Starling Ecology

# Reg 54: Supplementary Information

## Westport Convent

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[redacted]

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# 1.0 Introduction

## 1.1 Background Information

This document outlines supporting information for an application for a derogation licence for proposed works at Altamont Street, Westport, Irish Grid Reference M 00236 84353. Starling Ecology were commissioned by MRL Architects to complete a Bat Emergence Report to inform proposed works to convert the derelict convent into housing. The Bat Emergence Survey identified three transitional roost sites in use by Soprano Pipistrelle (*Pipistrellus pygmaeus*) that are proposed for removal during the works.

A licence (DER-BAT-2026-259) was issued for the destruction of the Soprano Pipistrelle roosts and in the act of undertaking these works a Lesser Horseshoe (*Rhinolophus hipposideros*) night roost and day roost was identified of seven individuals. This document, originally prepared for the application resulting in DER-BAT-2026-259 has been amended to provide evidence and mitigation proposals for the destruction of the newly recorded Lesser Horseshoe roosts and outlines the proposed mitigation measures. Findings from the works carried out as part of this licence which ultimately recorded the Lesser Horseshoe roost is outlined in Section 4 and thereafter included in future sections as relevant.

The study site comprises a former convent in a peri-urban context on the eastern fringe of Westport amidst residential properties and semi-natural mature woodland and parkland associated with a nearby cemetery.

## 1.2 The Proposed Development

### 1.2.1 Development Description

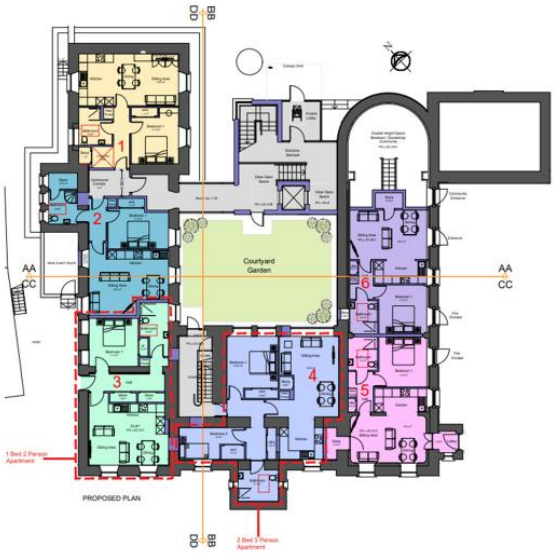
The proposal focuses on the sensitive adaptive reuse of the existing Mount Saint Mary's Convent of Mercy, a protected institutional building that is currently vacant and underutilised. Rather than demolition or greenfield development, the project prioritises the renewal of an established town-centre site, ensuring the long-term preservation of a building of architectural and social significance while restoring it to productive use.

The proposal delivers 18 social housing apartments within the existing three-storey convent structure, with key façades and architectural features retained and conserved. Carefully

designed, modest additions, including a new stair and lift core, are introduced to improve accessibility and meet modern living standards while remaining visually subordinate to the historic building. This approach allows the structure to accommodate contemporary residential use without compromising its character.

By reactivating a prominent but vacant site, the regeneration proposal brings renewed life, activity and purpose back to this part of Westport. It supports compact urban growth, reduces pressure for outward expansion of the town, and aligns with national and local policies that encourage the reuse of existing buildings. The project demonstrates a heritage-led regeneration strategy that balances conservation with social need, ensuring the convent continues to contribute positively to the town's fabric and community into the future.

| Description | Number | Percentage |
|---|---|---|
| Studio - 2 Person Apartments | 2 | 11% |
| 1 Bed - 2 Person Apartments | 14 | 78% |
| 2 Bed - 3 Person Apartments | 2 | 11% |
| Total | 18 | 100% |



Proposed Lower Ground Floor



Proposed Upper Ground Floor

A site masterplan has been included for further information in this report in Appendix A.

## 1.2.2 Contribution to public interest

The regeneration of Mount Saint Mary's Convent delivers a wide range of social, cultural, environmental and economic benefits for Westport, while aligning closely with the objectives of the Mayo County Development Plan and the Westport Town Development Plan.

#### 1.2.2.1 Heritage-led Regeneration

The project safeguards and reactivates a protected structure of significant architectural and social value through continued and appropriate use. By retaining and reusing the existing convent building, the regeneration ensures the long-term preservation of an important element of Westport's historic fabric, in accordance with Development Plan policies that promote conservation and adaptive reuse within the Architectural Conservation Area.

#### 1.2.2.2 Social value and housing delivery

The scheme provides 18 much-needed social housing apartments within walking distance of Westport town centre, services, public transport and amenities. This supports Mayo County Council's objectives to address housing need, particularly for smaller household types, and to provide accommodation in accessible, well-connected urban locations. The development also supports inclusive living through improved accessibility within the building.

#### 1.2.2.3 Town vitality and urban renewal

By bringing a vacant and under-utilised institutional site back into active use, the regeneration reintroduces life and activity to this part of the town. This contributes to the overall vitality of Westport, strengthens the surrounding neighbourhood, and supports the Town Development Plan's aim of reinforcing residential presence within the urban core.

#### 1.2.2.4 Sustainable development

The reuse of an existing building significantly reduces environmental impact when compared to new-build development on greenfield land. The project supports compact growth, efficient use of serviced land and reduced pressure for urban sprawl, all of which are key principles of both the Mayo County and Westport Development Plans.

#### 1.2.2.5 Economic and community benefit

The regeneration supports local employment during the construction phase and through ongoing management and maintenance of the building. More broadly, the project represents reinvestment in an established town-centre site, helping to sustain local services and contributing to the long-term social and economic resilience of Westport.

## 1.3 Summary of Previous Surveys

A Bat Emergence Report[1] (Doherty, 2024) was carried out in the immediate vicinity of this derogation application for proposed works to the former school house which identified a Lesser Horseshoe (*Rhinolophus hipposideros*) hibernation roost comprising of a small number of individual bats in a former school house and recorded Lesser Horseshoe commuting behaviour to the northeast of the convent (for which this derogation application relates). In addition the former schoolhouse is considered to be used for Autumnal swarming and as a mating site and is likely to be used as a roost site during this period. The former schoolhouse is not considered to be in use as a day/night roost. On this basis the former schoolhouse adjacent to the site was considered to have "**moderate**" conservation significance[2].

This report also surveyed the Annex 1, Annex 2, Old Kitchen and Green House buildings and found that these sites were not being used for roosting bats, however observed that that they may play a role as feeding perches for common / rarer species given the presence of scattered droppings. In addition seven Soprano Pipistrelles were observed emerging from the northwest aspect of the convent in survey 1 dated 14th and the 15th May 2024 of the previous Bat Emergence Report from the roof in the area adjacent to the chimney stack.

Derogation licence number DER-BAT-2025-334 was issued for this proposed development, it and associated reporting should be read alongside this document. The relevant report has been included in Appendix B. The findings of this survey are also illustrated in Figure 1 below and mitigation measures in Figure 2 below. The convent as outlined in Section 1.1 is outlined in Figure 1 which also shows the position of the other buildings that constitute the broader site as surveyed by Doherty 2024.

