required in relation to presence/absence surveys of structures to have confidence in a negative result, based on the suitability of the structure for roosting (see Table 7 below).

Table 7. Recommended timings and minimum survey effort for presence/absence surveys (structures) in context of degree of roost suitability (adapted from Collins, 2023).

	Roost suitability Category	Further survey requirements
Buildings	High	Three separate survey visits (dusk) spaced at least three weeks apart. May to September, with at least two surveys between May and August.
	Moderate	Two separate survey visits (dusk) preferably spaced at least three weeks apart. May to September, with at least one visit between May and August.
	Low	One survey visit (dusk) between May to August.
	Negligible	No additional surveys required

On the basis of the roost suitability ratings assigned following the PRA surveys of structures (see Section 5.2.2 above and Section 6.2.2 below), a number of dusk emergence surveys were undertaken between early June to mid-July 2025 at 13 no. of the structures/buildings. See Table 8 below with all 13 no. structures/buildings listed and a short summary. For a more detailed description including dates, times and weather details, please refer to Appendix 3. The number of survey visits and the survey timings meet the minimum survey requirements as per Collins (2023).

Table 8: Emergence Survey Summary

Building No.	Building	No. of emergence Surveys Carried out
1b	Reception Areas Below Large Stand	2
2	Tote Kiosks	2
3	Ancillary Building no. 1	2
10	Ancillary building no.3	1
11	Stewards tower	1
12	Ancillary building no.4	2
14	Jockeys Facilities	2
16	Male WC Block	2
17	Stables no.7	1
18	Stables no.8	1
20	Stables no.10	1
22 & 23	No.22 - Turnstile Block & No.23 - Officials tower	1
24b	Reception Areas beneath Stand (ground floor)	2
24b	Reception Areas beneath Stand (1st floor)	2

During the dusk surveys, potential exit/entry points identified during the PRAs were watched for emerging/re-entering bats. Each dusk survey was carried out by 1-4 surveyors with the aid of hand held bat detector units with heterodyne function: Batscanner, Batlogger M2 and AnaBat Walkabout a. Both the Batlogger and AnaBat Walkabout record bat passes, and whilst the Batscanner does not record it can tune in to up to four frequencies at the same time but does not record activity. Additional to the surveyors, night vision aids (NVA) such as thermal imaging cameras were used to record bat activity. The models used were: Pixfra Arc A419 Thermal Imaging Monocular and Pulsar Telos XP50 Thermal Monocular. Each thermal monocular was set up and a static detector (Song Meter Mini Full Spectrum bio-acoustic recording unit) was placed where each monocular was focussed in order to record bat passes being observed and recorded on each thermal monocular.

In line with Collins (2023), dusk surveys commenced at least 15 minutes before sunset and continued until approximately 1.5-2 hours after sunset.

5.2.4 Passive Automated Bat Surveys (PABS)

Automatic activity surveys utilise static units (units deployed at fixed locations) to record bat actively remotely. The surveys undertaken at the study area used static bio-acoustic units (Song Meter Mini Full Spectrum bio-acoustic recording units) set up on-site to record bat activity over extended periods. Static detectors were deployed at the pre-selected Sampling Points (SPs) to capture data on the level of bat activity at the site and its spatial and temporal distribution.

Full Spectrum (FS) detectors continuously record all frequencies and retain details of the call structure. The sound recordings from these detectors are typically very high quality and are stored on the units for later analysis. Because FS detectors record sounds at the full frequency, i.e., ultrasonic sounds are not converted to a lower frequency to make them audible, they can capture, and record sound in real-time at a high level of detail. The resulting sound files are very large, so these detectors use a triggering system to ensure that recordings are made only when sounds detected are above certain frequency and amplitude thresholds.

The units deployed were programmed to begin recording half an hour before sunset each evening and to continue until half an hour after dawn the next morning, in line with Collins (2023). Before deployment, the latitude, longitude, and time zone for each survey location was inputted to each unit, after which units then automatically determined the dawn and dusk times, thereby reducing the likelihood of operator error. Each unit has an omnidirectional microphone that detects bat ultrasonic calls. Calls emitted by bats that passed within the detecting range of the units, during the period of activation, were recorded and sound files stored on internal SD cards for later analysis. All units were deployed and collected during daytime hours.

In order to gather some baseline data eight units were deployed for eight consecutive nights in a number of buildings on the following dates:

- 23rd April – 28th April 2025

All sampling points and locations are listed in Table 9 and shown in Figure 5 below.

Table 9: Sampling Point Locations

Sampling Point	Building No.	Building	Location in Building
SP1	14	Jockeys Facilities	1st floor in function room
SP2	16	Male WC Block	Inside the front door to the toilets
SP3	24b	Reception Areas beneath Stand	Ground floor in middle bar room
SP4	24b	Reception Areas beneath Stand	1st floor in larger bar room
SP5	1b	Reception Areas Below Large Stand	In the first bar room (northern entrance)
SP6	1b	Reception Areas Below Large Stand	In kitchen area in middle of building
SP7	2	Tote Kiosks	In the middle section of building
SP8	3	Ancillary Building no. 1	The men's toilets (southern section of building)

Figure 5. All Sampling Points

5.3 Sonogram Analysis

Post PAB surveys, the sound files were downloaded from the SD cards and converted using proprietary software[8] to produce sonograms (graphs of the sound recorded). As each species has a unique audio signature, the sonograms, or graphs, can be used to distinguish between one species and another. Using training and experience of sonogram analysis, a staff ecologist used the software to eliminate all data files that were not generated by bats. Once an individual call is identified the recording is automatically labelled using tools available in the specialised software. During an audit of all data, all non-Pipistrellus calls and 10% of all no-ID, noise and Pipistrellus calls were manually verified in line with the Collins (2023) guidelines.

Not every call emitted by a bat is the echolocation call that is characteristic of the species in question. Many bat species use differently structured echolocation calls, adapted to their habitat structure or foraging situation (Miller & Degn, 1981; Fenton, 1987; Rydell, 1990; Kalko, Schnitzler & Schnitzler, 1993; Jones, 1995; all cited in Pfalzer *et al*., 2003). In addition to echolocation calls, bats use 'social' calls which are differentiated from echolocation calls by their solely communicational function. Pfalzer *et al*. (2003) categorises these into 4 types, as follows: squawk, trill (repeated), cheep (curved), and song (complex). While these can readily be attributed to bats, they cannot be used to differentiate between species. Using the specialised software, any calls that match the parameters outlined in the preceding sentences are automatically designated as 'unidentified' and are reported as such in this report.

[8] Kaleidoscope Pro Analysis Software.

5.4 Ecological Evaluation

The ecological evaluation outlined in this report has had regard to methodologies set out in 'Guidelines for Ecological Impact Assessment in the UK and Ireland' (CIEEM, 2018) and 'Guidelines for Assessment of Ecological Impacts of National Roads Schemes' (NRA, 2009). These guidelines set out the context for the determination of value on a geographical basis with a hierarchy ('International' through to 'Local'/'Negligible') assigned based on the importance of any particular ecological receptor.

The NRA criteria are specific to circumstances in Ireland and, therefore, have been used in this report to assess the value of individual species of bat recorded, based on the information obtained during the desktop study and field surveys. The value of individual bat species is assessed on biodiversity value, legal status and conservation status. Biodiversity value is based on its national distribution, abundance or rarity, and associated trends.

With regard to evaluating the ecological value of roosts, Marnell *et al*., (2022) is used to categorise roost status and thus inform mitigation requirements, in conjunction with professional judgement.

5.5 Impact Assessment

The impact assessment in Section 10 is undertaken with regard to EPA (2022) guidance criteria for assessing impact and determining significance of effects and other best-practice guidance specific to bats and bat impact assessment, namely Marnell *et al*., (2022).

5.6 Field Survey Limitations

5.6.1 Structural Surveys

External surveys of all structures were undertaken from ground-level. A number of the buildings within the study area were in varying states of neglect and disrepair and sources of asbestos identified within most of the buildings on-site. Care was taken when surveying these buildings internally and the duration spent inside each building was short on the basis of health and safety.

These minor limitations regarding structural inspections are not considered to have significantly impacted upon the collection of sufficient data to inform a robust impact assessment on bats as precautionary principle was used where necessary.

5.6.2 Presence/Absence Surveys

Following the roost inspection surveys of structures/buildings within the study area, presence/absence surveys (comprising dusk emergence surveys) were carried out. During a few of presence/absence surveys the weather deteriorated (heavy rain and strong winds) on-site leading to the abandonment of surveys before the full duration of the survey was complete. This is not considered to have significantly impacted upon the collection of sufficient data as these buildings were surveyed again at a later date contributing to more data being collected.

5.6.3 PAB Surveys

Bats will typically fly over and back along short sections of habitat, if prey is readily available, and use linear features to navigate through the landscape, to and from roosts, and within foraging sites. An individual bat making multiple passes within range of a static detector can therefore be the source of many recorded calls. Therefore,

the number of calls recorded is not a direct measure of the number of individuals of a particular species present. The number of calls recorded is likely to be much greater than the number of bats that generated them.

Although acoustic surveys cannot be used to determine the absolute abundance of bats, since a given individual may be recorded multiple times, the number of calls recorded can however be used as a reliable proxy for the relative levels of bat activity for species recorded and therefore the relative abundance of species in an area at the time of survey.

Additionally, the static units deployed within the buildings may also record bat passes from bats that are close to the building or passing by outside and therefore the number of passes collected on each unit cannot be assumed to be from bats solely within the building.

5.6.4 Bat Sonogram Analysis

There are three species of the genus *Myotis* resident in Ireland, namely Daubenton's bat, whiskered bat, and Natterer's bat. The echolocation calls of these three species are very similar, and oftentimes indistinguishable, therefore the sonograms generated by recordings of these species' calls cannot reliably be identified to species level based on sonogram analysis alone. Therefore, any bat passes attributed to the genus *Myotis* by the automatic identification software used are simply identified as *Myotis* spp., and are specified as such in this report, as is common practice in studies regarding this group.

6. Results

6.1 Desk Study

6.1.1 Bat Conservation Ireland (BCI) Database Records

Roost Sites Within 10km

A review of roost site data received from BCI determined that there are no records of roosts at the study area. Records for a total of eight roost sites are retained for the area within a 10km radius of the approximate centre point of the site. Listed in Table 10 are the number of roosts for each species along with the distance from the proposed development site and the Core Sustenance Zone radius (km). A Core Sustenance Zone (CSZ) refers to 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[9]. The Core Sustenance Zone is in range of the proposed development site for the following roosts:

- No. 1 Brown long-eared bat,
- No. 3 Common pipistrelle and,
- No. 1 Natterer's bat.

[9] https://www.bats.org.uk/our-work/landscapes-for-bats/core-sustenance-zones

Table 10: Roost Site Records Retained by BCIreland for 10km Radius of The Centre of The Study Area

Species	No. roosts	Approx. distance from study area	Core Sustenance Zone radius[10]	Within Core Sustenance Zone
Brown long-eared bat	1	2km NW	3km	Yes
Common pipistrelle	1	2.6km SW	2km	Yes
Daubenton's bat	1	6.5km NE	2km	No
Leisler's bat	2	3.5km SW 3.5km SW	3km	No
Natterer's bat	1	2km NE	4km	Yes
Lesser horseshoe bat & brown long-eared	1	3.5km SW	Lesser horseshoe – 2km Brown long-eared – 3km	No
Lesser horseshoe bat & Whiskered bat	1	3km SW	Lesser horseshoe – 2km Whiskered bat – 1km	No

6.1.2 Bat Habitat Suitability Index (BHSI)

The BHSI rating at the proposed development site is listed in Table 11 with the overall rating for all bat species is 28.44. The highest rating value for any individual species was 44 (brown long-eared bat) and lowest 4 (Nathusius' pipistrelle).

These ratings, while not predictive, provide meaningful metrics that characterise the probable value of the area within and surrounding the proposed development site to bat species. They are an indicator as to the likelihood that different bat species are, or are not, likely to, typically, be a significant presence in the area within and around the proposed development site. This likelihood then, in turn, indicates the probability that bats may use the study area.

In relation to the overall bat suitability index value (28.44), this suggests the landscape in which the study area is located is of medium suitability for bats in general.

Table 11: BHSI Rating for hectad Q81

Bat Habitat Suitability Index Rating[11]	
Species	Hectad Q18
All Bats	**28.44**
Soprano pipistrelle	36
Brown long-eared bat	44
Common pipistrelle	35

[10] Collins (2023)

[11] Maps - Biodiversity Maps

Bat Habitat Suitability Index Rating[11]	
Species	Hectad Q18
Lesser horseshoe bat	15
Leisler's bat	34
Whiskered bat	29
Daubenton's bat	26
Nathusius' pipistrelle	4
Natterer's bat	33

6.2 Field Surveys

6.2.1 Bat Foraging/ Commuting Habitat Suitability Survey

The study area is dominated by artificial features such as buildings, sheds stables, access roads and pathways. Some of these hardcore areas have been colonised by grass and moss in places. There are some areas of scrub at the southern end the east side of the study area growing alongside the stables to the east. Some ornamental non-native shrubs and a few grassy areas occur within the centre of the study area. There are no woodland areas within the study area but there are a small number of scattered mature trees which include ash (*Fraxinus excelsior*), Italian alder (*Alnus cordata*) and oak (*Quercus* spp.). See Figure 5 below showing the central part of the study area.

Figure 6. View from Building No. 14 Looking Southwards

Immediately to the west of the study area is a large racecourse which is very open and although there are a few scattered trees and small treelines this is a largely open habitat. The racecourse is currently used by grazing livestock and for the production of silage. To the north there is a local road and a number of private residential dwellings. To the east are a number of agricultural and rough grassland fields which are bounded by linear hedgerows and treelines, and beyond that is the Ballybeggan River (EPA Code 23B76) which is situated approx. 140m from the boundary of the study area. To the south area some agricultural fields, a continuation of the racecourse and an access track leading southwards.

In general, the site does not have many linear hedgerows or continuous treelines, but the site does have some scattered trees, small areas of scrub, patches of grass that are not intensively managed. In addition, the overall study area is absent of artificial light and human presence is very limited which would be appealing to bats. Although connectivity to the wider landscape would be considered 'low' foraging suitability. The lack of human presence, absence of artificial light, scattered trees and minor areas of scrub habitat would be considered 'moderate' suitability.

6.2.2 Preliminary Roost Assessments (PRAs)

All buildings/structures and one tree were surveyed, and the results are set out in the sections below. The condition of each structure/building varied. Some buildings had minor damage due to abandonment and lack of maintenance but were overall structurally sound. Others had obvious signs of water damage and dampness, missing windows, holes in roofs and collapsed ceilings. Vandalism was clear in some of the building with windows smashed, litter, and signs of small fires having been lit.

6.2.2.1 No.1a - Large Stand

This west facing side comprised a large stand with concrete levels and metal railings. This structure is completely open and did not show any evidence of bat use and did not have any roosting potential. See Plate 1 and Table 12 below for observations.

Plate 1. No.1a - Large Stand

Table 12: No.1a - Large Stand PRA Results

Observations	
Bats found	No
Evidence of bat use	No
Potential for bat use	No – Very open to the elements and no potential roost features observed.
Overall Roost Suitability Assigned	Negligible

6.2.2.2 No.1b - Reception Areas Below Large Stand

This is the east facing side of the building which comprised three large bar rooms and a kitchen with a dark cellar-like room to the back. The building is in a state of disrepair with water leaking in through parts of the roof/ceiling, peeling paint, broken tiles and evidence of nesting birds. A pair of jackdaws were present in the bar room furthest south. See Plates 2, 3 and 4 and Table 13 below for observations.