[1] Doherty Environmental Consultants (DEC) LTD (2024). Bat Survey Report – Westport.
[2] Marnell, F., Kelleher, C & Mullen, E. (2022). Bat Mitigation Guidelines for Ireland. Version 2 Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland




Site Name
Westport Convent,
County Mayo

Legend
Convent
Identified Bat Roost
Conservation Value
Negligible
Low
Moderate

Location



Title
**Results of previous survey (adapted from DEC 2024).**

Starling Ecology

| Drawn by | Date drawn | Scale |
|---|---|---|
| CMcK | 30/10/2025 | 1:830 |
| Report Number | | Page Number |
| Wes/01/25 | | N/A |

*Figure 1 Results from previous survey (adapted from DEC 2024)*

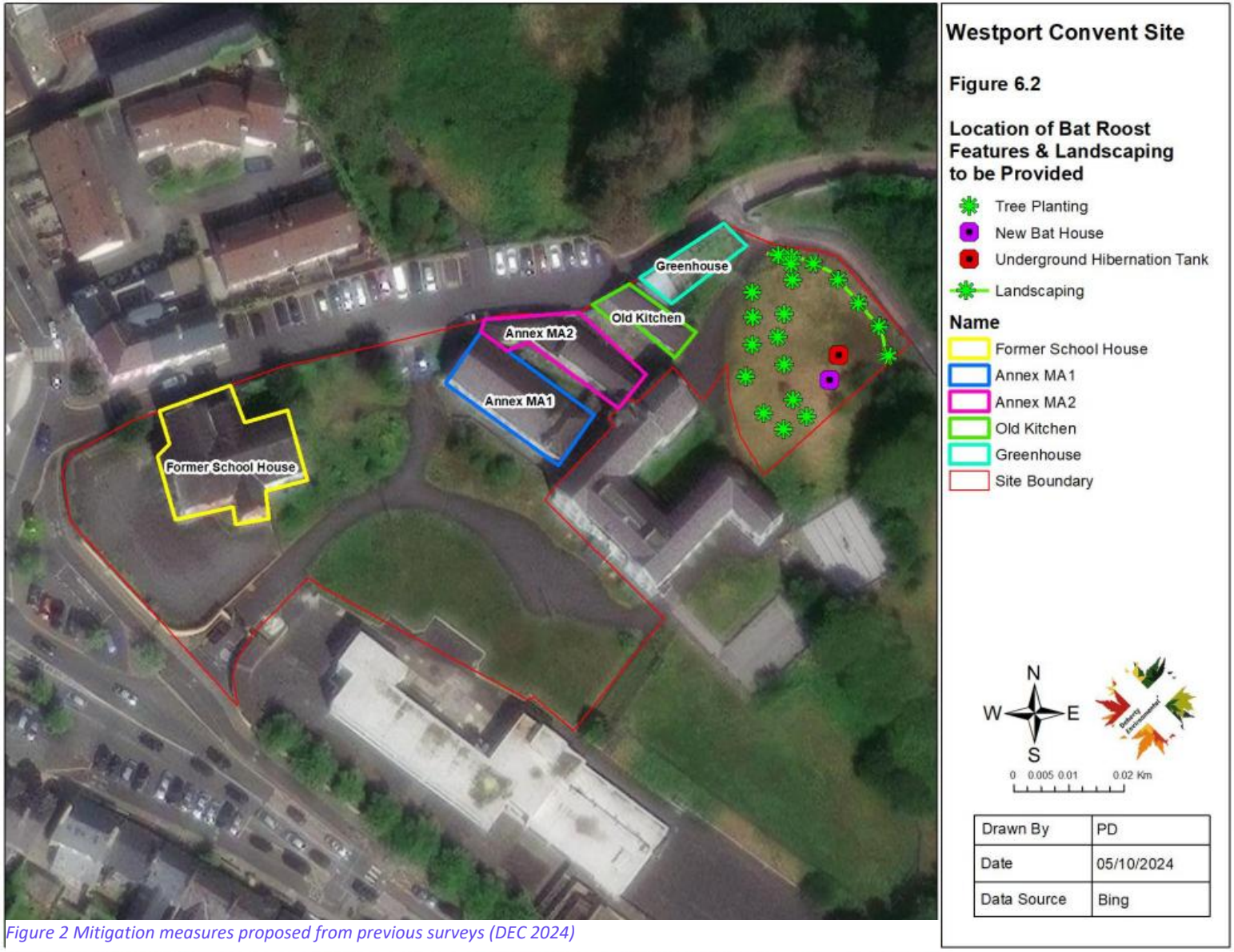



*Figure 2 Mitigation measures proposed from previous surveys (DEC 2024)*

## 1.4 Legislation and Policy

Bats are protected by law in the Republic of Ireland under the Wildlife Act 1976 and subsequent amendments (2000 and 2010). Under the Wildlife Act, it is an offence to intentionally disturb, injure or kill a bat or disturb its resting place. Under this legislation it is unlawful to destroy, alter or disturb known bat roosts without an appropriate derogation license, as issued by the National Parks and Wildlife Service (NPWS).

All bat species fall under Annex IV of the EU Habitats Directive (1992), whereby member states have a burden of responsibility to protect bats and their resting places wherever they occur. The EU Habitats Directive has been transposed into Irish law with the European Communities (Birds and Natural Habitats) Regulations 2011.

## 1.5 Statement of Competency

This survey and associated reporting was carried out by Conor McKinney who has 20 years of experience as an ecologist with the public, private and community sector. Conor has BSc in Environmental Science, a MSc in Ecological Management and Conservation Biology and is a full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM). Conor has undertaken bat surveys for large motorway projects (such as Lesser Horseshoe (*Rhinolophus hipposederos*) surveys for applications associated with the new N6 motorway in Galway), bat activity surveys for a range of wind farm and wind turbine projects and a myriad number of bat emergence surveys for projects associated with tree removal and building demolition and restoration projects throughout Ireland.

During the field work for this survey Conor was supported by Lois Clemence, Rebekah Bajko, Valentina Concha-Toro, Gemma Sandford and Amy Weir. Lois has two years' experience undertaking bat surveys including with the Daubenton's bat survey with Bat Conservation Ireland and with Starling Ecology and Is currently studying an MSc in Ecological Management and Conservation Biology. Rebekah has over four years' experience undertaking bat surveys with Starling Ecology, Tetra-Tech and Carlin Planning. Valentina Concha-Toro has an MSc in Ecological Management and Conservation Biology and is an Associate of CIEEM (ACIEEM). Gemma Sandford and Amy Weir both have two years of experience with Starling Ecology and are currently studying for a BSc in Biological Science.

All supporting surveyors were given training on bat ecology and survey methodologies, including training on the use of the survey equipment in April 2025.

# 2.0 Methodology (Starling Ecology 2025)

## 2.1 Survey Aims

The aims of the surveys were to ensure information was available to:

1) Ascertain presence or likely absence of bat roosts within the buildings on site identified to have bat roosting potential;
2) If present, determine which species are present and the size, nature and conservation value of any roosts;
3) Provide recommendations for further survey, mitigation, compensation and enhancement measures and licensing requirements to satisfy legal and planning policy requirements where appropriate.

## 2.2 Survey Methodology

### 2.2.1 Desktop Study

A desktop survey was carried out on the 30th October 2025 using data from the client, Biodiversity Ireland[3] and Lundy (2011)[4]. The client provided bat reports from nearby developments which were reviewed (see Section 1.2). Lundy (2011) utilised Maximum Entropy Models (MEM) for each bat species using records from the National Bat Database from 2000-2009. The results help explain patterns of species' occurrence and predict where species might occur. Other factors that might explain bat presence or absence were built into the model including Landcover (CORINE), topography, climate, soil pH, riparian habitat and human bias factors.

[3] Bat Conservation Ireland, National Bat Database of Ireland, National Biodiversity Data Centre, Ireland, accessed 11th September 2025, <https://maps.biodiversityireland.ie/Dataset/128>

[4] Lundy, M.G., Aughney, T., Montgomery, W.I., & Roche, N., (2011) Landscape conservation for Irish bats & species specific roosting characteristics. Bat Conservation Ireland

### 2.2.2 Field Survey

Emergence Surveys were carried out in accordance with the recently updated best practice guidance[5] and complied with British Standard 42020:2013[6]. Survey of these features occurred on the 29th August, 26th September and 27th September 2025 and were led by Conor McKinney (BSc, MSc, MCIEEM). Survey locations were amended for the second survey to capture suspect behaviour and investigate suspect observations from the first survey and therefore two surveyors were placed within the courtyard on field study 2 to confirm absence of Lesser Horseshoe emergence from the lower buildings. Field survey 3 concentrated on ascertaining flight path patterns of Lesser Horseshoe bat along the north of the convent and also aimed to ascertain if there was roosting behaviour in the adjacent old kitchen building.

In accordance with best practice guidelines the survey commenced at least fifteen minutes prior to sunset until ninety minutes after sunset. Surveyors utilised a combination of Echo Meter Touch 2 recorders with an android attachment and a Batlogger. Surveys are recommended to be iterative and given the extent of the site surveyors were rotated to observe all features that were considered to offer potential. Were suspect bat activity was identified but unconfirmed surveyor locations were adjusted to facilitate further investigation and allow for confirmation.

Observer locations are illustrated in Figures 2, 3 and 4 and are evidenced in Appendix C. Surveyor locations are indicated by their initials; Conor McKinney (CMcK), Amy Weir (AW), Gemma Sandford (GS), Lois Clemence (LC), Rebekah Bajko (RB), Valentina Concha-Toro (VCT). Any bats calls auto-identified by the Batlogger or Echo Meter Touch 2 were submitted to the BTO Acoustic Pipeline for further assessment the results of which were Quality Assured by Conor McKinney on receipt.

Weather conditions and survey timings are outlined in Section 3.2 and are considered to be within the boundaries of best practice guidance.

## 2.3 Limitations

The information outlined in this report represent those findings at the time of the survey. Information within may be limited by factors such as weather conditions on the date of the survey, seasonality and individual species behaviour; however effort has been taken to ensure the findings reflect the possible use of the site by roosting bats as possible.

While survey effort was in accordance with best practice guidance it was considered to be late within the permitted season. The report provides evidence of presence but cannot be taken as

[5] Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition). The Bat Conservation Trust, London

[6] British Standard 42020 (2013). Biodiversity – Code of Practice for Planning and Development.

evidence of absence.  Caution should be taken during works to ensure bats are protected if found on site, if this is the case an ecologist should be consulted. Internal inspections were not possible as a result of health and safety concerns.




Site Name

Westport Convent,

Westport

Legend

Convent

Field Visit 1

AW

CMcK

GS

LC

RB

VCT

Location



Title

**Surveyor Locations Visit 1.**

Starling Ecology

| Drawn by | Date drawn | Scale |
|---|---|---|
| CMcK | 30/10/2025 | 1:590 |

| Report Number | Page Number |
|---|---|
| Wes/01/25 | N/A |

*Figure 3 Survey locations for visit 1*

*Figure 4 Survey locations for visit 2*




Site Name
Westport Convent,
Westport

Legend
Convent
Field Visit 2
AW
CMcK
GS
LC
VCT

Location



Title
**Surveyor locations – Visit 2.**

Starling Ecology

| Drawn by | Date drawn | Scale |
|---|---|---|
| CMcK | 30/10/2025 | 1:590 |
| Report Number | | Page Number |
| Wes/01/25 | | N/A |

*Figure 5 Surveyor locations visit 3*




Site Name
Westport Convent,
Westport

Legend
Convent
Field Visit 3
CMcK
LC
VCT

Location



Title
**Surveyor locations – Visit 3.**

Starling Ecology

| Drawn by | Date drawn | Scale |
|---|---|---|
| CMcK | 31/10/2025 | 1:590 |
| Report Number | | Page Number |
| Wes/01/25 | | N/A |

# 3.0 Results (Starling Ecolost 2025)

## 3.1 Desktop Study

Suitability of the area for species of bats (as described in Lundy, 2011[7]) are outlined below in Table 1 which summarises the published maps of a 'habitat suitability' index. The index ranges from 0 to 100 with 0 being least favourable and 100 most favourable for bats. Colour schemes and summary of the data are as follows:

| Least Suitable | Less Suitable | Moderately Suitable | More Suitable | Most Suitable |
|---|---|---|---|---|

| All bats | Brown Long-eared Bat (*Plectus auratus*) | Common Pipistrelle (*Pipistrellus pipistrellus*) | Soprano Pipistrelle (*Pipistrellus pygmaeus*) | Nathusius' Pipistrelle (*Pipistrellus nathusii*) |
|---|---|---|---|---|
| 32 | 41 | 32 | 54 | 2 |
| **Leisler's Bat (*Nyctalus leisleri*)** | **Lesser Horseshoe Bat *(Rhinolophus hipposideros)*** | **Daubenton's Bat (*Myotis daubentonii*)** | **Whiskered Bat (*Myotis mystacinus*)** | **Natterer's Bat (*Myotis nattereri*)** |
| 49 | 4 | 42 | 32 | 28 |

*Table 1 Suitability of 6x6 km² area encompassing site for bats based on Lundy et al (2011).*

The landscape suitability data suggests that the 6x6 km² area within which the site occurs can be considered:

- least suitable for Lesser Horseshoe Bat and Nathusius' Pipistrelle;
- moderately suitable for Common Pipistrelle and Natterer's bat;
- more suitable for Brown Long-eared bat and Whiskered bats; and
- most suitable for Soprano Pipistrelle, Leisler's bat and Daubenton's bat.

The site generally is considered to have more suitability for bats.

[7] Lundy, M.G., Aughney, T., Montgomery, W.I., & Roche, N., (2011) Landscape conservation for Irish bats & species specific roosting characteristics. Bat Conservation Ireland.

## 3.2 Field Study

Photographs of surveyor locations can be found in Appendix C and a full list of passes can be found in Appendix D. Survey locations are as illustrated in Figure 3, 4 and 5 and results of these surveys are outlined below.

### 3.2.1 Field Study 1: 29th August 2025

Start times and weather conditions for this survey are outlined below in Table 3.

*Table 2 Timing and weather conditions for field study 1.*

| Survey Date | Start Time | **Sunset Time** | End Time | Temperature °C | Wind (Km/h) | Precipitation **(mm)** | Photograph |
|---|---|---|---|---|---|---|---|
| 29th August 2025 | 20:19 | 20:34 | 22:05 | 13 | 4 | 0 |   |

During the course of the survey **three emergences** of Soprano Pipistrelle were noted, one from surveyor Rebekah Bajko (RB) from raised tiles to the left of the roof and two by surveyor Amy Weir from the roof eaves, pictures of these roost features are included in Table 3 below. Suspect Lesser Horseshoe emergence activity within the courtyard was recorded by surveyor Lois Clemence but was confirmed on review of the NVA footage to be foraging activity close to the buildings within the courtyard rather than an emergence.

No emergences were noted from the chimney stack that was confirmed as a roost site in previous surveys[8].

[8] Doherty Environmental Consultants (DEC) LTD (2024). Bat Survey Report – Westport.

*Table 3 Photographs of roost features*

| Feature confirmed as roosting site for one Soprano Pipistrelle by Rebekah Bajko | Feature confirmed as roosting site for two Soprano Pipistrelle by Amy Weir |
|---|---|
|  |  |

Three species of bats were recorded; Common Pipistrelle, Lesser Horseshoe bat and Soprano Pipistrelle. A breakdown of the number bat passes by species and location is included in Table 4 below.