Plate 2. No.1b - Reception Areas Below Large Stand

Table 13. No.1b - Reception Areas Below Large Stand PRA Results

Observations	
Bats found	No
Evidence of bat use	Yes – In various places there were droppings found on the walls and some discarded butterfly/moth wings on the ground.
 Plate 3. Discarded butterfly/moth wings	 Plate 4. Droppings on the wall (scissors for scale)
Potential for bat use	Yes – Several access points observed such as open/broken windows and gaps between wood panels. Inside there were many cracks and small crevices in the walls and peeling paint which may offer roosting potential.
Overall Roost Suitability Assigned	Moderate

6.2.2.3 No. 2 - Tote Kiosks

Large building with many small windows on the east side, some of which are missing or broken. The west side of the building comprised mainly of large metal shutters. There was one small room above the front door accessed via a small hatch. There were a number of dead birds in this small room and broken windows. Throughout the building there were nesting pigeons along the wooden beams under the roof. The corrugated roof was damaged in a number of places with some parts missing. This has led to the partial collapse of the inner plywood ceiling. See Plates 5, 6 and 7 and Table 14 below for observations.

Plate 5. No.2 - Tote Kiosks

Table 14. No.2 - Tote Kiosks PRA Results

Observations	
Bats found	No
Evidence of bat use	Yes – Bat droppings were found on the walls and some discarded butterfly/moth wings on the ground in the western side of the building

Observations	
 Plate 6. Discarded butterfly/moth wings	 Plate 7 . Droppings on the wall
Potential for bat use	Yes – several access points observed such as open/broken windows and gaps and holes in the roof. Inside there were many cracks between block work and wooden beams which may offer roosting potential.
Overall Roost Suitability Assigned	Moderate

6.2.2.4 No. 3 - Ancillary Building no. 1

A large 'L' shaped building with men and women's toilets which featured a number of stalls and sinks with tiles inside. The women's toilets are accessed from the north and men's from the south. The walls appeared solid from the outside and inside. The roof is flat with supporting wooden beams on the inside. Ivy was growing quite vigorously in the men's toilets, growing through gaps in the roof. See Plates 8, 9 and 10 and Table 15 below.

Plate 8. No.3 - Ancillary Building no. 1

Table 15. No.3 - Ancillary Building no. 1 PRA Results

Observations	
Bats found	No
Evidence of bat use	Yes – Many droppings found in the men's toilet on some of the cisterns and tiles on the walls.
 Plate 9. Droppings on toilet cistern	 Plate 10. Droppings on the wall
Potential for bat use	Yes – Several access points observed such as open/broken windows and gaps between wood panels. Inside there were many cracks and small crevices in the walls and peeling paint which may offer roosting potential.
Overall Roost Suitability Assigned	Moderate

6.2.2.5 No. 4 - Working Entrance Building

Small structure comprised a small number of old ticket stalls with solid walls and corrugated tin roof. The walls were in good condition, but the roof was rusty and damaged with a few holes and some panels missing. There were no doors on any of the stalls at the front. There was one square hole in the wall which appeared to be a type or 'window hatch' with a few old swallows nests inside. There was no evidence of bat presence within the structure. See Plate 11 and Table 16 below.

Plate 11. - No.4 - Working Entrance Building

Table 16: No.4 - Working Entrance Building PRA Results

Observations	
Bats found	No
Evidence of bat use	No
Potential for bat use	No – Very open to the elements and no potential roost features observed.
Overall Roost Suitability Assigned	Negligible

6.2.2.6 No. - 5, 6 , 7, 8, 13, 15 - Stables

The stables in buildings No. 5, 6, 7, 8, 13 and 15 all have corrugated tin roof, many with holes, rust and some have collapsed fully or partially leaving some stalls damp and open to the elements. Old swallows' nests were observed inside, and many of the stables were damp inside from rain water seeping in. There was no evidence of bat presence within the structure See Plate 12 and Table 17 below.

Plate 12. No.5, 6 , 7, 8, 13, 15 - Stables

Table 17. No.5, 6 , 7, 8, 13, 15 - Stables PRA Results

Observations	
Bats found	No
Evidence of bat use	No
Potential for bat use	Unlikely – Although there are a number of potential access points such as holes in the roof and large opening/hole in stone/concrete at back of each stable, but most were very open to the elements resulting in damp and unstable environments for roosting bats.
Overall Roost Suitability Assigned	Negligible

6.2.2.7 No. 9 - Ancillary building no.2

This small building comprised a flat roof with small rooms containing electrical equipment and fuse boxes. It appeared these rooms had been well-sealed/boarded up for an extended period of time prior to survey access to the building. The building appeared solid with no obvious signs of damage and each room was dry with no water damage. Each window was tightly boarded up and there were many cobwebs within the rooms, indicating a lack of bat activity within. There was no evidence of bat presence within the structure. See Plate 13 and Table 18 below.

Plate 13. No.9 - Ancillary building no.2

Table 18: No.9 - Ancillary building no.2 PRA Results

Observations	
Bats found	No
Evidence of bat use	No
Potential for bat use	Unlikely – Although there may be some small gaps in the doors and boards, there did not appear to be any signs of bat use in any of the rooms.
Overall Roost Suitability Assigned	Negligible

6.2.2.8 No.10 - Ancillary building no.3

This building had a large room when entering through the door on the west of the building leading to some smaller rooms (bathroom) and hallways. Areas of the roof had holes and gaps and throughout this building the ceilings were all very damp and some areas had dripping water coming through the light fixtures causing partial ceiling collapse in places. Most windows appeared to be intact and two exterior doors on the east side of the building leading outside were nailed shut. See Plate 14 and Table 19 below. There was no evidence of bat presence within the structure, however, due to health and safety concerns, a full PRA of the building was not carried out.

Plate 14. No.10 - Ancillary building no.3

Table 19: No.10 - Ancillary building no.3 PRA Results

Observations	
Bats found	No
Evidence of bat use	No
Potential for bat use	Yes – A number of potential access points via holes in the roof and front door. Additionally precautionary principle used due to the integrity of the building being unsafe, the surveyor's duration within the building was short and some areas were unable to be searched fully for evidence of bats.
Overall Roost Suitability Assigned	Low

6.2.2.9 No. 11 - Stewards tower

A small structure called the 'stewards tower' with a room on the ground floor with block walls and some metal beams supporting the corrugated roof/ceiling and the floor of the first floor. The ceiling was damp and showed signs of water damage. There were gaps between the stone blocks and metal beams and ivy growing in from outside. The door and the windows were broken. The first floor had a room with corrugated walls and roof. This room was not accessed due to safety. The wood on the stairs was rotten and the ceiling of the lower floor was damaged making them unsafe. See Plate 15 and Table 20 below.

Plate 15. No. - 11 Stewards tower

Table 20: No. - 11 Stewards tower PRA Results

Observations	
Bats found	No
Evidence of bat use	No
Potential for bat use	No – Very open to the elements and no potential roost features observed.
Overall Roost Suitability Assigned	Yes – Potential access points observed via the broken windows and door. Some gaps between the stone blocks and metal beams may offer roosting potential. Additionally, precautionary principle used due to the unsafe nature of the stairs and first floor the surveyors were unable to access that area to be searched fully for evidence of bats.
Overall Roost Suitability Assigned	Low

6.2.2.10 No. 12 - Ancillary building no.4

This was a small building with solid block walls and a corrugated tin roof that was likely used as a kitchen/canteen facility as there were cupboards, worktop, old fridge and sink. The roof was supported with mostly metal beams with some wooden beams and panels. Some ivy was growing through the gaps between the back wall and the roof. The back of the building and one side was heavily covered with ivy. There was evidence of bat presence within the structure; see Plates 16, 17 and 18 and Table 21 below.

Plate 16. No. 12 - Ancillary building no.4

Table 21: No. 12 - Ancillary building no.4 PRA Results

Observations	
Bats found	No
Evidence of bat use	Yes – A few droppings found on the wall and some discarded butterfly/moth wings on the ground.
Potential for bat use	Yes – Potential access point via the door which is ajar and potential gaps between the wall and the roof. Inside, some wood panels and beams with gaps between may offer roosting potential.
 Plate 17. Discarded butterfly wings	 Plate 18. Droppings on wall
Overall Roost Suitability Assigned	Moderate

6.2.2.11 No.14 - Jockeys Facilities

This was a large building with solid walls and a tiled roof. The ground floor comprised a number of rooms which included showers, sauna, toilets and office rooms. The first floor comprised one large function room with a small office area, kitchen and a door leading to a stairwell on the eastern side. There was also a hatch leading to a large attic space. The building was largely in good condition with no major structural damage and no obvious roof tiles missing. There were some cracks and holes in parts of the wooden fascia along the roof and a number of broken windows, mostly on the southern side (front) of the building. Dense ivy was present on the north side and east side of the building. See Plate 19 and Table 22 below.

Plate 19. No.14 - Jockeys Facilities

Table 22: No.14 - Jockeys Facilities PRA Results

Observations	
Bats found	No
Evidence of bat use	No
Potential for bat use	Yes – Potential access points observed via the broken windows, open windows and gaps/holes in the wooden fascia along the roof. Attic was in good condition and no obvious damage or water leaking in In general, the building was not drafty, did not have any damp/water damage and was dry. Additionally precautionary principle used due to some of the toilet stalls being nailed shut and inaccessible which meant these stalls could not be searched for evidence of bat use.
Overall Roost Suitability Assigned	Moderate

6.2.2.12 No.16 - Male WC Block

This buuilding comprised a small toilet block with solid walls with a flat roof. The entrance door was broken and lying on the ground. Two windows were intact, with one window open and one window broken and missing its pane of glass. Inside were a number of toilet stalls, urinals and sinks with mirrors. There was also a small hole in the ceiling, perhaps where a light fixture once was. Dense ivy cover above and beside the door. See Plates 20, 21 and 22 and Table 23 below.

Plate 20. No.16 - Male WC Block

Table 23: No.16 - Male WC Block PRA Results

Observations	
Bats found	No
Evidence of bat use	Yes – A number of droppings were observed on the tiles around the sink and on the wall below the open window.
Potential for bat use	Yes – Potential access points observed via the broken/open windows and open door. The peeling plaster/paint and the hole in the ceiling may offer roosting potential.

Observations	
 Plate 21. Droppings on tiles	 Plate 22. Droppings on wall
Overall Roost Suitability Assigned	Moderate

6.2.2.13 No. 17 - Stables no.7

Structure No. 17 comprised a number of stalls/small rooms. Some of these stalls had a missing roof, partially collapsed roof, or differing levels of damage leaving them open to the elements. Stalls with relatively intact roofs were drier inside and appeared more structurally sound. There were a lot of bird droppings observed and some old swallow nests between the metal beams and roof in two of the stalls. See Plate 23 and Table 24 below.

Plate 23. No. 17 - Stables no.7

Table 24: No. 17 - Stables no.7 PRA Results

Observations	
Bats found	No
Evidence of bat use	Likely – There appeared to be bat droppings on one of the walls along with bird droppings. Difficult to distinguish.
Potential for bat use	Yes - Potential access points observed via the gaps between the vents, holes where vents are no longer there and broken doors. In general, the building was not drafty, did not have any damp/water damage and was dry. Roosting potential between beams and roof.
Overall Roost Suitability Assigned	Low

6.2.2.14 No. 18 - Stables no.8

Structure No. 18 comprised a number of stalls/small rooms with solid block walls and corrugated tin roof. Mostly used for storage. One part was open with no doors, and the other three rooms had doors. The roof was mostly intact with some rust and small holes here and there. The walls were in good condition and the windows not boarded up appeared to be intact and closed. See Plate 24 and Table 25 below.

Plate 24. No. 18 - Stables no.8

Table 25: No. 18 - Stables no.8 PRA Results

Observations	
Bats found	No
Evidence of bat use	No
Potential for bat use	Yes - Potential access points observed via the gaps between the vent and small gaps in boarded up windows and between the wall and the roof. In general, the building was not drafty, did not have any damp/water damage and was dry. Roosting potential between beams and roof.
Overall Roost Suitability Assigned	Low

6.2.2.15 No. 19 - Stables no.9

Structure No. 18 comprised three stalls/small rooms. These were being used for the storage of horse racing signs and fences, and one had chairs and a small kitchen area. The roof was quite rusty with parts missing. The walls appeared solid and in good condition. There were clear signs of water damage from rain getting in through the damaged roof. Along some of the metal and wooden beams were a number of old swallows' nests. See Plate 25 and Table 26 below.

Plate 25. No. 19 - Stables no.9

Table 26: No. 19 - Stables no.9 PRA Results

Observations	
Bats found	No
Evidence of bat use	No
Potential for bat use	Unlikely – very open to the elements and damaged roof allowing water in. Although there were gaps between the wooden beams which could provide roosting potential, the roof was rusty with holes in allowing wind and rain in.
Overall Roost Suitability Assigned	Negligible

6.2.2.16 No. 20 - Stables no.10

This small building comprised one room with solid block walls and corrugated tin roof. This building was used for storing signs and fencing. Both the walls and roof were in good condition, and the room was dry with no signs of rain coming in. Dense ivy was growing along the roof on the eastern side. Lots of rabbit droppings in one corner and a few old swallows' nests between the wooden beams and the roof. See Plate 26 and Table 27 below.

Plate 26. No. 20 - Stables no.10

Table 27: No. 20 - Stables no.10 PRA Results

Observations	
Bats found	No

Observations	
Evidence of bat use	No
Potential for bat use	Yes – A number of potential access points via gaps in the air vents and a gap between the door and the roof. Conditions inside dry and not drafty suitable. Roosting potential between beams and roof.
Overall Roost Suitability Assigned	Low

6.2.2.17 No. 21 - Stables no.11

Structure No. 21 comprised a small shed with stone wall at the back and corrugated tin roof, doors and outer walls. Metal panels were missing off the main door and some of the wall panels were damaged or missing. The roof was mostly intact with some small holes and rusted parts. The shed was currently being used to store various horseracing equipment. See Plate 27 and Table 28 below.

Plate 27. No. - 21 Stables no.11

Table 28: No. 21 - Stables no.11 PRA Results

Observations	
Bats found	No
Evidence of bat use	No

Observations	
Potential for bat use	No – very open to the elements and no potential roost features observed.
Overall Roost Suitability Assigned	Negligible

6.2.2.18 No. 22 - Turnstile Block & No. 23 - Officials tower

Structures No. 22 & 23 were situated along the same row. Structure No. 22 comprised a number of ticket stalls, and an old infirmary at the end. The walls were solid and most of the corrugated tin roof was intact with some rust and holes here and there. The plywood ceiling had partially collapsed within the infirmary due rainwater damage. There were signs that birds had been nesting in the insulation along with bird droppings.

Structure No. 23 was situated at the western end of this row and comprised a small metal box described as the 'official's tower'. Safe access to this structure was not possible due to the condition of the ladders.

See Plate 28 and Table 29 below.

Plate 28. No.22 - Turnstile Block & No.23 - Officials tower

Table 29: No.22 - Turnstile Block & No.23 - Officials tower PRA Results

Observations	
Bats found	No
Evidence of bat use	Likely – There appeared to be a small number of bat droppings within one of the stalls along with bird droppings. Difficult to distinguish.
Potential for bat use	Yes – A number of potential access points via open/broken doors, holes in the roof. Roosting potential between beams and roof. Additionally, precautionary principle used due surveyors unable to access 'official's

Observations	
	tower' due to safety and therefore this could not be searched fully for evidence of bats.
Overall Roost Suitability Assigned	Low

6.2.2.19 No. 24a - Spectator Stand

This large structure comprised of concrete levels and metal railings and large metal shelter overhead. There were rooks nesting in between the beams of the metal overhead shelter.

Most of this structure is open with the exception of a small room (commentators' box) which was accessed via a metal staircase at the north-western corner. This small room had wooden flooring, metal walls and ceiling/roof with metal beams. The room was dark with some light shining through the metal shutter at the front.

See Plate 29 and Table 30 below.

Plate 29. 24a - Spectator Stand

Table 30: 24a - Spectator Stand PRA Results

Observations	
Bats found	No
Evidence of bat use	No
Potential for bat use	No – Mostly very open to the elements and no potential roost features observed.
Overall Roost Suitability Assigned	Negligible

6.2.2.20 No. 24b - Reception Areas beneath Stand

This large building was directly east of the large stand (Building No. 21a) and has a ground floor and a 1st floor. The roof was flat, and the walls were solid some of which were red brick and others stone/concrete.