*Table 4 Summary of bat passes recorded during field study 1.*

| Species | CMcK Position | RB Position | AW Position | VCT Position | LC Position | GS Position | Summary of calls |
|---|---|---|---|---|---|---|---|
| Common Pipistrelle | 1 | 2 | 2 | 3 | 2 | 0 | CMcK Position<br>1 echolocation<br>RB Position<br>2 echolocation<br>AW Position<br>2 echolocation<br>VCT Position<br>2 echolocation<br>1 social<br>LC Position<br>2 echolocation |

| Species | CMcK Position | RB Position | AW Position | VCT Position | LC Position | GS Position | Summary of calls |
|---|---|---|---|---|---|---|---|
| Lesser Horseshoe | 0 | 0 | 0 | 0 | 3 | 5 | LC Position<br>3 echolocation<br>GS Position<br>5 echolocation |
| Soprano Pipistrelle | 2 | 19 | 16 | 99 | 125 | 14 | CMcK Position<br>2 echolocation<br>RB Position<br>17 echolocation<br>2 social<br>AW Position<br>13 echolocation<br>3 social<br>VCT Position<br>62 echolocation<br>34 social<br>3 feeding buzz<br>LC Position<br>73 echolocation<br>52 social<br>GS Position<br>10 echolocation<br>4 social |

### 3.2.2 Field Study 2: 26th September 2025

Start times and weather conditions for this survey are outlined below in Table 5.

*Table 5 Timing and weather conditions for field study 2.*

| Survey Date | Start Time | **Sunset Time** | End Time | Temperature °C | Wind (Km/h) | Precipitation **(mm)** | Photograph |
|---|---|---|---|---|---|---|---|
| 26th September 2025 | 19:10 | 19:26 | 21:00 | 14 | 6 | 0 |  |

During the course of the survey **no emergences** were noted.

Five species of bats were recorded active on site, these comprised of Brown-long-eared bat, Common Pipistrelle, Leisler's bat, Lesser Horseshoe and Soprano Pipistrelle and activity consisted of foraging and commuting behaviour although substantial Soprano Pipistrelle activity

including an abundance of social calls were recorded by observers. A breakdown of the number bat passes by species and location is included in Table 6 below.

*Table 6 Summary of bat passes recorded during field study 2*

| Species | AW Position | GS Position | VCT Position | LC Position | CMcK Position | Summary of calls |
|---|---|---|---|---|---|---|
| Brown Long-eared Bat | 0 | 1 | 1 | 1 | 0 | GS Position<br>1 echolocation VCT Position<br>1 echolocation<br>LC Position<br>1 echolocation |
| Common Pipistrelle | 0 | 1 | 4 | 1 | 0 | GS Position<br>1 echolocation VCT Position<br>4 echolocation<br>LC Position<br>2 echolocation |
| Lesser Horseshoe | 0 | 1 | 19 | 20 | 1 | GS Position<br>1 echolocation VCT Position<br>19 echolocation<br>LC Position<br>20 echolocation<br>CMcK Position<br>1 echolocation |
| Leisler's bat | 1 | 0 | 4 | 2 | 0 | AW Position<br>1 echolocation<br>VCT Position<br>4 echolocation<br>LC Position<br>2 echolocation |
| Soprano Pipistrelle | 2 | 83 | 111 | 115 | 4 | AW Position<br>2 echolocation<br>GS Position<br>39 echolocation<br>2 feeding buzz<br>42 social<br>VCT Position<br>61 echolocation<br>50 social<br>LC Position<br>63 echolocation<br>52 social<br>CMcK Position<br>4 echolocation |

### 3.2.3 Field Study 3: 27th September 2025

Start times and weather conditions for this survey are outlined below in Table 7.

*Table 7 Timing and weather conditions for field study 3.*

| Survey Date | Start Time | **Sunset Time** | End Time | Temperature °C | Wind (Km/h) | Precipitation **(mm)** | Photograph |
|---|---|---|---|---|---|---|---|
| 27th September 2025 | 19:10 | 19:26 | 21:00 | 15 | 5 | 0 |   |

During the course of the survey **no emergences** were noted.

Four species of bats were recorded active on site, these comprised of Brown-long-eared bat, Common Pipistrelle, Lesser Horseshoe and Soprano Pipistrelle and activity consisted of foraging and commuting behaviour although substantial Soprano Pipistrelle activity including an abundance of social calls were recorded by observers. A breakdown of the number bat passes by species and location is included in Table 8 below.

*Table 8 Summary of bat passes recorded during field study 3*

| Species | VCT Position | LC Position | CMcK Position | Summary of calls |
|---|---|---|---|---|
| Brown Long-eared Bat | 1 | 0 | 0 | VCT Position<br>1 echolocation |
| Common Pipistrelle | 4 | 1 | 0 | VCT Position<br>4 echolocation<br>LC Position<br>1 echolocation |
| Lesser Horseshoe | 6 | 8 | 0 | VCT Position<br>6 echolocation<br>LC Position<br>8 echolocation |
| Soprano Pipistrelle | 192 | 54 | 11 | VCT Position<br>102 echolocation<br>1 feeding buzz<br>89 social<br>LC Position<br>31 echolocation<br>1 feeding buzz<br>22 social |

| Species | VCT Position | LC Position | CMcK Position | Summary of calls |
|---|---|---|---|---|
| | | | | CMcK Position<br>11 echolocation |

### 3.2.4 Summary of findings

Three bat emergences were observed over three surveys, from two different features in the southwest and eastern aspects of the convent. These emergences were all observed in the first survey. The locations of these emergences are mapped in Figure 5 below along with the results outlined in previous surveys.

# 4.0 Works relevant to DER-BAT-2026-259

## 4.1 Overview

Derogation DER-BAT-2026-259 was issued on the 16th July that:

"A. In the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment

B. As there is no satisfactory alternative, and the action authorised by this derogation will not be detrimental to the maintenance of the population of bats referred to below at a favourable conservation status in their natural range.

This derogation authorises the following:

1. Roost disturbance

2. Actions authorised within the derogation The derogation is issued in respect of the following bat species:

• Soprano Pipistrelle *Pipistrellus Pygmaeus*"