The ground floor comprised a number of separate rooms such as toilets, cloak rooms, ticket booths, small storage room and bar rooms. Some of the doors were in good condition and tightly shut and some of the doors were slightly ajar with some damage such as cracks and holes. Notably these separate rooms were mostly all in complete darkness with all windows boarded up leaving little to no natural light in. Some of the ceilings were extremely tall and with some water damage from rain coming in from outside.

To access the 1st floor there were two sets of stairs leading from outside, one located at the north site and the other one located at the northwest of the building. There was also an enclosed stairwell accessed via a door on the ground floor at the northeast side of the building. The 1st floor comprised a large bar with two adjoining rooms. Some of the windows had been boarded up whilst some remained broken with glass still attached. There were jackdaws actively nesting within the gaps between the walls and ceiling and were observed entering through a hole on the wooden panels on the southside entrance. There was some signs of water damage in some of the corners from rainwater. See Plates 30 to 34 and Table 31 below.

Plate 30. 24b - Reception Areas beneath the Spectator Stand

Plate 31. Ground floor

Plate 32. 1st floor

Table 31: 24b - Reception Areas beneath Stand PRA Results

Observations	
Bats found	Yes – A deceased brown long-eared bat was found clinging to the wall in the large main room on the first floor.
Evidence of bat use	Yes – Some bat droppings found in the toilets and bars on the ground floor.

Observations	
Potential for bat use	Yes - A number of potential access points via open/broken doors, broken window and gaps and holes in wood panelling along the top of the first floor. Peeling paint and gaps between the walls and roof provide roosting potential.
 Plate 33. Droppings on wall in toilet on ground floor	 Plate 34. Deceased brown long-eared bat found on a wall on the 1st floor
Overall Roost Suitability Assigned	Moderate

6.2.2.21 Eucalyptus Tree

During ground-level assessment there were no potential roost featured such as hole, cracks and crevices observed. Additionally, no evidence of bats (droppings, staining etc.) was recorded. Having regard to guidelines in Collins (2023), this tree all was classed as having 'negligible' suitability for roosting bats. See Plate 35 below.

Plate 35. Eucalyptus Tree Assessed

6.2.3 Presence/Absence Surveys (Emergence Surveys)

The results of the PRA surveys determined that 13 no. buildings had been assessed as having either 'low' or 'moderate' roosting potential and emergence surveys were therefore conducted on each. The remaining buildings/structures were deemed to have 'negligible' roosting potential and therefore no further surveys were carried out and will not be discussed any further in this report.

A summary of the emergence surveys is shown in **Table 32** below. Each building is listed with its assigned 'Roost Suitability', the number of surveys completed and whether bats were confirmed to be roosting.

Table 32: Summary of Emergence Surveys

Building No.	Building	Overall Roost Suitability Assigned	No. of emergence Surveys Carried out	Confirmed Bat Activity
1b	Reception Areas Below Large Stand	Moderate	2	**Yes**
2	Tote Kiosks	Moderate	2	**Yes**
3	Ancillary Building no. 1	Moderate	2	**Yes**
10	Ancillary building no.3	Low	1	**Yes**
11	Stewards tower	Low	1	No
12	Ancillary building no.3	Moderate	2	No
14	Jockeys Facilities	Moderate	2	**Yes**
16	Male WC Block	Moderate	2	**Yes**
17	Stables no.7	Low	1	**Yes**
18	Stables no.8	Low	1	No
20	Stables no.10	Low	1	No
22 & 23	No.22 - Turnstile Block & No.23 - Officials tower	Low	1	**Yes (Building No. 22)**
24b	Reception Areas beneath Stand (ground floor)	Moderate	2	**Yes**
24b	Reception Areas beneath Stand (1st floor)	Moderate	2	No

Each building where bat activity was recorded will be discussed further in the sections below. For the full details of each survey of each building listing all bat exit/entry times and species please see **Appendix 4**.

6.2.3.1 No. 1b - Reception Areas Below Large Stand

This building was surveyed on two separate nights. On both occasions a small number of bats were observed exiting and entering through gaps in the wood panels below the concrete. On the first survey night activity began at 22:24 and ceased at 22:57. On the second night activity began at 22:22 and ceased at 23:23. Common pipistrelle

was the most common species recorded, and soprano pipistrelle was recorded on one occasion entering the building. See **Plate 35** showing the exit and entry points on the building.

Plate 36. Exit and Entry Points on Building No. 1b used by bats

6.2.3.2 No. 2 - Tote Kiosks

This building was surveyed on two separate nights. On the first survey night a common pipistrelle was recorded at 22:14 on the east side of the building exiting a hole in the roof towards the southern end of the building (marked in blue in **Plate 36** below).

On the second survey night there were three observations of common pipistrelle exiting a hole in the roof on the west side of the building (marked in yellow in **Plate 37** below). Also on the second survey night, both common pipistrelle and brown long-eared bats were recorded on a few occasions entering and exiting a broken window on the east side of the building (marked in red in **Plate 36** below). Activity began at 22:30 and ceased at 23:32.

Plate 37. Exit/entry points east side of building no. 2 used by bats

Plate 38. Exit/entry points west side of building no. 2 used by bats

6.2.3.3 No. 3 - Ancillary Building no. 1

This building was surveyed on two separate nights. On the first night soprano pipistrelle were observed flying in and out and around on the inside of the men's toilet block (marked in red in Plate 38). Activity began at 22:08 and ceased at 23:34.

On the second survey night, one soprano pipistrelle was observed at 22:24 exiting the female toilet block (marked yellow in Plate 39.

Plate 39. Door to male toilets (southern end) of building No. 3 used by bats

Plate 40. Door to ladies' toilets (northern end) of building No. 3 used by bats

6.2.3.4 No. 10 - Ancillary building no.3

This building was surveyed on one night. On a number of occasions, a bat was observed exiting and entering through the door on the west site of the building (marked in yellow in Plate 40). In a few instances the bat flew in and out a few times before flying off. Most of the observations pertain to common pipistrelle and on one occasion soprano pipistrelle. Activity began at 22:29 and ceased at 23:41.

Plate 41. Exit and Entry point of building No. 10 used by bats

6.2.3.5 No. 14 - Jockeys Facilities

This building was surveyed on two separate nights. On the first survey night, at 22:28, a common pipistrelle was observed entering the ivy at the north side of the building (marked yellow in **Plate 41**). On the second survey night common pipistrelle were observed on a few occasions exiting and entering the ivy on the east side of the building (marked red in **Plate 41**) and on one occasion entering the ivy on the north side of the building. Activity began at 22:42 and ceased at 23:09.

Plate 42. Exit and entry points of building No. 14 used by bats

6.2.3.6 No. 16 - Male WC Block

This building was surveyed on two separate nights. The first night there were no bats observed exiting or entering. On the second night there were four observations of bats entering the men's toilets through the open window (marked red in **Plate 41**). Common pipistrelle were recorded twice, and soprano and Leisler's bat on one occasion each. Activity began at 22:33 and ceased at 23:03.

Plate 43. Entry point of building No. 16 used by bats

6.2.3.7 No. 17 - Stables no.7

This building was surveyed on one night. On a number of occasions bats were observed exiting and entering the stall via a hole where a vent once was (marked in red in **Plate 43**). The majority of the observations were of common pipistrelle with Leisler's bat recorded on two occasions. Activity began at 22:06 and ceases at 23:17.

Plate 44. Exit and entry point of building No. 17 (stables no. 7) used by bats

6.2.3.8 No. 22 - Turnstile Block & No.23 - Officials tower

This building was surveyed on one night. There was no activity observed at building No. 23. There was only one observation which occurred at building No. 22, at 22:50 a common pipistrelle was recorded entering one stall and a few seconds later exiting the stall next to it. See **Plate 44** below.

Plate 45. Exit and entry point of building No. 22 used by bats

6.2.3.9 No. 24b - Reception Areas beneath Stand (ground floor)

This building comprised two floors, each level was surveyed on two occasions. No bats were observed exiting or entering the 1st floor. On the ground floor bats were seen exiting and entering the boarded up ticket booth and also appeared to exit and enter the gaps in the ceiling (see blue areas in **Plates 45** and **47**). Bats were also observed exiting from a hole in a door below a stairwell (see **Plates 45** and **46**).The majority of the observations were common pipistrelle and on one occasion on the second night a soprano pipistrelle was observed.

Additional activity was observed during a survey carried out on the 8th July 2025 for the first floor. There was no activity recorded for the first floor but bats were recorded on the ground floor exiting the gap in door below a stairwell and from the blocks in the ceiling. On this night all observations pertain to common pipistrelle.

Plate 46. Area of activity on ground floor of building No. 24b

Plate 47. Exit points used by bats on ground floor (yellow area) of building No. 24b

Plate 48. Exit and entry points used by bats on ground floor (blue area) of building No. 24b

6.2.4 Passive Automated Bat Surveys (PABS)

Because an individual bat can be the source of more than one, or even many, calls, the numbers of calls recorded by the bio-acoustic units are not a direct measure of the numbers of any bat species. Bats will frequently fly over and back along short sections of habitat, if prey is readily available, while foraging and they use linear features to navigate through the landscape, to and from roosts, and within foraging sites. Therefore, the number of calls recorded is likely to be greater than the number of bats that generated them.

As mentioned in Section 5.2.4, static units were deployed for a total of eight nights in April 2025 to gather some baseline data.

A total of 2,391 bat passes were recorded with soprano pipistrelle having the highest number of bat passes recorded which was 46% of all bat passes.

Below is a list of all species recorded, and percentage of bat passes for each:

- Soprano pipistrelle (46.%),

- Common pipistrelle (33.4%),
- Leisler's bat (7.7%),
- Species from the genus *Myotis* (0.5%).
- Lesser horseshoe (0.4%),
- Brown long-eared (0.3%) and
- Nathusius' pipistrelle (<0.1%) and
- No ID (11.7).

6.2.4.1 Activity Levels

The species recorded are listed in **Table 33,** below, along with the percentage of the total number of bat passes/calls the BHSI rating for each species outlined. While the BHSI ratings for soprano pipistrelle and common pipistrelle broadly reflect the levels of activity recorded of the species in question, the BHSI ratings for the remainder of the species are somewhat at odds with the level of activity recorded on-site.

Table 33. Percentage of total bat calls recorded during the PAB surveys by species and corresponding BHSI Rating

Species	% of total bat calls recorded	BHSI Rating
Brown long-eared bat	0.3	44
Common pipistrelle	33.4	35
Nathusius' pipistrelle	<0.01	4
Soprano pipistrelle	46.0	36
Leisler's bat	7.7	34
Lesser horseshoe	0.4	15
Daubenton's bat		26
Natterer's bat	0.5[12]	33
Whiskered bat		29

<u>Bat passes Recorded at Individual Sampling Points</u>

The number of bat passes of each species recorded at each sampling point during the survey period are provided in **Table 34**. The percentage of the total activity recorded at each sampling point is also included. The highest level of activity was recorded at SP7 (85.2%) followed by SP2 (7.9%).

Cells highlighted yellow indicate the largest number of bat passes recorded at a sampling point for each species; the cell highlighted green is the largest sampling point total over the survey period. **Figure 7** shows the percentage of all species recorded during PAB surveys.

[12] *Myotis* spp.

Table 34: Number of bat passes of each species recorded at each sampling point during the PAB survey

Sampling Point and Building No.	Myotis spp.	Leisler's	Narthusius Pip	Common Pip	Soprano Pip	Brown long-eared	Lesser horseshoe	No. ID	Total	%
SP1 (No. 14)		74		16	6			13	**109**	**4.6**
SP2 (No. 16)	3	96	1	32	46	2		8	**188**	**7.9**
SP3 (No. 24b)				1			2		**3**	**0.1**
SP4 (No. 24b)									**0**	**0.0**
SP5 (No. 1b)				2	5			1	**8**	**0.3**
SP6 (No. 1b)	2			8		4		5	**19**	**0.8**
SP7 (No. 2)	7	5		738	1,034	1	1	252	**2,038**	**85.2**
SP8 (No. 3)	1	9		2	8		6		**26**	**1.1**
Total	**13**	**184**	**1**	**799**	**1,099**	**7**	**9**	**279**	2,391	
%	**0.5**	**7.7**	**0.0**	**33.4**	**46.0**	**0.3**	**0.4**	**11.7**		

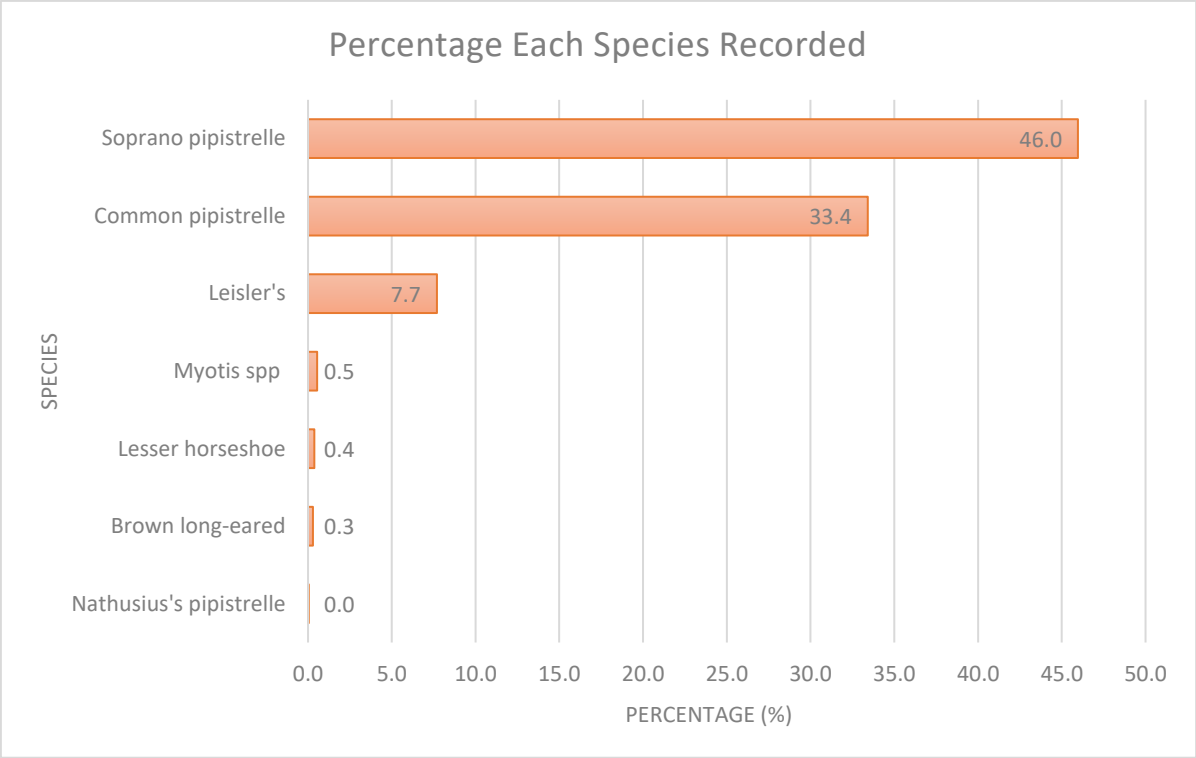

Figure 7. Percentage of all Species Recorded During PAB Surveys

7. Discussion

7.1.1 Activity Summary for Each Bat Species

Each species recorded within the study area is listed in Table 35 below with a summary of the observations for each. The most common species most frequently recorded in the PAB and presence/absence emergence surveys were common and soprano pipistrelle and Leisler's bat followed by brown long-eared bat. A dead brown long-eared bat was encountered during the PRA surveys of the buildings and was found hanging from the wall in building No. 24b (1st floor). There was no roost found or any other signs of bat use identified on the 1st floor. A static unit was placed here (SP4) which did not record any bat activity over a 8 night period. Additionally, during the presence/absence emergence surveys, no brown long-eared bats or any other bat species were observed using the first floor as a roost. It was concluded that this deceased bat may have entered the 1st floor and passed away inside.