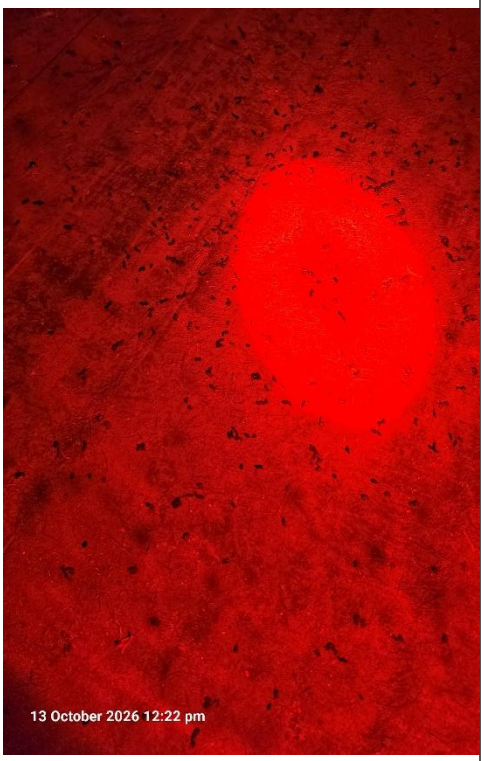
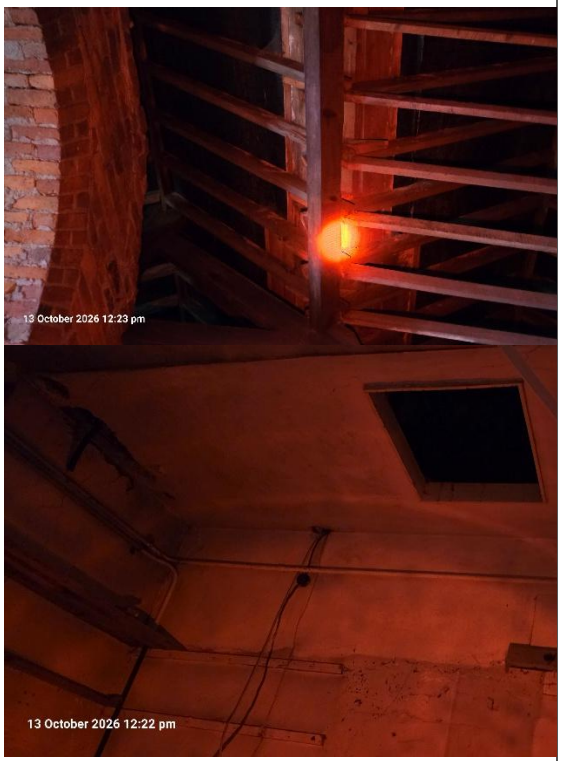
A deadline of 18th October 2026 was agreed for the purpose of these works. While these works will be reported in full in the derogation return four weeks from the expiration date of these works, where information relevant to the expansion of this derogation to cover the identified Lesser Horseshoe roosts it has been included.

## 4.2 Discovery of Lesser Horseshoe roosts.

To deliver on the works derogated under DER-BAT-2026-259 a team of ecologists, led by licensee Conor McKinney, visited the site between 12th October and the 14th October 2026.

A re-entry survey was undertaken at the previously identified Soprano Pipistrelle roosting locations outlined in Figure 6. Two individual Soprano Pipistrelles were observed entering roosting features recorded by Starling Ecology[9] and reported in section 3.2.1 and illustrated in Figure 6 above.

As a consequence of these re-entries and the nature of the features (crevices in blockwork below eaves rather than beneath hanging tiles), an internal inspection was undertaken to ascertain if the crevices were sufficiently deep enough to allow internal access and consequently internal features. This inspection was able to rule out access to internal features, however the inspection did identify bat droppings at several features which were traced to observations of a roosting lesser horseshoe at two different locations, one in a small landing adjacent the chapel on site and a second within a roof void on the top floor. Given the number of droppings and the history of the site (seven lesser horseshoes in a school house adjacent the site that have likely been displaced), it is considered that the convent may now harbour those displaced Lesser Horseshoe bats.

<table>
<tr><th colspan="2">Supporting Evidence of Lesser Horseshoe Bat Roosts</th></tr>
<tr><th colspan="2">Day roost</th></tr>
<tr><td>
</td><td>
</td></tr>
<tr><td>Bat droppings below doorframe in same room as flying bat observed in loft.</td><td>Loft hatch bat observed flying through, nature of roof void in adjacent stairwell.</td></tr>
<tr><th colspan="2">Night roost</th></tr>
</table>

[9] Starling Ecology (2025) Bat Emergence Report – Westport.

| Supporting Evidence of Lesser Horseshoe Bat Roosts | |
|---|---|
|  |  |
| Landing with night roosting Lesser Horseshoe | Bat dropping in vicinity of observed Lesser Horseshoe. |

*Figure 6 Locations of bat roosts*




Site Name

Westport Convent,

Westport

Legend

- Rhip access
- Identified Bat Roost
- Convent

Location



Title

**Identified bat roosts from historic and current surveys**

Starling Ecology

| Drawn by | Date drawn | Scale |
|---|---|---|
| CMcK | 15/10/2026 | 1:590 |

| Report Number | Page Number |
|---|---|
| Wes/01/25 | N/A |

# 5.0 Discussion

## 5.1 Soprano Pipistrelle

Bats were observed emerging from two features during the survey, from roof tiles on the southwest aspect of the convent and to roof eaves to the east of the convent. In addition previous surveys[10] ascertained that an additional roost site is present in the roof space adjacent the chimney stack on the northwest aspect of the site. Given the low numbers of individual bats recorded from the site and the lack of continuity that the roosts appeared to be occupied it is considered that these roosts are "transitional" roost sites that are most likely used by bachelor males. Therefore, it is concluded that the proposed works are likely to have an impact on roosting bats, specifically Soprano Pipistrelles for which three transitional roosts were recorded.

Soprano Pipistrelle are considered "**widespread all geographies**[11]" and the most recent Article 17 reporting has recorded the species as being **stable**[12] in both long-term and short-term trend directions[2].

Application of guidelines[13][14] suggest that the cumulative roosts on site are considered to be "**Local**" level or "**low**" to "**moderate**" given the potential for up to 10 roosting bats across three transitional roosts which are likely to be, and appear to be, swapped for other roosts in the area.

[10] Doherty Environmental Consultants (DEC) LTD (2024). Bat Survey Report – Westport.
[11] Reason, P.F. and Wray, S. (2025). UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. Version 1.2. Chartered Institute of Ecology and Environmental Management, Ampfield.
[12] NPWS. (2025). Article 17 Reporting 2025. Accessed 13 May 2026. Available at https://www.npws.ie/sites/default/files/publications/pdf/article-17-report-2025-volume-3.pdf
[13] Reason, P.F. and Wray, S. (2025). UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. Version 1.2. Chartered Institute of Ecology and Environmental Management, Ampfield.
[14] Marnell, F., Kelleher, C. & Mullen, E. (2022) Bat mitigation guidelines for Ireland v2. Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland

## 5.2 Lesser Horseshoe

### 5.2.1 Overview

Lesser Horseshoe is considered to have an **increasing** short-term and long-term range and population trend though it's Favourable Conservation Status remains **unfavourable inadequate**.

Findings across all surveys (Doherty Environmental Consulting (DEC) 2024 – see Appendix B; Starling Ecology 2025 and works relating to DER-BAT-2026-259 (see Section 4)) are all synonymous in identifying and recording Lesser Horseshoe bat activity on site.

### 5.2.2 DEC 2024

DEC 2024 stated that:

"*Two lesser horseshoe bats were visually observed flying low along the northeast facing side of the convent building, similar to the May 2024 emergence survey. Later 1 no. lesser horseshoe bat was observed flying from near the northeast elevation of the main convent building in an easterly direction through the scrub and the grassland habitat at the northeast of the convent site.*"

Similar activity was observed in Starling Ecology 2025.

### 5.2.3 Starling Ecology 2025

In total this survey recorded 63 records of Lesser Horseshoe bat passes to the northeast of the site. The bats appeared to be entering the site via the greenway to the north of the site before exiting over scrub and grassland to the northeast of the site adjacent the cemetery which leads towards dense woodland. Lesser Horseshoe bats are very sensitive to light pollution and this development will occur in the vicinity of a heavily used flightpath in the immediate vicinity of a proposed replacement hibernacula that is proposed as a mitigation measure for another proposed development.

In addition it is considered that the proposed development risks mitigation measures already proposed as part of an adjacent planning application at the former schoolhouse, specifically as a result of additional light pollution that can be anticipated without mitigation during the

operational phase of this proposed development. Lesser horseshoe bats appear to be using a dark flight corridor to the north of the convent as a dark flyway to access woodland to the north and east of the site (see Figure 7). Given the level of protection afforded to Lesser Horseshoe (Annex II species) and the reluctance of the species to utilize lit or exposed areas this corridor is considered to be functionally ecologically coherent with the proposed hibernacula which is defined as having "**moderate**" significance.