Species recorded during the PAB surveys and not recorded during the presence/absence emergence surveys were *Myotis* spp., Nathusius pipistrelle and lesser horseshoe bat. These species were recorded in small numbers during the PAB surveys and only *Myotis* spp. was observed foraging/commuting at the study area. Neither Nathusius pipistrelle nor lesser horseshoe bat were observed foraging/commuting at the study area during the site visits.

Table 35: Summary of Activity of Each Species Within the Study Area

Species	Recorded during PAB surveys	Recorded emerging/exitingBuildings	Summary of all Activity
Myotis spp.	Yes	No	• A total of 13 bat passes recorded at four of the eight SP locations. Half of the calls occurred at SP7 which was located in Building No.2 (Tote Kiosks). This SP location was the busiest with over 80% of all bat passes recorded at this location. • During the emergence surveys, this species was not recorded exiting/entering any buildings but was observed on occasion foraging in the study area.
Leisler's bat	Yes	Yes	• A total of 184 bat passes recorded at four of the eight SP locations. Most of the calls occurred at SP1 (building No. 14) and SP2 (building No. 16). • During the emergence surveys, Leisler's bat was recorded entering building No. 16 and exiting and entering building No. 17. • This species was observed regularly foraging/commuting at the study area.
Nathusius pipistrelle	Yes	No	• One bat pass was recorded at SP2 (building No. 16). • During the emergence surveys, this species was not recorded exiting/entering any buildings. • This species was not observed foraging/commuting at the study area.
Common pipistrelle	Yes	Yes	• A total of 799 bat passes recorded at seven of the eight SP locations. 738 of the bat passes occurred at SP7 which was located in Building No.2 (Tote Kiosks). This SP location was the busiest accounting for over 80% of all bat passes recorded. • During the emergence surveys, common pip was the most common species recorded and was seen entering/exiting eight buildings. • This species was also observed regularly foraging/commuting at the study area.
Soprano pipistrelle	Yes	Yes	• A total of 1,099 bat passes recorded at five of the eight SP locations. 1,034 of the bat passes occurred at SP7 which was located in Building No.2 (Tote Kiosks). This SP location was the busiest with over 80% of all bat passes. • During the emergence surveys, soprano pip was the second most common species recorded and was seen entering/exiting four buildings. • This species was also observed regularly foraging/commuting at the study area.
Brown long-eared bat	Yes	Yes	• A total of 7 bat passes recorded at four of the eight SP locations. Most of the calls occurred at SP6 (building No. 1b) with a few at and SP2 (building No. 16) and one at SP7 (building No. 2). • During the emergence surveys, this species was recorded entering/exiting one building (building No. 2).

Species	Recorded during PAB surveys	Recorded emerging/exitingBuildings	Summary of all Activity
			• Although a deceased brown long-eared bat was encountered during the PRA of building No. 24b on the first floor, this species was not recorded on the static unit deployed within this building. Additionally, this species was not observed exiting/entering this building during the emergence surveys.
Lesser horseshoe bat	Yes	No	• A total of 9 bat passes recorded at three of the eight SP locations. Six of the passes were recorded at SP8, one at SP7 and two at SP3. • During the emergence surveys, this species was not recorded exiting/entering any buildings. • This species was not observed foraging/commuting at the study area.

7.1.2 Value of Site for Foraging and Commuting Bats

The study area is dominated by artificial features such as buildings, sheds stables, access roads and pathways. Some of these hardcore areas have been colonised by grass and moss in places. There are a few areas of scrub at the southern end and the east side growing alongside the stables. Some ornamental non-native shrubs and a few grassy areas occur within the centre of the study. There are no woodland areas within the study area but there are a small number of scattered mature trees which include ash (*Fraxinus excelsior*), Italian alder (*Alnus cordata*) and oak (*Quercus* spp.).

Immediately to the west of the study area is a large racecourse which is very open and although there are a few scattered trees and small treelines this is a largely open habitat. The racecourse is currently used by grazing livestock and for the production of silage. To the north there is a local road and a number of private residential dwellings. To the east are a number of agricultural and rough grassland fields which are bounded by linear hedgerows and treelines, and beyond that is the Ballybeggan River (EPA Code 23B76) which is situated approx. 140m from the boundary of the study area. To the south area some agricultural fields, a continuation of the racecourse and an access track leading southwards.

Whilst on-site conducting the emergence surveys it was also noted that bats (mainly common and soprano pipistrelle and to a lesser extent Leisler's bat) were observed commuting and feeding within the study area and were seen flying around the site between buildings, around some of the trees and the areas of scrub.

The light levels within the study area would be considered low as there is no artificial light on-site. Bright artificial lights can be seen from housing estates and the Clash Road to the west and to the south looking towards Tralee town centre. It is considered that the absence of artificial lighting within study area allows a greater degree of usage and bats might be more inclined to utilise more open habitats adjacent to the site such as the racecourse which would not be the case, at least to the same degree, if artificial lighting was present.

According to the Arboricultural Impact Assessment report 2025 (Michael Garry, BSc. Arb. Dip Arb M.ArborA, Pgrad Ecology (UCC) the only tree to be considered for removal due to having low ecological value was a eucalyptus tree. This non-native tree is one of nine trees within the study area and is situated in the northwest of the study area close to building No. 23. The other eight trees identified within the study area have been marked 'retain' and will remain in-situ. If this eucalyptus tree is felled, it is unlikely to have significant impact on the overall study area for foraging bats.

Although the study area is dominated by artificial features, there was bat activity (commuting and feeding) observed on-site each night. Even though there aren't extensive linear features within the study area, there are hedgerows/treelines leading to the study area from the agricultural grasslands to the east. Overall, the mature trees, minor areas of scrub and low levels of artificial lighting provide 'low - moderate' commuting and foraging potential.

7.1.3 Value of Site for Roosting Bats

Marnell *et al*., (2022) outlines various factors which can affect the probability of bats being present within a structure (specifically summer usage of buildings by bats). This guidance was reviewed and used to assist in characterising the value of the various structures as bat roosting habitat and the general potential of structures to support roosts of any significance.

Factors relevant to the buildings/structures on-site, as per Marnell *et al*., (2022), which are considered to increase the probability of bats occurring comprise disused or used little, largely undisturbed, and the high occurrence of open windows and other potential bat entry and exit points. Factors which are considered to decrease the probability of the structures being used by bats comprise primarily their modern construction and more urban setting.

With regard to bat activity, the levels which have been recorded are of note with particular regard to the artificial nature of the study area and absence of many linear features. The undisturbed nature overall, the low levels of human activity as well as the absence of artificial lighting likely increase the value of the overall site to bats.

Bats have been confirmed roosting on-site. In the context of the local surrounding landscape and potentially the availability of roosting habitat locally, the structures are of value to local populations of some species as they provide places of refuge and shelter in an area not impacted by artificial lighting.

7.1.3.1 Roost Characterisation

The PAB surveys were carried out to gather baseline data on the bat species present at the study area and included the recording of bat activity inside some of the buildings/structures. The total number of bat passes recorded by the PAB surveys does not amount to the abundance of a species as the number of passes recorded may be from one individual. Also, in relation to static units placed inside some buildings, bat passes recorded may be from bats inside the building or also from bats flying closely to the buildings on the outside and therefore one cannot be distinguished from one another. The data collected from PABS is considered to be supplementary to the PRA surveys and the presence/absence (emergence surveys). When determining the type of bat roost in each building, the most consideration is given to the results of the PRA surveys and the presence/absence (emergence surveys).

Table 36 lists all buildings/structures with confirmed bat activity listing the level of activity, the species, the likely roosting location and the 'Roost Type'.

Table 36. Overview and Characterisation of Bat Roosts On-site

Building	Roost Type	Likely Roost Location & Physical Characteristics	Bat Species & No.	Access points	Current Vegetation and Lighting Arrangement at Access Points	Level of Human Disturbance
1b	Day/Night/Feeding Roost	Specific location not determined. Likely roost locations: • Gaps in peeling paint on walls. • Gaps in woodwork above the bar.	**Emergence Surveys:** Common pipistrelle x 5 minimum, Soprano pipistrelle x 1 minimum;	Gaps in wood panels above windows on east side of building.	No tall vegetation present. No artificial lighting.	Low
2	Day/Night/Feeding Roost	Specific location not determined. Likely roost locations: • Cracks between block work and wooden beams.	**Emergence Surveys:** Common pipistrelle x 5 minimum, Brown long-eared x3 minimum	Broken and open windows and holes/gaps in the corrugated roof.	No tall vegetation present. No artificial lighting.	Low
3	Day/Night Roost	Specific location not determined. Likely roost locations: • Gaps between wood panels. • Cracks/small crevices in the walls and peeling paint.	**Emergence Surveys:** Soprano pipistrelle x 3 minimum	Door to both male and female toilet.	No tall vegetation present. No artificial lighting.	Low
10	Day/Night Roost	Specific location not determined. Likely roost locations: • Possibly roosting above the collapsed ceiling.	**Emergence Surveys:** Common pipistrelle x 5 minimum, Soprano pipistrelle x 1 minimum.	Open front door.	No tall vegetation present. No artificial lighting.	Low
14	Day/Night Roost	Specific location not determined. Likely roost location: • Attic/loft space.	**Emergence Surveys:** Common pipistrelle x 3 minimum.	Under the soffit and fascia.	Thick ivy in areas. No artificial lighting.	Low

Building	Roost Type	Likely Roost Location & Physical Characteristics	Bat Species & No.	Access points	Current Vegetation and Lighting Arrangement at Access Points	Level of Human Disturbance
16	Day/Night Roost	Specific location not determined. Likely roost locations: • Hole in ceiling where light fixture was. • Gaps in peeling paint.	**Emergence Surveys:** Common pipistrelle x 2 minimum, Soprano pipistrelle x 1 minimum, Leisler's bat x1 minimum.	Open window.	No tall vegetation present. No artificial lighting.	Low
17	Day/Night Roost	Specific location not determined. Likely roost locations: • Crevices and cracks in walls. • Gaps between wooden beams and roof.	**Emergence Surveys:** Common pipistrelle x 4 minimum, Leisler's bat x 2 minimum.	Large hole where air vent is missing.	No tall vegetation present. No artificial lighting.	Low
22	Day/Night Roost	Specific location not determined. Likely roost locations: • Crevices and cracks in block work. • Gaps between wooden beams and roof.	**Emergence Surveys:** Common pipistrelle x 1 minimum.	Open/broken doors.	No tall vegetation present. No artificial lighting.	Low
24b (Ground floor)	Day/Night/Feeding Roost	Specific location not determined. Likely roost locations: • Ceiling below 1st floor in crevices in blockwork • Cracks in paint and wooden panels in toilet and cloakroom on ground floor.	**Emergence Surveys:** Common pipistrelle x 8 minimum, Soprano pipistrelle x 2 minimum	Crevices in blockwork and gaps/holes in door to toilet and cloak room on ground floor.	No tall vegetation present. No artificial lighting.	Low

8. Ecological Evaluation

The following table (Table 37) outlines the ecological evaluation assigned to each species recorded during presence/absence surveys with regard to the proposed development site, including the roost evaluation, where relevant.

Table 37. Ecological evaluation assigned to each species recorded during surveys

Species	Survey Results	Ecological value relative to study area	Roost Evaluation (Marnell *et al.*, 2022)
Leisler's bat	Day/Night Roost Foraging/commuting	Local importance (higher value)	'Small numbers of common species. Not a maternity site' – Low significance
Common pipistrelle	Day/Night/feeding Roost Foraging/commuting	Local importance (higher value)	'Small numbers of common species. Not a maternity site' – Low significance
Soprano pipistrelle	Day/Night/feeding Roost Foraging/commuting	Local importance (higher value)	'Small numbers of common species. Not a maternity site' – Low significance
Brown long-eared bat	Day/Night/Feeding Roost Foraging/commuting	Local importance (higher value)	'Small numbers of rarer species. Not a maternity site' – Moderate significance
Myotis spp.	Not roosting Foraging/commuting	Local importance (higher value)	N/a

9. Potential Impacts on Bats Associated with the Proposed Development (Demolition of Buildings)

In general, activities such as demolition projects, can result in a variety of impacts on bats, including:

- Physical disturbance of bats, or injury or mortality (e.g. in roost during destruction),
- Loss/physical disturbance of roosts e.g. destruction of buildings,
- Noise disturbance of bats e.g. increase human presence, use of machinery etc
- Lighting disturbance of bats - artificial lighting can impact on bats in several ways. The extent to which lighting may affect bats depends on individual species sensitivity to light. Lighting attracts insect prey, resulting in concentrations of prey in potentially less suitable areas and a corresponding reduction in prey availability in more suitable foraging areas. For light sensitive species, such as lesser horseshoe bat, lighting can therefore reduce the area of foraging habitat available and can fragment the landscape and cause barriers to movement,
- Loss/modification/fragmentation of foraging/commuting habitats (physically or via disturbance e.g. lighting).

The following table (Table 38) outlines the potential demolition phase impacts on bats associated with the proposed development.

Table 38. Potential/anticipated impacts on bats associated with the proposed demolition works

Potential Demolition Phase Impacts	
Physical disturbance of bats (e.g. injury or mortality)	During proposed works, activities such as demolition could result in physical injury or mortality of roosting bats.
Loss/disturbance/modification of bat roosts or roost access points	The proposed development will result in the loss of bat roosts (common pipistrelle, soprano pipistrelle, Leisler's and brown long-eared bat). These roosts have been categorised as ranging from 'Low' to 'Moderate' in significance – see **Table 37** above.
Noise disturbance	There will be an increased human presence on-site throughout the demolition works. The use of machinery and general demolition activity will result in an increase in fugitive noise emissions considerably over and above current baseline conditions for a sustained period.
Lighting disturbance	During the demolition phase, there will be an increase in the level of lighting on-site; however, use of lighting will be temporary as it will mainly be associated with works during standard construction hours and is expected to be localised within the site, corresponding to the area of works active at any one time.
Loss/Fragmentation of commuting or foraging habitat	The site does not contain any high-value foraging/commuting habitats for bats. The impact of loss of very minor areas of grass verge and scrub in the immediate vicinity of some buildings associated with the proposal is considered negligible. o linear habitat features of value to bats occur within the site.

10. Assessment of Potential Impacts and Effects

Potential impacts and effects on bat species as a result of the proposed demolition works in the absence of mitigation are characterised in the following table (Table 39).

Table 39. Significance of effects on bats arising from unmitigated impacts

Species	Ecological Value	Unmitigated Impacts	Significance of effects
Leisler's bat	Local importance (higher value)	Loss of roosts/roosting bats Day/night roost	Effects associated with loss Day/Night roosts are assessed as **permanent, slight, negative effects.**
Common pipistrelle	Local importance (higher value)	Loss of roosts/roosting bats Day/Night/Feeding roost	Effects associated with loss Day/Night/Feeding roosts are assessed as **permanent, slight, negative effects.**
Soprano pipistrelle	Local importance (higher value)	Loss of roosts/roosting bats Day/Night/Feeding roost	Effects associated with loss Day/Night/Feeding roosts are assessed as **permanent, slight, negative effects.**
Brown long-eared bat	Local importance (higher value)	Loss of roosts/roosting bats Day/Night/Feeding roost	Effects associated with loss Day/Night/Feeding roosts are assessed as **permanent, moderate, negative effects.**
All bats (Common pipistrelle, soprano pipistrelle, brown long-eared bat, lesser horseshoe bat, Leisler's bat, *Myotis* spp., Nathusius' bat)	Local importance (higher value	Disturbance/displacement (noise/human activity/lighting) Direct/indirect disturbance and/or displacement effects from lighting, noise and human activity. Loss/fragmentation of commuting/foraging habitat	Effects associated with demolition-related disturbance/displacement of bats are assessed as **short-term, slight to moderate, negative effects**. Effects associated with loss of foraging/commuting habitat assessed as **permanent, imperceptible, negative effects**

11. Mitigation

11.1 NPWS Derogation Licence

Several bat roosts have been identified within the site. All bats and their roosts are afforded strict legal protection by both Irish and European law. It is an offence, under Regulation 51 of the European Communities (Birds and Natural Habitats) Regulations, 2011 to either deliberately disturb a bat, particularly during the period of breeding, rearing, hibernation and migration, or to damage or destroy a bat's breeding site or resting place (Marnell *et al*., 2022).

The proposed development comprises the demolition of all buildings/structures within the study area and some minor vegetation removal.

Due to the characteristics of the proposed development,

and the locations of the bat roosts identified within the site (see Section 7.1.3 above), it is considered that retention of existing roosts will not be feasible without adversely impacting on the breeding/resting places of bats and local bat populations.

Therefore, a Derogation Licence, issued under Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations 2011, is required to be granted prior to any demolition works at the study area. This licence must be obtained from the DHLGH through NPWS in advance of any works taking place which would or potentially could disturb bats or their roosts. This licence is required irrespective of any requirement for planning consent, or otherwise.

The specified reason for the Derogation Licence application, as listed in Regulation 54 of the 2011 Regulations, is:

> c. *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*.

Annex IV species must be maintained at Favourable Conservation Status or restored to favourable status if this is not the case. CIEEM (2018) states that the 'conservation status' for a species '*is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area*'. In relation to the potential granting of a derogation licence, consideration is given as to whether granting of a licence would be detrimental to the maintenance of the populations of the species in question at a favourable conservation status in their natural range (Regulation 54(2)). If a derogation licence is likely to have a significant negative effect on the population concerned (or the prospects of this population) or is likely to have a significant negative effect at the biogeographical level within Ireland, then a derogation licence cannot be considered. Information on the abundance, distribution and conservation status of individual bat species recorded at the site are provided in the species profiles in Appendix 5.

Demolition phase mitigation measures, designed to remove or reduce predicted impacts on bats, are detailed in the following section (Section 11.2), and are included within this report as part of the Derogation Licence application to NPWS. With the full and proper implementation of these measures, it is considered that the actions permitted by the Derogation Licence being applied for will not be detrimental to the maintenance of the populations of any bat species at their respective favourable conservation status in their natural ranges, as required under Section 54(2) of the 2011 Regulations.

The Derogation Licence will be applied for in conjunction with the submission of the planning application for the proposed demolition works. This report, which aims to provide sufficient information to the Wildlife Licencing Unit of NPWS on which to base a licencing decision, will accompany the Derogation Licence application in relation to bats at the site. Activities requiring a Derogation Licence may only proceed once the licence has been granted and will be subject to any conditions attached.

11.2 Demolition Measures

Demolition works mitigation for bats are to be implemented in accordance with the following best-practice guidance:

- 'Bat Mitigation Guidelines for Ireland Version 2'. Irish Wildlife Manuals, No 134 (Marnell *et al*., 2022)
- 'Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes' (NRA, 2005)

- 'Guidelines for the Treatment of Bats During the Construction of National Road Schemes' (NRA, 2005b)

This proposal has also had regard to the following guidance publications:

- 'Bats and Heritage Structures' (BCIreland, 2022)
- 'Bat Workers Manual' (JNCC, 2004)

The demolition works mitigation measures for bats are outlined as follows:

11.2.1 Provision of Alternative Roost-sites

The proposal will result in the loss of a number of identified bat roosts. Marnell *et el*., (2022) outlines guidelines in relation to proportionate mitigation depending on impacts and roost status.

In relation to the brown long-eared bat day/night/feeding roost identified within building No. 2 'Small numbers of rarer species. Not a maternity site' (of 'Moderate' conservation significance, see Section 8 above), Marnell *et al*., (2022) recommends the following: *'provision of new roost facilities where possible. Need not be exactly like-for-like, but should be suitable, based on species' requirements. Minimal timing constraints or monitoring requirements'*.

Therefore, bearing the above in mind, alternative roosts are proposed (bat boxes) for brown long-eared bat in line with recommendations in Marnell *et el*., (2022).

In relation to common pipistrelle, soprano pipistrelle day/night/feeding roosts identified and Leisler's bat day/night roosts identified 'Small numbers of common species. Not a maternity site' (considered of 'Low' conservation significance, see Section 8 above), Marnell *et al*., (2022) recommends the following: '*Flexibility over provision of batboxes, access to new buildings*'.

Therefore, bearing the above in mind, bat boxes are proposed for common pipistrelle, soprano pipistrelle and Leisler's bat in line with recommendations in Marnell *et el*., (2022).

It is recommended a total of eight bat boxes (one bat box per roost lost) be erected on suitable mature trees within the overall site. These are to be installed in advance of any works commencing and under the supervision of a suitably-qualified ecologist.

It is proposed to use a mix of bat-box designs to attract a variety of bat species. Schwegler Woodcrete bat boxes are suitable for species such as common pipistrelle, soprano pipistrelle, Leisler's bats and brown long-eared bats, and are self-cleaning. The final number, type and location of bat boxes will be determined by the appointed ecologist. Bat boxes should be located as high as possible (at least 4m off the ground) in sunny but sheltered positions. Mature trees, free from ivy and with no branches located within a 1m radius around the box location, should be selected. Boxes can be positioned at different broadly-south-facing aspects to provide a range of temperature conditions, as discussed above.

11.2.2 Pre-construction Surveys

Pre-construction surveys, including presence/absence surveys, as required, of all structures considered to have any potential to accommodate roosting bats, are to be carried out at the site in advance of demolition works commencing.

Prior to any structures being demolished, physical inspections and emergence surveys, as required, will be undertaken. These are to be carried out immediately prior to demolition works.

The purpose of these surveys is to:

- determine the current locations and characteristics of roosts in the period prior to commencement on-site to establish if the baseline conditions reported herein remain valid, given the length of time which may potentially elapse between completion of baseline surveys and reporting and commencement of demolition activity and the degree to which bat species can typically vary in their usage of roost habitat features,
- and ensure that the mitigation measures remain adequate to avoid or reduce predicted impacts on bats.

This will ensure that any changes in site context in relation to suitability for bats will be highlighted and that any additional mitigation measures which are then required are applied. In the event that previously unknown bat roosts are identified within the site, best-practice mitigation will be recommended by the appointed ecologist in consultation with KCC and NPWS.

11.2.3 Approach to Demolition Works and Appointment of a Bat Ecologist

It is recommended that demolition works are undertaken in spring or autumn when bats are less likely to be present.

A suitably experienced and licenced ecologist is to be appointed for the duration of the works.

Specific measures in relation to demolition, including removal of blockwork, suspended ceilings or sub-floor materials, roof works etc. will need to be drawn up by the appointed contractor in consultation with the appointed licenced ecologist.

The appointed ecologist is to supervise all demolition works, in particular at confirmed or suspected roost locations, and be on hand in the event that bats are discovered. It is important that bat presence throughout the building is regularly monitored during works to ensure that bats have not re-gained access to any part of the building's interior. Regular inspections of all areas should be undertaken and any signs of bat activity searched for.

Prior to any works commencing, a detailed work plan involving both the appointed contractor and the appointed ecologist will be required to be drawn up. This will be done in consultation with NPWS and in-line with any Derogation Licence conditions. The work plan will set out the approach to be taken and specific measures with regard to site preparation works, clearance and demolition works, and will be tailored, as required, with regard to specific works/activities required. The work plan will also be informed by the results of the pre-construction surveys to ensure that the approach to works will be undertaken in such a way as to minimise impacts on bats.

Prior to any works commencing, toolbox talks will be given by the appointed ecologist to contractor staff to explain the general approach to works and outline any specific areas of sensitivity/measures required. Toolbox talks should be given to new contractor staff arriving to site, as required (on an 'as needed' basis). As part of toolbox talks, staff will be informed by the ecologist of the procedure to follow in the event that a bat is discovered, and the ecologist is not present.

Using the above approaches, the likelihood of bats being present within buildings throughout the works will be reduced. If bats, or signs of bats are found, during works, works are to cease in the area until the licenced ecologist has advised how to proceed and/or undertaken removal of bats, in which case they will be carefully relocated to the alternative roost-sites (bat boxes).

11.2.4 Temporary Lighting

Appropriate lighting will be employed during the works to minimise impacts on local bat populations. Use of lighting will be minimised and avoided, where possible. Lighting will be targeted to minimise/avoid light spill to enable the retention of dark-corridor connectivity within the landscape for commuting bats.

Lighting is to conform to the following guidelines which are to be strictly implemented throughout the works:

- Bat Conservation Trust (2023). Guidance Note GN08/23. Bats and Artificial Lighting at Night. Bat Conservation Trust and Institution of Lighting Professionals.
- Bats & Lighting. Guidance Notes for: Planners, engineers, architects and developers (BCI, 2010).

Luminaire design is extremely important to achieve an appropriate lighting regime. Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The BCT Lighting Guidelines (BCT, 2023) are to be followed with regard to the selection and use of luminaires.

All temporary lighting used throughout the site, other than any lighting required for Health and Safety (H&S), will be switched off after working hours as a means of reducing light pollution/ensuring that there is no unnecessary residual lighting during hours of darkness. Any external security lighting will be set on motion-sensors and short (1 min) timers. The H&S lighting will be cowled towards the centre of compound areas. Light spillage onto retained perimeter hedgerows/treelines is to be avoided. This condition will be reviewed and audited for implementation throughout the works period by the appointed Ecologist.

12. Residual

Residual impacts are impacts that remain, once mitigation has been implemented or, impacts that cannot be mitigated. Provided that the mitigation measures outlined in Section 11, above, are implemented in full, it is not expected that significant adverse effects to any species/genus of bat identified at the site from potential impacts associated with the proposed demolition works will arise. Residual effects are outlined in Table 40 below.

Table 40. Characterisation of residual effects on bat species (post-mitigation effects)

Bat species	Pre-mitigation Effect	Mitigation	Residual Effects
Leisler's bat	Loss/disturbance of lower conservation significance roosts (day/night roosts) assessed as permanent, slight, negative effects.	Provision of alternative roost-sites (Bat boxes). Pre-construction surveys. Bat-sensitive approach to demolition works. Bat-sensitive approach to temporary lighting.	Loss/disturbance of lower conservation significance roosts assessed as **permanent, imperceptible, negative residual effects.**
Common pipistrelle	Loss/disturbance of lower conservation significance roosts (day/night/feeding roosts) assessed as permanent, slight, negative effects.	Provision of alternative roost-sites (Bat boxes). Pre-construction surveys. Bat-sensitive approach to demolition works. Bat-sensitive approach to temporary lighting.	Loss/disturbance of lower conservation significance roosts assessed as **permanent, imperceptible, negative residual effects.**
Soprano pipistrelle	Loss/disturbance of moderate conservation significance roost (day/night/feeding) assessed as permanent, moderate, negative effects.	Provision of alternative roost-sites (Bat boxes). Pre-construction surveys. Bat-sensitive approach to demolition works. Bat-sensitive approach to temporary lighting.	Loss/disturbance of lower conservation significance roosts assessed as **permanent, imperceptible, negative residual effects.**
Brown long-eared bat	Loss/disturbance of moderate conservation significance roost (day/night/feeding) assessed as permanent, moderate, negative effects.	Provision of alternative roost-sites (Bat boxes). Pre-construction surveys. Bat-sensitive approach to demolition works. Bat-sensitive approach to temporary lighting.	Loss/disturbance of moderate conservation significance roost assessed as **permanent, slight, negative residual effects.**
All bats (Common pipistrelle, soprano pipistrelle,	Direct/indirect effects associated with demolition-related disturbance/displacement as a result of noise, lighting and human activity assessed as short-term, slight to moderate, negative effects.	Bat-sensitive approach to demolition works. Bat-sensitive approach to temporary lighting	Direct/indirect effects associated with demolition-related disturbance/displacement (noise, lighting, human activity) assessed as **short-term, imperceptible to slight, negative residual effects.**

Bat species	Pre-mitigation Effect	Mitigation	Residual Effects
brown long-eared bat, lesser horseshoe bat, Leisler's bat, *Myotis* spp., Nathusius' bat)	Effects associated with loss of foraging/commuting habitat assessed as permanent, imperceptible, negative effects.		Effects associated with loss of foraging/commuting habitat assessed as **permanent, imperfectible, negative residual effects.**

13. Conclusion

Residual effects on bats have not been assessed as significant provided best practice methodologies and mitigation measures, as outlined above in Section 11 above, are employed during the demolition works.

Provided that the proposed demolition is completed in accordance with the industry best practice measures and other mitigation described within this report are adhered to, significant effects on bat species are not anticipated at any geographical scale.

The application of appropriate mitigation and protection measures will ensure that no significant residual ecological effects, either alone or cumulatively with other plans or projects, will arise on bats from the project.

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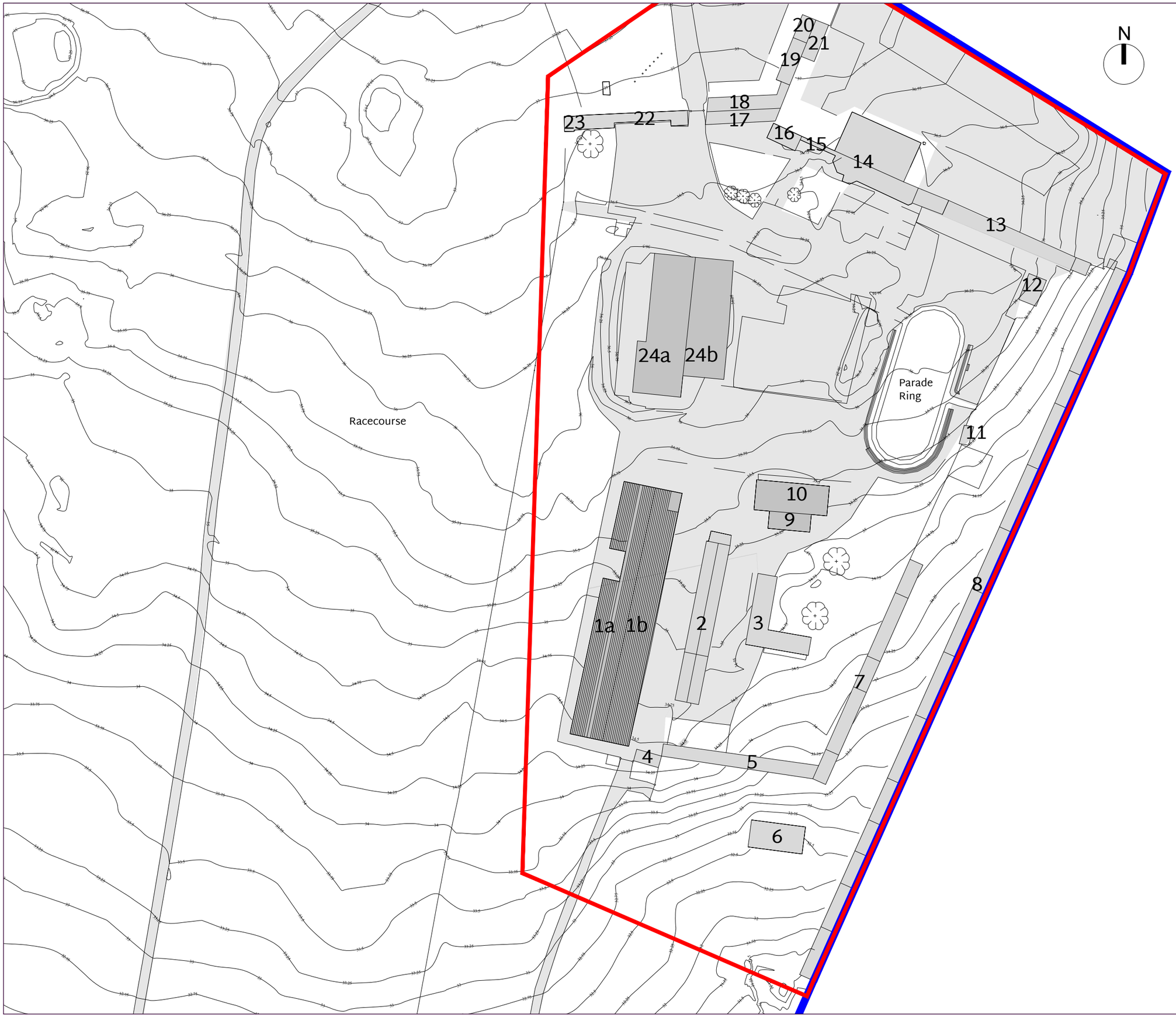
Appendix 1