### 5.2.4 Works relating to DER-BAT-2026-259

These works identified a night roost and a day roost within the building along with droppings that plausibly support a case that the site may be in use for roosting by the bats observed to have been using the adjacent school house for roosting (i.e. one confirmed individual but perhaps approximately seven Lesser Horseshoe bats using the site as a day or night roost). These features are defined as having "**moderate**" conservation significance as per best practice guidelines (i.e. smaller numbers of a rarer species and not a maternity site).

Access points to the building are restricted to a broken window on the top floor to the northwest of the building that exists adjacent to the roof void that is currently in use as the day roost.




*Figure 7 Heatmap showing Lesser Horseshoe bat activity (dark red equals more activity) in vicinity of identified roost and suspected flight path across site and proposed mitigation measures (as in DEC 2024)*

## 5.3 Conclusion

Mitigation for the loss of three transitional Soprano Pipistrelle bat roosts and to negate risks from light pollution to proposed Lesser Horseshoe hibernacula and an associated commuting corridor are therefore required.

In addition as outlined in section 4 small number of Lesser Horseshoe bats were recorded to be utilizing the convent as a day and night roost for smaller numbers of bats.

# 6.0 Mitigation and Enhancement

The works are likely to impact roosting sites for bats, specifically the destruction of three "transitional" bat roosts for Soprano Pipistrelle, the destruction of a night and day roost for a small number of Lesser Horseshoe bats and also add additional light burden to the northeast of the convent which could interfere with mitigation measures proposed for an adjacent application[15].

The following mitigation measures are recommended.

## 6.1 Application of the Precautionary Principle

This report should be taken as evidence of presence, and not evidence of absence. Agreed Method Statements should ensure contractors are aware of steps to take if bats are observed on site. These should ensure that works are stopped within 10m of the identified roost and the client and a suitably qualified ecologist consulted.

## 6.2 Destruction of Three Transitional Soprano Pipistrelle Roosts

Licence for the destruction of three transitional Soprano Pipistrelle roosts.

As the works will require the destruction of three transitional bat roosts a licence will be required from the NPWS prior to the commencement of works.

Preinstallation of two woodcrete boxes.

Prior to works to destroy the roost sites; two woodcrete boxes, suitable for Soprano Pipistrelle bat to roost in shall be installed no lower than 4m in height from the ground on trees or

[15] Doherty Environmental Consultants (DEC) LTD (2024). Bat Survey Report – Westport.

buildings immediately adjacent to the roost sites for a minimum of one month prior to works commencing. These boxes should remain in-situ post development.

These boxes shall be selected, sited and installed under the supervision of a Suitable Qualified Ecologist. Care should be taken to ensure that flyways do not face into cluttered environments. One box shall be installed facing northwest adjacent to the roost identified by the chimney stack in 2024. Furthermore one box shall be installed to the southeast of the site in the vicinity of the two roosts identified in the current report.

An example of woodcrete boxes that offer suitability for a Soprano Pipistrelle roosting are outlined in Appendix E.

Destruction of three transitional bat roosts.

Guidelines[16] suggest that smaller roosts of more common species such as Soprano Pipistrelle[17], are considered as have **low** conservation significance. However given there are three transitional roosts hosting at least 10 Soprano Pipistrelles it is considered that the convent has **low** to **moderate** conservation significance. On that basis the guidelines recommend 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.*"

Given the extent of the development and it is considered that mitigation on a like for like basis is provided, i.e. integrated features to allow for roosting Soprano Pipistrelle. Given the transitional use observed in bat roosting behaviour it is also considered that mitigation should ensure that the availability of roost aspects are maintained.

The SQE shall undertake a toolbox talk with the contractor that will be undertaking a 'soft strip' of identified roost features. A soft strip is the careful, manual removal of relevant potential roosting features by the relevant contractor under the supervision of the SQE.

The SQE shall also be engaged, with reasonable notice of works, to be on call during the remainder of the works. If roosting or hibernating bats are found the Ecological Clerk of Works (ECoW) shall be notified to promptly visit and place any discovered bat into one of the *preinstalled* woodcrete bat boxes. The National Parks and Wildlife Service and Mayo County Council shall be informed.

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16 Marnell, F., Kelleher, C & Mullen, E. (2022). Bat Mitigation Guidelines for Ireland. Version 2 Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland

17 Reason, P.F. and Wray, S. (2025). UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. Version 1.2. Chartered Institute of Ecology and Environmental Management, Ampfield.

## 6.2 Destruction of day and night roost for small number of Lesser Horseshoe bats

Licence for the destruction day and night roosts for Lesser Horseshoe bats.

As the works will require the destruction of a day and night bat roosts for a small number of Lesser Horseshoe bats a licence will be required from the NPWS prior to the commencement of works.

Destruction of Lesser Horseshoe bat roosts.

Guidelines[18] suggest that smaller roosts of rarer such as Lesser Horseshoe bats[19], are considered as have **moderate** conservation significance. On that basis the guidelines recommend the following:

"*Timing constraints. More or less like-for-like replacement. Bats not to be left without a roost and must be given time to find the replacement. Monitoring for 2 years preferred.*"

On that basis it has been agreed that works to the roosts shall be undertaken after 1st November 2026 when the Lesser Horseshoe bats are hibernating. A hibernacula adjacent to the site has already been preinstalled as a result of a previous application and the works associated with DEC 2024. A new roof void to replace the existing day roost shall be redesigned into the proposals to create a new segregated feature with permanent external access and shall be in place by 15th March 2027. This is discussed further in 5.3.2.

## 6.3 Like for like roost replacement

### 6.3.1 Soprano Pipistrelle

As the works will involve the removal of three features found to support a 10 cumulative Soprano Pipistrelle transitional roosts three substitute sites shall be included within the design

[18] Marnell, F., Kelleher, C & Mullen, E. (2022). Bat Mitigation Guidelines for Ireland. Version 2 Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland

[19] Reason, P.F. and Wray, S. (2025). UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. Version 1.2. Chartered Institute of Ecology and Environmental Management, Ampfield.