Site Layout and Buildings



NOTES:
1. THIS DRAWING IS FOR INFORMATION AND DISCUSSION PURPOSES ONLY.
2. NOT FOR CONSTRUCTION. FURTHER DRAWINGS, SPECIFICATIONS AND DOCUMENTATION REQUIRED TO ENSURE COMPLIANCE WITH ALL RELEVANT BUILDING STANDARDS.
3. DO NOT SCALE USE FIGURED DIMENSIONS ONLY

LEGEND

1a	Large Stand
1b:	Reception Areas beneath Large Stand
2:	Tote Kiosks
3:	Ancillary building no.1
4:	Working Entrance Building
5:	Stables no.1
6:	Stables no.2
7:	Stables no.3
8:	Stables no.4
9:	Ancillary building no.2
10:	Ancillary building no.3
11:	Stewards tower
12:	Ancillary building no.4
13:	Stables no.5
14:	Jockeys Facilities
15:	Stables no.6
16:	Male WC Block
17:	Stables no.7
18:	Stables no.8
19:	Stables no.9
20:	Stables no.10
21:	Stables no.11
22:	Turnstile Blocks
23:	Officials tower
24a:	Spectator Stand
24b:	Reception Areas beneath Stand

APPLICATION SITE BOUNDARY

LAND IN OWNERSHIP

Revision Description:	Date:	Drn:	Ckd:	Rev:

TADHG CASEY architects

The Phoenix,
11 The Mall, Tralee,
Co. Kerry V92 AP99
www.tcarchitects.ie
info@tcarchitects.ie

Project:	BALLYBEGGAN RACECOURSE
Client:	ARD-RÍ GROUP
Drawing:	SITE LAYOUT PLAN: EXISTING BUILDINGS
A3 Scale:	1:1000

Project No:	Status:	Dwg. No:	Rev:
2433	INFO	101	

Appendix 2

Core Team Statement of Competency

Surveyor	Competency
Deirdre O'Brien (BSc. Hons, Wildlife Biology)	Deirdre has been working with Malachy Walsh and Partners since 2018. During that time, she has carried out field work which included invasive species survey's, bird surveys, freshwater macroinvertebrate sampling and identification, (sensu Q' value assessment), collection of water samples and assistance with freshwater pearl mussel survey. She has also gained experience in standard field survey methodologies including mammal surveying and habitat mapping. She has been formally trained in Stage 1 and Stage 2 freshwater pearl mussel Surveying (Dr. Evelyn Moorkens). She has acquired experience in the completion of Appropriate Assessment (AA), Natura Impact Statement (NIS) and Ecological Impact Assessment (EcIA). She has experience with general ecological report writing and has helped complete numerous reports for bird survey work and is experienced in the collation of data and in field ecology survey techniques.
Maureen Kelliher (BSc. Hons, Wildlife Biology)	Maureen has over 5 years field work experience and over 2 years in ecological consultancy. She has authored and co-authored a number of dedicated protected species reports for terrestrial and aquatic species. She was involved in data collection for the Environmental Protection Agency (EPA) biological monitoring of rivers in 2022 and 2024 as part of a Water Framework Directive (WFD) water quality monitoring programme. This included the identification of aquatic macroinvertebrates, phytobenthos sampling and preservation, and River Hydromorphology Assessment Technique (RHAT) surveys and was responsible for drafting the EPA River Assessment Value Report for Hydrometric Area 25 and 06. Maureen is an accredited Stage I and Stage II surveyor for freshwater pearl mussel Margaritifera margaritifera and white-clawed crayfish Austropotamobius pallipes and has relevant survey experience throughout Munster and Leinster, including electrofishing for salmonids Salmo spp. and lamprey Lampetra spp.
Petr Dobes	Petr, a graduate of Kerry College's Ecology program, has been a valuable member of MWP's Ecological team since May 2023. As a qualifying member of the Chartered Institute of Ecology and Environmental Management (CIEEM), he exhibits a deep commitment to environmental stewardship. Passionate about nature, Petr actively participates in Citizen Science projects, contributing to the monitoring of local wildlife and flora. He is a dedicated birdwatcher, conducting annual bird population surveys for both BirdWatch Ireland and the Irish Raptor Study Group. Petr has been formally trained in aquatic macroinvertebrate identification through the Freshwater Biological Association, Biological Water Quality Assessment using the Q-value method (Pascal Sweeney), and surveying techniques for white-clawed crayfish as well as Stage 1 and 2 freshwater pearl mussel surveys (also under Pascal Sweeney). He holds a derogation bat licence (DER-BAT-2025-223) issued by the National Parks and Wildlife Service (NPWS) and has completed formal bat survey training with leading bat specialist Conor Kelleher.
Salona Reddy (BSc. MSc.)	Salona is an experienced Ecologist with a Master's degree in Environmental Science and over nine years of consultancy experience. She joined MWP full-time in January 2024 and has since contributed to a wide range of projects across sectors including mining, infrastructure, housing, and transport. Salona has extensive experience in the preparation of ecological deliverables, including Ecological Impact Assessments (EcIA), Screening for Appropriate Assessment (Stage 1), and Natura Impact Statements (Stage 2). She has served as an Ecological Clerk of Works (ECoW) on numerous projects, providing on-site ecological support and compliance monitoring for developments such as mining and milling operations, housing schemes, roadworks, and rail infrastructure. Her fieldwork expertise includes habitat mapping, zoological surveys, and the application of diverse ecological survey methodologies. She has worked on research and consultancy teams both in Ireland

Surveyor	Competency
	and internationally, contributing to high-quality ecological reporting and environmental assessments throughout her career.
Úna Williams (BSc., MSc.)	Úna Williams is a Senior Ecologist and Environmental Scientist, who has worked at MWP for six years. Having worked on research teams both in Ireland and abroad, she is an experienced field ecologist familiar with various ecological survey methodologies including habitat/survey mapping and zoological surveys. She has undertaken assessments for a wide variety of projects including renewable energy developments, and infrastructural and coastal developments. Úna has designed and carried out several Avian Collision Risk Models for proposed wind farms and has authored many ecological reports including Screening for AA reports, Natura Impact Statements (NIS), Ecological Impact Assessments (EcIA), and Environmental Impact Assessments (EIA). She graduated from Queen's University Belfast in 2018 with an MSc in Animal Behaviour and Welfare, and from Trinity College Dublin in 2008 with an Environmental Science degree.

Appendix 3

Emergence Survey Summary Details

Building No.	Watch No.	Date	Time (Start/Finish)	Sunset time	Moon phase	Weather at Start of Survey	Weather at End of Survey
1b	1	09/06/2025	**Start:** 21:38 **Finish:** 23:38	21:58	Waxing gibbous	**Temp:** 14°C **Humidity:** 95% **Wind:** SW 20kmph **Cloud cover**: 8/8 **Rain**: Drizzle and some heavy	**Temp**: 12°C **Humidity**: 100% **Notes**: Dry to start. Drizzle began at 22:30 getting heavier throughout
1b	2	03/07/2025	**Start:** 21:42 **Finish:** 23:42	22:02	Waxing Gibbous	**Temp**:15°C **Humidity**: low **Wind**: 13kmph **Cloud cover**: 6/8 **Rain**: None	**Temp**: 13°C **Humidity**: Low **Notes**: Cool, dry and breezy at times
2	1	11/06/2025	**Start:** 21:39 **Finish:** 23:39	21:59	Waxing gibbous	**Temp:** 14°C **Humidity:** 90% **Wind:** SE 10 kmph **Cloud cover**: 8/8 **Rain**: None	**Temp**: 13°C **Humidity**: 90% **Notes**: Dry and cool
2	2	07/07/2025	**Start:** 21:40 **Finish:**	22:00	Waxing gibbous	**Temp**: 14°C **Humidity**: 85% **Wind**: 16kmph **Cloud cover**: 7/8	**Temp**: 14°C **Humidity**: 85% **Notes**: Calm, dry for most of the survey, drizzle from 23:00

Building No.	Watch No.	Date	Time (Start/Finish)	Sunset time	Moon phase	Weather at Start of Survey	Weather at End of Survey
			23:40			**Rain**: Some drizzle	
3	1	12/06/2025	**Start:** 21:40 **Finish:** 23:40	22:00	Waxing gibbous	**Temp:** 17°C **Humidity:** 85% **Wind:** NW 10kmph **Cloud cover**: 8/8 **Rain**: Some showers	**Temp**: 15°C **Humidity**: 85% **Notes**: Mostly dry with some showers
3	2	15/07/2025	**Start:** 21:33 **Finish:** 23:33	21:53	Waning Gibbous	**Temp**: 15°C **Humidity**: 86% **Wind**: SW 16kmph **Cloud cover**: 8/8 **Rain**: Light drizzle from 23:10	**Temp**: 14°C **Humidity**: 90% **Notes**: Mostly dry, light drizzle on and off from 23:10
10	1	02/07/2025	**Start:** 21:42 **Finish:** 23:42	22:02	First quarter	**Temp:** 13°C **Humidity:** 73% **Wind:** 10kmph **Cloud cover**: 2/8 **Rain**: None	**Temp**: 13°C **Humidity**: 73% **Notes**: Cool and dry
11	1	30/06/2025	**Start:** 21:43 **Finish:** 23:43	22:03	Waxing crescent	**Temp**: 17°C **Humidity**: 85% **Wind**: 17kmph **Cloud cover**: 8/8 **Rain**: None	**Temp**: 17°C **Humidity**: 85% **Notes**: Warm, dry and slight wind.

Building No.	Watch No.	Date	Time (Start/Finish)	Sunset time	Moon phase	Weather at Start of Survey	Weather at End of Survey
12	1	17/06/2025	**Start:** 21:43 **Finish:** 23:43	22:03	Waning Gibbous	**Temp**: 16°C **Humidity**: 57% **Wind**: SW 6 kmph **Cloud cover**:8/8 **Rain**: Dry with some drizzle	**Temp**: 10°C **Humidity**: 72% **Notes**: Dry at start and some drizzle towards the end of the survey.
12	2	15/07/2025	**Start:** 21:33 **Finish:** 23:33	21:53	Waning Gibbous	**Temp**: 15°C **Humidity**: 86% **Wind**: SW 16kmph **Cloud cover**: 8/8 **Rain**: Light drizzle from 23:10	**Temp**: 14°C **Humidity**: 90% **Notes**: Mostly dry, light drizzle on and off from 23:10
14	1	04/06/2025	**Start:** 21:33 **Finish:** 23:33	21:53	Waxing gibbous	**Temp**: 12°C **Humidity**: 88% **Wind**: SE 13kmph **Cloud cover**: 8/8 **Rain**: Drizzle	**Temp**: 12°C **Humidity**: 88% **Notes**: Overcast and drizzle from 22:00 – 22:30
14	2	01/07/2025	**Start:** 21:43 **Finish:** 23:43	22:03	Waxing crescent	**Temp:** 13°C **Humidity:** 74% **Wind:** 10kmph **Cloud cover**: 4/8 **Rain**: None	**Temp**: 11°C **Humidity**: 79% **Notes**: Calm and mild

Building No.	Watch No.	Date	Time (Start/Finish)	Sunset time	Moon phase	Weather at Start of Survey	Weather at End of Survey
16	1	17/06/2025	**Start:** 21:43 **Finish:** 23:43	22:03	Waning Gibbous	**Temp**: 16°C **Humidity**: 57% **Wind**: SW 6 kmph **Cloud cover**:8/8 **Rain**: Dry with some drizzle.	**Temp**: 10°C **Humidity**: 72% **Notes**: Dry at start and some drizzle towards the end of the survey.
16	2	09/07/2025	**Start:** 21:38 **Finish:** 23:38	21:58	Waxing gibbous	**Temp:** 16°C **Humidity:** 83% **Wind:** W 5kmph **Cloud cover**: 0/8 **Rain**: None	**Temp**: 14°C **Humidity**: 91% **Notes**: Calm, sun shining and moon large and orange
17	1	09/06/2025	**Start:** 21:38 **Finish:** 23:38	21:58	Waxing gibbous	**Temp:** 14°C **Humidity:** 95% **Wind:** SW 20kmph **Cloud cover**: 8/8 **Rain**: Drizzle and some heavy	**Temp**: 12°C **Humidity**: 100% **Notes**: Dry to start. Drizzle began at 22:30 getting heavier throughout
18	1	12/06/2025	**Start:** 21:40 **Finish:** 23:40	22:00	Waning gibbous	**Temp:** 17°C **Humidity:** 85% **Wind:** No wind **Cloud cover**: 7/8 **Rain**: None	**Temp**: 15°C **Humidity**: 88% **Notes**: Very warm, humid and calm.
20	1	04/06/2025	**Start:**	21:53	Waxing gibbous	**Temp**: 12°C **Humidity**: 88%	**Temp**: 12°C **Humidity**: 88%

Building No.	Watch No.	Date	Time (Start/Finish)	Sunset time	Moon phase	Weather at Start of Survey	Weather at End of Survey
			21:33 **Finish:** 23:33			**Wind**: SE 13kph **Cloud cover**: 8/8 **Rain**: Drizzle	**Notes**: Overcast and drizzle from 22:00 – 22:30
22 & 23	1	30/06/2025	**Start:** 21:43 **Finish:** 23:43	22:03	Waxing crescent	**Temp**: 17°C **Humidity**: 85% **Wind**: 17kmph **Cloud cover**: 8/8 **Rain**: None	**Temp**: 17°C **Humidity**: 85% **Notes**: Warm, dry and slight wind.
24b (ground floor)	1	05/06/2025	**Start:** 21:30 **Finish**: 22:40	21:54	New moon	**Temp:** 11°C **Humidity:** 87% **Wind:** NW 10 kmph **Cloud cover**: 8/8 **Rain**: Light turning heavy	**Temp**: 10°C **Humidity**: 100% **Notes**: Overcast with some drizzle, turning heavy and gusty. Survey abandoned at 22:40 due to weather
24b (ground floor)	2	26/06/2025	**Start:** 21:44 **Finish:** 23:32	22:04	Waxing Crescent	**Temp**: 17°C **Humidity**: 85% **Wind**: S 19kmph **Cloud cover**: 8/8 **Rain**: Drizzle to heavy	**Temp**: 14°C **Humidity**: 100% **Notes**: Some light drizzle at start and became much heavier. Abandoned survey at 23:32 due to weather
24b (1st floor)	1	05/06/2025	**Start:** 21: 38	21:54	New moon	**Temp:** 11°C **Humidity:** 87%	**Temp**: 10°C **Humidity**: 100%

Building No.	Watch No.	Date	Time (Start/Finish)	Sunset time	Moon phase	Weather at Start of Survey	Weather at End of Survey
			Finish: 23:38			**Wind:** NW 10 kmph **Cloud cover**: 8/8 **Rain**: Light turning heavy	**Notes**: Overcast with some drizzle, turning heavy and gusty. Survey abandoned at 22:40 due to weather
24b (1st floor)	2	08/07/2025	**Start:** 21:39 **Finish:** 23:39	21:59	Waxing gibbous	**Temp**: 14°C **Humidity**: 86% **Wind**: NW 13kmph **Cloud cover**: 8/8 **Rain**: Very light drizzle	**Temp**: 12°C **Humidity**: 85% **Notes**: Cool, dry to start with some light drizzle here and there. Gusty towards the end

Appendix 4

Detailed Logs of Emergence Surveys

Building No.	Watch No.	Date	Time	Emergence /re-entry	Species	Building (locations of activity)
1b	1	09/06/2025	22.24 22:34 22:35 22:46 22:49 22:57	Entry Exit Exit Exit Exit & re-entry Entry	Common pip Common pip Common pip Common pip Common pip Soprano pip	Bats seen exiting/entering NE side of building through the gaps in wood panels.
1b	2	03/07/2025	22:22 22:23 22:24 23:23	Exit Exit Exit Exit	Common pip Common pip Common pip Common pip	Bats exiting east side of building. Likely through the gaps in wood panels.
2	1	11/06/2025	22:14	Exit	Common pip	Bat exited hole in the roof towards the south end of the building.
2	2	07/07/2025	22:30 23:20 23:24 22:45 22:57 23:00 23:19 23:23	Exit Exit Exit Entry Entry Entry Entry Entry	Common pip Common pip Common pip Common pip Common pip Brown long-eared No data No data	The top three observations were from the west side of the building and showed 3 bats exiting a gap in the roof. The remaining ten observations were from the east side of the building and showed bats entering and exiting the same broken window. Although species were recorded, for some of the times listed, there did not appear to be any calls recorded even though it is clear on the video footage that bats did enter or exit.

Building No.	Watch No.	Date	Time	Emergence /re-entry	Species	Building (locations of activity)
			23:26 23:26 23:29 23:30 23:32	Exit Entry Entry Entry Exit	No data Common pip No data Brown long-eared Brown long-eared	
3	1	12/06/2025	22:08 22:59 23:09 23:18 23:34 23:34	Exit Entry & exit Exit Entry & exit Entry Exit	No data yet Soprano pip Soprano pip Soprano pip No data yet No data yet	20:08 - bat seen flying around inside the toilet block before exiting. 23:34 – Bat seen flying around inside the toilet block . Soon after another bat flew in the door. A few seconds later, one of the bats exit the toilet block. Static unit did not pick up these three passes.
3	2	15/07/2025	22:24	Exit	Soprano pip	One bat emerged from the lady's bathroom at the north end of building.
10	1	02/07/2025	22.29 22.33 22.34 22.37 22.38 22.38 22.40 22.42	Exit & entry Exit & entry Exit & entry Exit & entry Exit Exit & entry Exit Exit & entry	Common pip Common pip Common pip Common pip Common pip Common pip Common pip Common pip	Lots of bat activity with bats flying in and out of the doorway before flying off and then later returning.

Building No.	Watch No.	Date	Time	Emergence /re-entry	Species	Building (locations of activity)
			22.43	Exit & entry	Common pip	
			22.44	Exit	Common pip	
			22.45	Exit	Common pip	
			22.50	Entry	Common pip	
			22.50	Exit	Common pip	
			22.51	Entry	Common pip	
			22.52	Exit	Common pip	
			22.55	Exit	Common pip	
			22.55	Exit & entry	Common pip	
			22.56	Exit	Common pip	
			23:14	Entry	Common pip	
			23:20	Exit	Common pip	
			23:26	Entry	Common pip	
			23:31	Entry	Common pip	
			23:33	Entry	Common pip	
			23:33	Exit	Common pip	
			23:34	Exit	Common pip	
			23:37	Exit	Soprano pip	
			23:39	Entry	Common pip	
			23:41	Exit	Common pip	
11	1	30/06/2025	**No bats Emerging / entering**			

Building No.	Watch No.	Date	Time	Emergence /re-entry	Species	Building (locations of activity)
12	1	17/06/2025	No bats Emerging / entering			
	2	15/07/2025	No bats Emerging / entering			
14	1	04/06/2025	22:28	Entry	Common pip	Entry into the ivy in the middle north of building.
14	2	01/07/2025	22:42 23:02 23:05 23:07 23:09	Exit from ivy Entry Exit from ivy Entered ivy Emerged from ivy	Common pip Common pip Common pip Common pip Soprano pip	Bat seen landing on ivy and climbed up to the roof fascia 23:07 back/northside of building. Did not see again. All other activity seen at ivy on the NE and E side of building.
16	1	17/06/2025	No bats Emerging / entering			
16	2	09/07/2025	22:33 22:34 22:45 23:03	Entry Entry Entry Entry	Common pip Common pip Soprano pip Leisler's bat	Bats seen flying into the men's toilet through an open window (southern side of building). No bats seen leaving.
17	1	09/06/2025	22:06 22:06 22:25 22:28 22:44 22:45	Exit Entry Exit Entry Entry Exit	Leisler's bat Leisler's bat Common pip Common pip Common pip Common pip	Most activity occurred through a broken window on one of the vet stall doors.

Building No.	Watch No.	Date	Time	Emergence /re-entry	Species	Building (locations of activity)
			22:45 22:49 23:01 23:17	Entry Exit Entry Exit	Common pip Common pip Common pip Common pip	
18	1	12/06/2025	No bats Emerging / entering			
20	1	04/06/2025	No bats Emerging / entering			
22 & 23	1	30/06/2025	22:50 22:50	Entry Exit	Common pip	Ticket stall doors are all open and some roofs open or partially collapsed. Bat flew in one open door and out through another open door and then flew off. Most likely not using it as a roost.
24b ground floor	1	05/06/2025	22:01 22:02 22:03 22:06 22:07 22:18 22:29	Entry and exit Exit Entry and exit Entry and exit Entry Entry Exit Entry	Common pip Common pip Common pip Common pip Common pip Common pip Soprano pip No data	Bats entered and exited the ticket booth on a few occasions. Also entered upwards into 'roof' of the ground floor (under the 1st floor). Bats emerging from door under the stairs.
24b ground floor	2	26/06/2025	22:01 22:18 22:22 22:25	Exit Exit Exit Exit	Common pip Soprano pip Common pip Common pip	Appeared to emerge from the gaps between the block from 'roof' under the 1st floor. The entry was in through the top of the boarded-up ticket box. Bat not seen emerging again.

Building No.	Watch No.	Date	Time	Emergence /re-entry	Species	Building (locations of activity)
			23:04	Entry	Soprano pip	
24b 1st floor	1	05/06/2025	**No bats Emerging / entering**			
24b 1st floor	2	08/07/2025	22:36 22:38 22:39 22:41 23:15 23:21 23:21 23:31	Exit Exit Exit Exit Exit Exit Exit Exit	Common pip Common pip Common pip Common pip Common pip Common pip Common pip Common pip	No bats seen emerging from the 1st floor but bats seen exiting from doorway under the stairs on ground floor. One bat Appeared to emerge from the gaps between the blocks from 'roof' under the 1st floor.

Appendix 5

Irish Bat Species Profiles

Common pipistrelle (*Pipistrellus pipistrellus*) – Peak call frequency 45kHz

The common pipistrelle is one of Irelands smallest and most common bat. Like all bat species found in Ireland they are nocturnal, feeding on midges, moths and other flying insects that they find in the dark by using echolocation and can be found in both rural and urban areas. A single pipistrelle (weighing approximately 5-6 grams, the weight of a 1-euro coin) can consume as many as 3,000 of these insects in one night (BCI, 2024)[13], providing an ecosystem service as nature's pest control. Common pipistrelles emerge around 20 minutes after sunset and are fast flying species and tend to zig-zag whilst flying which helps them to catch their insect prey (UOB, 2024)[14] and usually fly approximately 5 to 10 meters from the ground (Russ, 1999)[15].

The common pipistrelle's distribution is widespread and is found throughout the island of Ireland (NBDC, 2024)[16]. The common pipistrelle frequents a large range of different habitats for foraging and roosting such as urban areas (often feeding around streetlights that their insect prey can be attracted to), woodlands, farmland, gardens, lakes, rivers, hedgerows and tree lines, using the latter linear features to commute across the landscape. Common pipistrelles are known to be crevice dwellers and can fit through openings between 15mm and 20mm and are known to use new and old buildings in gaps and crevices between roof tile, brick work, behind panelling, shutters and eaves as well as roosting in bat boxes and trees throughout spring and summer (UOB, 2024). Maternity roosts tend to be found in close proximity to good foraging and commuting habitat such as improved grassland, built-up areas and close to water and hedgerows/tree lines. During the winter months whilst in hibernation, common pipistrelles can be found to be roosting in trees and buildings, but rarely underground.

Current NPWS Article 17 distribution mapping for common pipistrelle has determined that the species known range and distribution encompasses the relevant hectad, V46 (NPWS, 2019). The common pipistrelle's conservation status in Ireland is currently found to be favourable and improving (NPWS, 2019)[17] with an Irish Red List status of 'Least concern' (Marnell, *et al.*, 2019). The population size in Ireland is estimated at 1.2 – 2.8 million (2007-2012) with an estimated core area of 56,485 km^2 (Roche, *et al.*, 2014).

Soprano pipistrelle (*Pipistrellus pygmaeus*) - Peak call frequency 55kHz

The soprano pipistrelle is also one of Ireland's most common and smallest bat species and shares many traits with the common pipistrelle. The soprano pipistrelle's distribution is also widespread and is found throughout the island of Ireland (NBDC, 2024). The soprano pipistrelle is slightly smaller than the common pipistrelle, and its fur is reddish and is one colour from the roots to the tip and its skin is pale pink as opposed to the common pipistrelle's black skin, found on the ears and face (NBDC, 2024)[18]. A post-calcarial lobe is present on the tail

[13] Bat Conservation Ireland (BCI), 2024, *Common and Soprano Pipistrelle*, available from https://www.batconservationireland.org/irish-bats/species/common-and-soprano-pipistrelle accessed March 2024.

[14] University of Bristol (UOB), 2024, *Common Pipistrelle Pipistrellus pipistrellus biology,* available from https://www.bio.bris.ac.uk/research/bats/britishbats/batpages/commonpipi.htm accessed March 2024

[15] Jon Russ, 1999, *The bats of Britain and Ireland echolocation calls, sound analysis and species identification*

[16] National Biodiversity Data Centre (NBDC), 2024, *Common Pipistrelle Pipistrellus pipistrellus profile*, available from https://species.biodiversityireland.ie/profile.php?taxonId=119762#Taxonomy accessed March 2024.

[17] National Parks and Wildlife Service (NWPS), 2019, *The Status of EU Protected Habitats and Species in Ireland. Volume 1: Summary Overview. Unpublished NPWS report.*

[18] National Biodiversity Data Centre (NBDC), 2024, *Soprano Pipistrelle Pipistrellus pygmaeus profile*, available from https://species.biodiversityireland.ie/profile.php?taxonId=119441&taxonGroupName=terrestrial%20mammal&taxonDesignationId=2#Taxonomy accessed March 2024

membrane but a ridge between the nostrils distinguishes the soprano from the common pipistrelle, as well as a difference in the pattern of the elastic fibres within the wing membranes (BCI, 2024)[19].

Soprano pipistrelles also emerge around 20 minutes after sunset and are also a fast-flying species. There is also overlap between the soprano and common pipistrelle is that they can be found in similar habitats with soprano pipistrelle's preferring lakes, rivers and riparian habitats (Vaughan *et al.*, 1997)[20]. Soprano pipistrelles have overlap with the common pipistrelle in regard to roosting preferences. Soprano pipistrelles are also known to be crevice dwellers and will roost in new and old buildings in gaps and crevices between roof tile, brick work, behind panelling, shutters and eaves as well as roosting in bat boxes and trees throughout spring and summer (UOB, 2024)[21]. Winter roosting preferences are also the same as common pipistrelle, roosting in trees and buildings and rarely underground.

Current NPWS Article 17 distribution mapping for soprano pipistrelle has determined that the species known range and distribution does not encompass the relevant hectad, V46 (NPWS, 2019). The soprano pipistrelle's conservation status in Ireland is currently found to be favourable and improving (NPWS 2019) with an Irish Red List status of 'Least concern' (Marnell, *et al.*, 2019). The population size in Ireland is estimated at 0.54 – 1.2 million (2007-2012) with an estimated core area of 62,020 km^2 (Roche, *et al.*, 2014).

Nathusius' pipistrelle (*Pipistrellus nathusii*) - Peak call frequency 38kHz (36-40khz)

The Nathusius' pipistrelle is much rarer in Ireland than the common and soprano pipistrelles, its distribution is scarce and scattered across the island of Ireland but is potentially more widespread than the data would suggest, as this species could easily be confused with the other two resident species of pipistrelle (NBDC, 2024)[22]. Since its discovery in Ireland (circa 1996-1997), roosts of this species have been recorded in Armagh, Derry, Down and Fermanagh and species records have been recorded in Cavan, Cork, Dublin, Kerry, Laois, Longford, Mayo, Meath, Waterford and Wicklow (NBDC, 2024).

Nathusius' pipistrelles emerge at early dusk, are fast flying species, and fly with deep wing beats (UOB, 2024)[23] and usually fly approximately 4 to 15 meters from the ground (Russ, 1999). Nathusius' pipistrelles are mainly associated with woodland habitats from moist deciduous woodlands to dry coniferous forests (CI, 2024)[24]. Nathusius' pipistrelles are also associated with wetlands, rivers and waterbodies (BCT, 2024)[25] but are known to forage within parks, farmland and woodland edges too (CI, 2024) and are found less often than the common and soprano pipistrelles in urban areas (UOB, 2024). They are known to roost in old buildings under soffit

[19] Bat Conservation Ireland (BCI), 2024, *Common and Soprano Pipistrelle*, available from https://www.batconservationireland.org/irish-bats/species/common-and-soprano-pipistrelle accessed March 2024.

[20] Vaughan, N., Jones, G., & Harris, S. (1997). Habitat Use by Bats (Chiroptera) Assessed by Means of a Broad-Band Acoustic Method. *Journal of Applied Ecology*, *34*(3), 716–730.

[21] University of Bristol (UOB), 2024, *Soprano Pipistrelle Pipistrellus pygmaeus biology* https://www.bio.bris.ac.uk/research/bats/britishbats/batpages/sopranopipi.htm

[22] National Biodiversity Data Centre (NBDC), 2024, *Nathusius Pipistrelle Pipistrellus nathusii profile*, available from https://species.biodiversityireland.ie/profile.php?taxonId=119466#Taxonomy

[23] University of Bristol (UOB), 2024, *Nathusius Pipistrelle Pipistrellus nathusii biology* available from https://www.bio.bris.ac.uk/research/bats/britishbats/batpages/nathusiuspipi.htm

[24] *Conserve Ireland (CI), 2024, Nathusius pipistrelle profile, available at https://www.conserveireland.com/mammals/nathusius_pipistrelle.php*

[25] Bat Conservation Trust (BCT), 2024, *UK Bats: Nathusius Pipestrelle* available at https://www.bats.org.uk/about-bats/what-are-bats/uk-bats/nathusius-pipistrelle accessed March 2024.

boards and roof tile, fissures in rocks and tree hollows and bat boxes (BCT, 2024). During the winter months Nathusius' pipistrelles will roost in cracks in walls, trees, caves and sheltered cliff crevices (NBDC, 2024).

Current NPWS Article 17 distribution mapping for Nathusius' pipistrelle has determined that the species known range and distribution does not encompass the relevant hectad, V46 (NPWS, 2019). The Nathusius' pipistrelle's conservation status in Ireland is currently unknown (NPWS 2019) with an Irish Red List status of 'Least concern' (Marnell, *et al*., 2019). The population size in Ireland is estimated at 10,000 to 18,000 (2007-2012) with an estimated core area of 13,543 km^2 (Roche, *et al*., 2014).

Brown long-eared bat (*Plecotus auritus*) - Peak call frequency 35kHz (25-50khz)

The brown long eared bat (BLE) is medium sized bat with distinctive long ears which can be up to three quarters of the size of its total head and body length (2.5cm) (CI, 2024)[26]. These large ears enable this species of bat to have extraordinary hearing abilities which help them to hunt especially when gleaning their prey from foliage (BCT, 2024)[27]. BLE are late emergers and prefer to leave their roosts in complete darkness and therefore emergence times can be up to an hour after sunset (Russ, 1999). As a void dwelling species of bat these bats can often be active and make short flights within a roosting area such as a loft before emergence, as agile flyers they are equipped to using confined spaces to fly in. Their flight is slow and fluttering often likened to that of a butterfly and fly low, usually close to vegetation (UOB, 2024)[28].

The BLE's distribution is widespread, and this species can be found throughout the island of Ireland (NBDC, 2024)[29]. BLE prefer sheltered habitats such as valleys, parks and gardens and are also known to forage in open deciduous and coniferous woodland and orchards (BCT, 2024). As mentioned, BLE bats are typically void dwelling and will roost in older buildings, in lofts, barns, stables and tend to cluster along the central ridge beam or next to a chimney. BLE will also make use of trees and bat boxes (BCI, 2024)[30]. During the winter, BLE can be found roosting in caves, tunnels, mines, ice houses and occasionally deep hollows of mature trees and buildings (BCT, 2024).