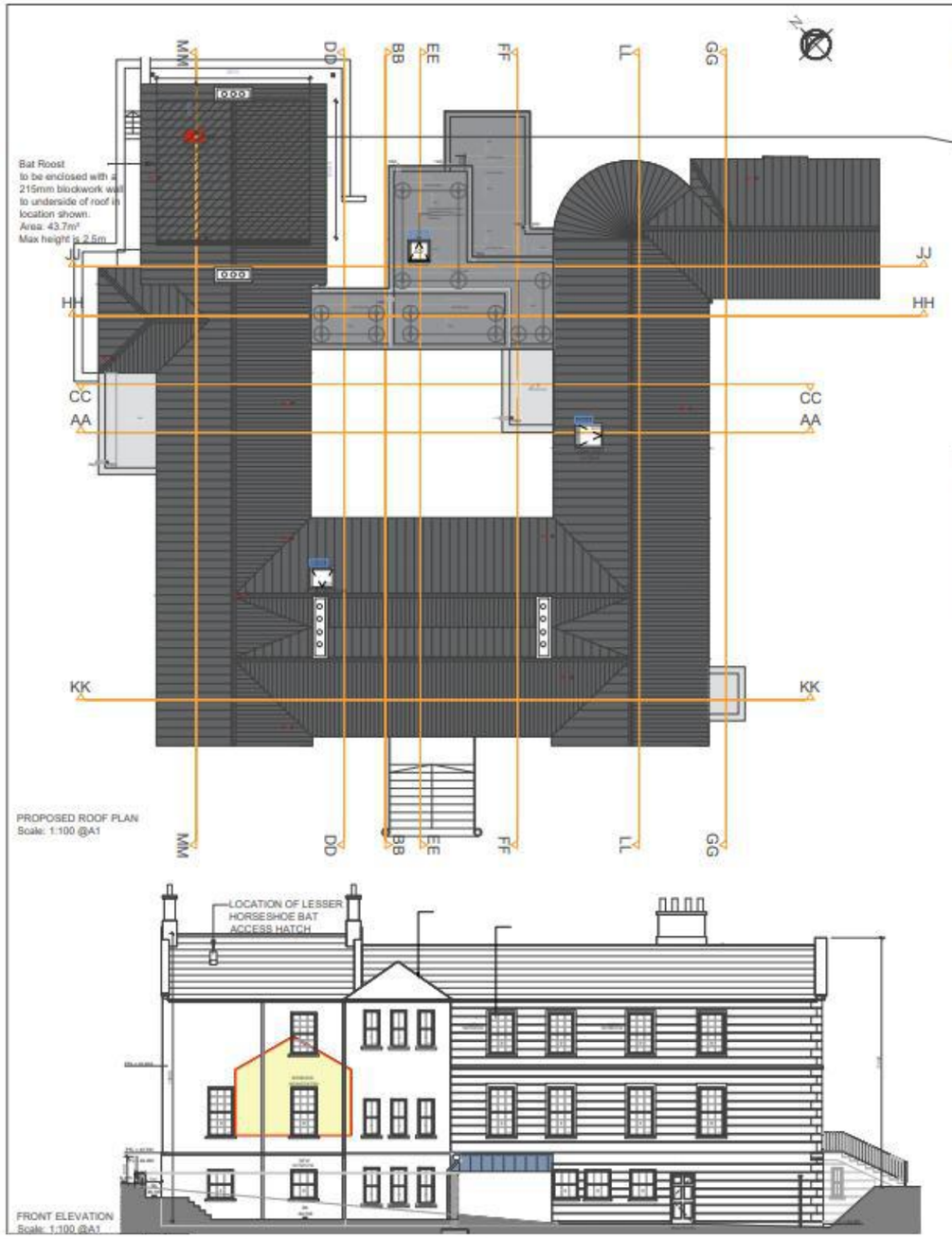
of the proposed development on a like for like basis (i.e. to have similar permanency as the feature to be demolished).

As such it is recommended that a minimum of three integrated bat bricks will be installed into the proposed building no lower than 4m from the ground to provide an alternative roosting space suitable for Soprano Pipistrelle. These should supplement the woodcrete bat box installed prior to works aforementioned. Examples of integrated features appropriate for Soprano Pipistrelle can be found in Appendix E. Recommended locations for these integrated bricks should be consistent with roost locations illustrated in Figure 6 and this should be displayed in relevant planning documents. One of these integrated roosting bricks shall be installed facing northwest adjacent to the roost identified by the chimney stack in 2024. Furthermore two bricks shall be installed to the southeast of the site in the vicinity of the two roosts identified in the current report.

### 6.3.2 Lesser Horseshoe bats

The day roost occurs in a roof void to the northwest of the building with access to the roost likely from a broken window in the near vicinity of the site.

The proposals aim to integrate the existing roost site within a segregated bat loft within the development that shall occur in the same location as the current roosting site. Access shall also be from a similar location as the broken window currently in use via an access tunnel that shall be built into the roof and lead to the internal segregated roof void. The void and access tunnel shall be in keeping with best practice guidance[1819] and will offer dimensions of 2.6m (h) x 6.4m (w) and 6.9m (l). See Figure 8 for further details.



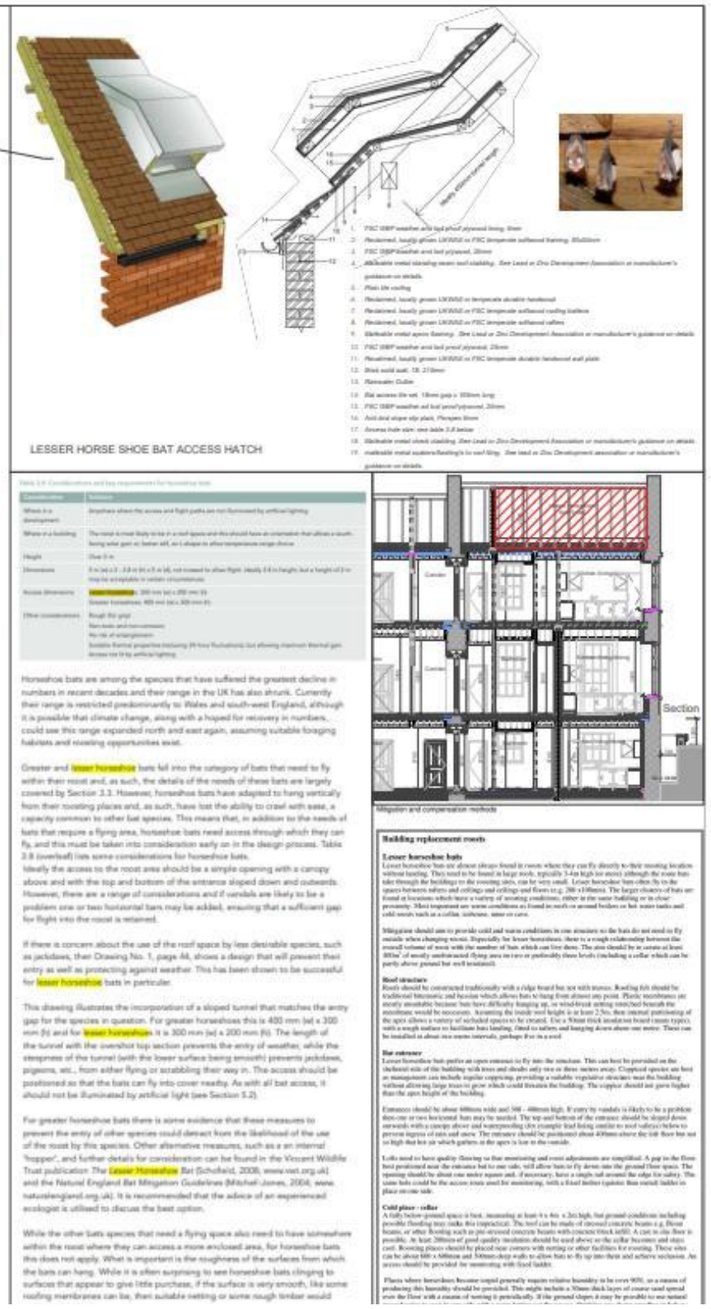







*Figure 8 Proposed new roost for Lesser Horseshoe bat within roof void.*

## 6.4 Management of Light Pollution

Overview

Lesser horseshoe bats appear to be using a dark flight corridor to the north of the convent as a dark flyway to access woodland to the north and east of the site. Use of roosting sites by Soprano Pipistrelle can also be negatively impacted by light pollution. It is recommended that dark space to the north of the convent and around replacement roosts should be maintained where possible to protect the proposed hibernacula for lesser horseshoe bats. Light pollution in this area should be kept to no more than 0.5lux where possible.