Current NPWS Article 17 distribution mapping for BLE bat has determined that the species known range and distribution does not encompass the relevant hectad, V46 (NPWS, 2019). The BLE bat's conservation status in Ireland is currently found to be favourable and improving (NPWS 2019) with an Irish Red List status of 'Least concern' (Marnell, *et al*., 2019). The population size in Ireland is estimated at 64,000 to 115,000 (2007-2012) with an estimated core area of 49,929 km^2 (Roche, *et al*., 2014).

Daubenton's bat (*Myotis daubentonii*) - Call frequency ranges from 35 to 85kHz (loudest at 45 to 50kHz)

[26] Conserve Ireland (CI), 2024, *Brown long eared profile*, available at https://www.conserveireland.com/mammals/brown-longeared-bat.php

[27] Bat Conservation Trust (BCT), 2024, *UK Bats: Brown Long eared* available at https://www.bats.org.uk/about-bats/what-are-bats/uk-bats/brown-long-eared-bat

[28] University of Bristol (UOB), 2024, *Brown long-eared bat Plecotus auritus biology* available from https://www.bio.bris.ac.uk/research/bats/britishbats/batpages/brownlongeared.htm

[29] National Biodiversity Data Centre (NBDC), 2024, *Brown long-eared bat Plecotus auritus profile*, available from https://species.biodiversityireland.ie/profile.php?taxonId=119441&taxonGroupName=terrestrial%20mammal&taxonDesignationId=2#Taxonomy

[30] Bat Conservation Ireland (BCI), 2024, *Brown long eared bat,* available from https://www.batconservationireland.org/irish-bats/species/brown-long-eared-bat

Daubenton's bat is a medium sized bat and is widely known as the 'water bat' due to its strong association with water bodes and rivers (PTES, 2024)[31]. These bats are low and fast flying, and typically skim the water's surface to catch their prey and are known to use their ventral fur to collect water to drink (UOB, 2024)[32]. Emergence times of this species of bat ranges and there are even difference between times in males and females (Andrews Ecology, 2017)[33] with data suggesting that some females leave the roost earlier than the males. On average the emergence time for this species is 84 minutes after sunset (UOB, 2024).

Daubenton's bat distribution is widespread and can be found throughout the island of Ireland (NBDC, 2024)[34]. Although this species is heavily associated with waterways and water bodies, preferring to feed on its prey over calm slow-moving water, they are often also found foraging along woodland rides and edges and are less common in urban areas. Roosting preferences include caves, mines, tunnels, trees, ice houses but rarely new building types (BCT, 2024)[35]. These species are often recorded as sharing roosting habitats with other species of bats such as natterers, pipistrelles and brown long eared (UOB, 2024). Daubenton's bat roosting preferences differ very little over the year regardless of season (BCT, 2024).

Current NPWS Article 17 distribution mapping for Daubenton's bat has determined that the species known range and distribution does not encompass the relevant hectad, V46 (NPWS, 2019). Daubenton's bat conservation status in Ireland is currently found to be favourable and improving (NPWS 2019) with an Irish Red List status of 'Least concern' (Marnell, *et al*., 2019). The population size in Ireland is estimated at 81,000 to 103,000 (2007-2012) with an estimated core area of 41,285 km^2 (Roche, *et al*., 2014).

Leisler's bat (*Nyctalus leisleri*) - Peak call frequency 25kHz (15 to 45kHz)

The Leisler's bat is Irelands biggest species with a combined head and body of approximately 54-64mm (NBDC, 2024)[36]. The Leisler's is a high-flying species (10-70m from ground level (Russ, 1999) and also one of the earliest to emerge from its roosts. Typically emerging at sunset or even before it, their activity is closely linked to temperature (Russ at al, 2002)[37].

Although rarer in Britian and the rest of Europe, Leisler's are widely distributed across Ireland (BCI, 2024)[38]. Leisler's bats are primarily a woodland species but will occupy parklands and urban areas that can provide all of

[31] People's Trust for Endangered Species (PTES), 2024, *Daubenton's Bat: Facts and Figures* https://ptes.org/get-informed/facts-figures/daubentons-bat/

[32] University of Bristol (UOB), 2024, *Daubenton's bat Myotis daubentonii biology* available from https://www.bio.bris.ac.uk/research/bats/britishbats/batpages/daubentons.htm

[33] Andrews ecology Ltd, (2019), *A review of empirical data in respect of emergence and return times reported for the UK's 17 Native Bat Species*, available from http://battreehabitatkey.co.uk/wp-content/uploads/2017/06/AEcol-REVIEW-OF-EMERGENCE-AND-RETURN-EMPIRICAL-DATA-2017-Ver.-4.pdf accessed March 2024.

[34] National Biodiversity Data Centre (NBDC), 2024, *Daubenton's bat Myotis daubentonii profile*, available from https://maps.biodiversityireland.ie/Dataset/128/Survey/268

[35] Bat Conservation Ireland (BCI), 2024, *Daubenton's bat,* available from https://www.bats.org.uk/about-bats/what-are-bats/uk-bats/daubentons-bat

[36] National Biodiversity Data Centre (NBDC), 2024, *Leisler's bat Nyctalus leisleri profile*, available from https://species.biodiversityireland.ie/profile.php?taxonId=119464.

[37] Russ *et al*., (2003), *Seasonal patterns in activity and habitat use by bats (Pipistrellus spp. and Nyctalus leisleri) in Northern Ireland, determined using a driven transect*, Journal of Zoology 259. 289-299.

[38] Bat Conservation Ireland (BCI), 2024, *Leisler's bat* https://www.batconservationireland.org/irish-bats/species/leislers-bat accessed March 2024.

their habitat requirements (CI, 2024)[39]. Preferring open habitats, rivers lakes and woodlands, and unlike other bat species do not need to use linear features to navigate the landscape (UOB, 2024)[40]. Often associated with woodlands, they can be found to roost within tree holes and deep cavities and sometimes bat boxes. The Leisler's bat is also known to roost in buildings, both old and new, within lofts, between tiles and underfelt, under ridge tiles, above large soffit boards, behind hanging tiles, behind window shutters and in disused chimneys (UOB, 2024). During the winter months they can be found roosting within deep hollows of mature trees and crevices in buildings (BCT, 2024)[41].

Current NPWS Article 17 distribution mapping for Leisler's bat has determined that the species known range does encompass the relevant hectad, V46, but the species known distribution does not (NPWS, 2019).Leisler's bat conservation status in Ireland is currently found to be favourable and improving (NPWS 2019) with an Irish Red List status of 'Least concern' (Marnell, *et al*., 2019). The population size in Ireland is estimated at 73,000 to 130,000 (2007-2012) with an estimated core area of 52,820 km^2 (Roche, *et al*., 2014).

Lesser horseshoe bat (*Rhinolophus hipposideros*) - Peak call frequency 110kHz (109-115khz)

The lesser horseshoe bat (LHB) is one of Ireland's smallest bat species with a combined head and body of approximately 35-44mm (CI, 2024)[42]. Its name comes from its unique and complex noseleaf shape which resembles a horseshoe shape and helps this species of bat to echolocate (BCT, 2024)[43] and is distinguished from the greater horseshoe by size, as the lesser horseshoe is smaller and has a smaller forearm length (UOB, 2024)[44]. The LHB emerges anywhere from 30 minutes to 60 minutes after sunset (UOB, 2024) and generally flies low and is extremely agile (Russ, 1999) meaning it can hunt for prey between vegetation and or hedgerows (CI, 2024) but are an extremely light sensitive species and is not typically found in well-lit areas.

The lesser horseshoe is restricted in its distribution to the west of Ireland and is mainly found in Mayo, Galway, Clare, Limerick, Kerry and Cork (BCI,2024)[45]. LHB are associated with foraging in habitats such as sheltered valleys, woodland edge, pasture and wetlands, mixed woodlands and hedgerows (UOB, 2024). LHB were originally cave dwellers and will still use this sort of habitat along with tunnels, mines, and cellars for roosting when hibernating during the winter months (BCT, 2024). They can be found roosting within the warmer months in old buildings, rural buildings such as barns and stables and outhouses (BCI, 2024).

Current NPWS Article 17 distribution mapping for lesser horseshoe bat has determined that the species known range and distribution does not encompass the relevant hectad, V46 (NPWS, 2019). The lesser horseshoe bat's conservation status in Ireland is currently found to be Inadequate and declining (NPWS 2019) with an Irish Red

[39] Conserve Ireland (CI), 2024, *Leisler's bat profile*, available at https://www.conserveireland.com/mammals/leislers_bat.php

[40] University of Bristol (UOB), 2024, *Leisler's bat Nyctalus leisleri* available at https://www.bio.bris.ac.uk/research/bats/britishbats/batpages/leislers.htm accessed accessed March 2024.

[41] Bat Conservation Trust (BCT), 2024, *UK Bats: Leisler's bat,* available at https://www.bats.org.uk/about-bats/what-are-bats/uk-bats/leislers-bat

[42] Conserve Ireland (CI), 2024, *Lesser Horseshoe bat profile*, available at https://www.conserveireland.com/mammals/lesser_horseshoe_bat.php

[43] Bat Conservation Trust (BCT), 2024, *UK Bats: Lesser Horseshoe bat,* available at https://www.bats.org.uk/about-bats/what-are-bats/uk-bats/lesser-horsehoe

[44] University of Bristol (UOB), 2024, *Lesser Horseshoe bat Rhinolophus hipposideros*, available at https://www.bio.bris.ac.uk/research/bats/britishbats/batpages/lesserhorseshoe.htm

[45] Bat Conservation Ireland (BCI), 2024, *Lesser Horseshoe Bat*, available at https://www.batconservationireland.org/irish-bats/species/lesser-horseshoe-bat

List status of 'Least concern' (Marnell, *et al*., 2019). The population size in Ireland is estimated at 14,000 (2010-2011) with an estimated core area of 5,993 km^2 (Roche, *et al*., 2014).

Natterer's bat (*Myotis nattereri*) - Peak call frequency 50kHz (35-80khz)

The Natterer's bat is a medium sized bat with moderately long ears (NBDC, 2024)[46]. Its broad wings allow for agile, low and slow flight (UOB, 2024)[47] which gives them the ability to hover and also enables them to hunt their prey whilst in flight and by gleaning them from vegetation and are even able to catch spiders from their webs (BCI, 2024)[48]. Natterer's tend to be late emergers with an average emergence time of 75 minutes after sunset (Duvergé, P. L, *et al*., 2000)[49]. Natterer's are slightly rarer in Ireland than Britian and the rest of Europe but can still be found across the island of Ireland with fewer recorded in the southwest than the rest of the isle (NBDC, 2024). A study in the early nineties showed that in the west of Ireland this species typically gleaned its prey from vegetation rather than catching it in flight due to the type of insects available to this species of bat in that part of the country (Sheil *et al*.,1991)[50].

The Natterer's bat is associated with woodland habitats both deciduous and coniferous and will use tree lines and hedgerow as a way of commuting (BCT, 2024)[51]. This species of bat will also hunt low over open water and but typically hunts higher than the Daubenton's bat (NBDC, 2024). These bats can also be found to forage in urban areas, parkland, and over agricultural land (CI, 2024)[52]. Natterers will roost in trees, bat boxes, old stone buildings like barns and churches, as well as structures such as tunnels, caves, mines and under bridges (BCT, 2024). During the winter months they can be found hibernating in underground structures like tunnels, mines and caves, and are also known to share their roosting spaces with other species of bat such as the brown long eared and Daubenton's (NBDC, 2024).

Current NPWS Article 17 distribution mapping for Natterer's bat has determined that the species known range and distribution does not encompass the relevant hectad, V46 (NPWS, 2019). Natterer's bat conservation status in Ireland is currently found to be favourable and stable (NPWS 2019) with an Irish Red List status of 'Least concern' (Marnell, *et al*., 2019). The population size in Ireland is 'unknown' with an estimated core area of 52,864 km^2 (Roche, *et al*., 2014).

Whiskered bat (*Myotis mystacinus*) - Call frequency ranges from 32 to 89kHz (loudest at 45kHz)

[46] National Biodiversity Data Centre (NBDC), 2024, Natterer's bat Myotis nattereri: profile, available at https://species.biodiversityireland.ie/profile.php?taxonId=119463

[47] University of Bristol (UOB), 2024, *Natterer's bat Myotis nattereri* available at https://www.bio.bris.ac.uk/research/bats/britishbats/batpages/leislers.htm accessed March 2024.

[48] Bat Conservation Ireland (BCI), 2024, *Natterer's bat. Available at* https://www.batconservationireland.org/irish-bats/species/natterers-bat.

[49] Duvergé, P. L., Jones, G., Rydell, J., & Ransome, R. D. (2000). *Functional Significance of Emergence Timing in Bats*. Ecography, *23*(1), 32–40.

[50] Sheil. C. B., McAney. C. M., & Fairley. J. S, (1991), *Analysis of the diet of Natterer's bat Myotis nattereri and the common long-eared bat Plecotus auritus in the West of Ireland*, 223(2), 299-305. Justor

[51] Bat Conservation Trust (BCT), 2024, *UK Bats: Natterer's bat,* available at https://www.bats.org.uk/about-bats/what-are-bats/uk-bats/natterers-bat

[52] Conserve Ireland (CI), 2024, *Natterer's bat profile*, available at https://www.conserveireland.com/mammals/natterers_bat.php

The whiskered bat is a small bat and is found to be rarer in Ireland, although widespread across Britian and the rest of Europe (BCT,2024)[53]. The whiskered bat is also Europe's smallest *Myotis* bat species and is related to the other *Myotis* species found in Ireland; the Daubenton's bat and the Natterer's bat (BCI, 2024). As mentioned, this species is not common although can be found across Ireland, its distribution is disjointed (NPWS 2019). This could also be a reflection of the difficulty of separating their echolocation calls from other *Myotis* species as typically identification in-hand ultimately confirms the species type (BCT,2024). The whiskered bat will on average emerge from the roost within 30 minutes of sunset (Jones & Rydell, 1994)[54]. The whiskered bat is a medium to fast, agile flyer and usually flies approximately 20m above ground level (UOB, 2024)[55].

The whiskered bat can be found foraging in habitats such as open meadows and woodland that are often found in close proximity to waterbodies (BCI, 2024)[56]. Summer roosting habitat includes buildings, within loft spaces and eaves, between roof tile and hanging tiles and soffits, under bridges and hollows within mature trees (BCT,2024). Winter hibernation sites will include underground structures, such as caves, mines, and tunnels (CI, 2024)[57].

Current NPWS Article 17 distribution mapping for whiskered bat has determined that the species known range and distribution does not encompass the relevant hectad, V46 (NPWS, 2019). The whiskered bat conservation status in Ireland is currently found to be favourable and stable (NPWS 2019) with an Irish Red List status of 'Least concern' (Marnell, *et al*., 2019). The population size in Ireland is 'unknown' with an estimated core area of 29,222 km^2 (Roche, *et al*., 2014).

[53] Bat Conservation Trust (BCT), 2024, *UK Bats: Whiskered bat Myotis mystacinus*, available at https://www.bats.org.uk/about-bats/what-are-bats/uk-bats/whiskered-bat

[54] Jones, G., & Rydell, J. (1994). *Foraging strategy and predation risk as factors influencing emergence time in echolocating bats*, 346(1318), The Royal Society

[55] University of Bristol (UOB), 2024, *Whiskered bat Myotis mystacinus* available at https://www.bio.bris.ac.uk/research/bats/britishbats/batpages/whiskered.htm

[56] Bat Conservation Ireland (BCI), 2024, *Whiskered bat,* available at https://www.batconservationireland.org/irish-bats/species/whiskered-bat

[57] Conserve Ireland (CI), 2024, Whiskered bat profile, available at https://www.conserveireland.com/mammals/whiskered_bat.php