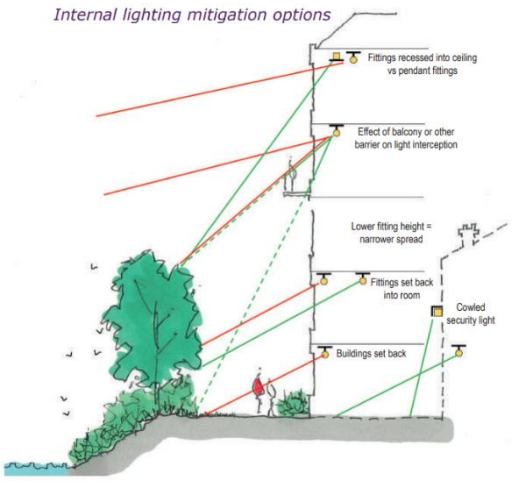



*Figure 9 Example options to mitigate light spill from internal lighting (as outlined in BCT and ILP (2018)*

Greenway

Lighting along the greenway in combination with the proposed development poses a risk to the proposed hibernacula and is funnelling Lesser Horseshoe bats into a dark flyway that is likely to be degraded as a result of increased light pollution from the proposed development. This could result in a decreased effectiveness of the proposed hibernacula. To cater for the development consultations should take place with the adjacent greenway manager and a SQE to negate where possible any lighting in the vicinity of the proposed hibernacula to create more dark zones (<0.5 lux) in the vicinity of the hibernacula.

Lighting Plan

A lighting plan shall be developed to ensure that light spill on the new landscaping to the north of the convent is maintained at no more than 0.5 lux. This lighting plan shall also ensure that any lighting in the vicinity of the proposed woodcrete boxes and integrated bricks is kept to less than 1 lux. The lighting plan shall ensure that light spill from the adjacent greenway is included. The lighting plan shall assess locations of proposed internal fittings and shall be in keeping with best practice guidance[20] to maintain the dark areas in the vicinity of the proposed hibernacula and the proposed Soprano Pipistrelle roosting bricks and boxes.

[20] Bat Conservation Trust & Institute of Lighting Professionals (ILP) 2018. Guidance Note 8: Bats and artificial lighting in the UK. Bats and the Built Environment Series.

Landscaping

Where possible landscaping should be included to help mitigate light spill into the adjacent area, in particular to the north and east of the convent. The development should seek to use native evergreens or other certain tree and shrubs known to have benefit for bats.

| Trees and Shrubs | | |
|---|---|---|
| **Common Name** | **Scientific Name** | **Benefits to bats** |
| Bird Cherry | *Prunus padus* | Flowers attract insects; dense foliage offers shelter. |
| Blackthorn | *Prunus spinosa* | Dense thickets offer shelter; flowers are a food source for insects. |
| Crab Apple | *Malus sylvestris* | Flowers provide nectar; supports insect populations. |
| Field Maple | *Acer campestre* | Attracts aphids and other insects; offers shelter and foraging opportunities. |
| Goat Willow | *Salix caprea* | Early spring flowers provide nectar for insects; attracts moths and other prey species for bats. |
| Hawthorn | *Crataegus monogyna* | Dense branches offer shelter; flowers attract insects, serving as a food source. |
| Hazel | *Corylus avellana* | Provides nuts for wildlife; supports insect populations beneficial to bats. |
| Oak | *Quercus sp* | Supports a high diversity of insects, providing ample foraging opportunities; mature trees offer cavities for roosting. |
| Silver Birch | *Betula pendula* | Supports a variety of insects; peeling bark can provide roosting sites. |
| Wild Cherry | *Prunus avium* | Blossoms attract insects; mature trees can develop cavities suitable for roosting. |
| **Herbaceous Plants and Climbers** | | |
| **Common Name** | **Scientific Name** | **Benefits to bats** |
| Evening Primrose | *Oenothera biennis* | Night-scented flowers attract moths and other nocturnal insects. |
| Honesty | *Lunaria annua* | Flowers attract insects; seed pods provide interest and shelter. |
| Honeysuckle | *Lonicera periclymenum* | Strong evening fragrance attracts insects; provides nectar sources. |
| Jasmine | *Jasminum officinale* | Night-time fragrance attracts a host of insects. |
| Lavender | *Lavandula spp.* | Attracts a variety of insects, especially in the evening. |
| Lungwort | *Pulmonaria spp.* | Provides nectar for insects; supports early spring foraging. |

| Trees and Shrubs | | |
|---|---|---|
| Marsh Marigold | *Caltha palustris* | Thrives in damp areas; flowers attract insects. |
| Primrose | *Primula vulgaris* | Early spring flowers support early-emerging insects. |
| Wild Garlic | *Allium ursinum* | Flowers attract a variety of insects, providing a reliable food source during its bloom in spring. |

*Table 9. Examples of tree and shrub species beneficial for bats*

# 7.0 Derogation Application

## 7.1 Test 1: Reason for Derogation

Regulation 54(2) (a)–(e) states that a derogation licence may be granted for any of the reasons listed (a) to (e). In this case, reason (c) as listed below, applies:

*(c) In the interest 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.*

The site comprises a disused and partially derelict former convent building. Its proposed development will deliver social and economic benefits at a local and regional level, including contribution to housing supply, regeneration of a brownfield peri-urban site, and the beneficial reuse of a redundant heritage building. These objectives are consistent with national planning policy objectives relating to urban regeneration and housing delivery, and with the zoning objectives of the relevant Mayo County Development Plan.

The proposed works require the demolition or alteration of features forming three transitional bat roosts for Soprano Pipistrelle and a day and night roost for a small number of Lesser Horseshoe bats. Without a derogation, these works could not be carried out lawfully. The reason selected (c) is appropriate as the development serves a long-term public interest in housing and regeneration rather than a purely private or commercial interest. The applicant's architect (MRL Architects) has prepared the development proposal to fulfil planning requirements and to remediate a semi-derelict structure that is no longer in beneficial use. Contrarily the current nature of the derelict buildings are likely to result in further significant decline and compound the already substantial trespassing and use of dangerous structures with potential health and safety consequences for trespassers.

## 7.2 Test 2: Absence of Alternative Solutions

### 7.2.1 Alternative 1 – Do-Nothing

The site is a disused, partially derelict former convent in a peri-urban area. Non-development of the site would fail to achieve the public interest objectives of the proposed development (housing delivery, brownfield regeneration) and would not address the ongoing deterioration of the built structure. In addition significant trespassing issues and antisocial behaviour occurs on site, the building itself has substantial health and safety risk to trespassers. This alternative is not satisfactory.

### 7.2.2 Alternative 2 – Redesign to avoid all bat roost features

The three Soprano Pipistrelle roost features are located in the roof fabric of the main convent building, specifically at roof tiles (southeast aspect), roof eaves (eastern aspect), and the roof area adjacent the chimney stack (northwest aspect, confirmed in 2024 survey). In addition the Lesser Horseshoe roosts occur within the roof void and a small landing in a part of the building that are integral to the building envelope. Any refurbishment or works to the roof — which are necessary to make the building weathertight and habitable — would inevitably affect these features and restrict access or egress of the building by Lesser Horseshoe bats utilising the property as a roost. It is not physically feasible to exclude these roost areas from the scope of works.

### 7.2.3 Alternative 3 – Retain roost features in place within refurbished building

Regarding the Soprano Pipistrelle roost sites the engineering requirements of the proposed works (roof refurbishment, structural repairs) are not compatible with retention of the specific crevice features in which the bats have been recorded roosting. The physical nature of the roost features (loose tiles, open eaves sections) is inconsistent with the thermal performance requirements of a habitable building. Retention in situ is not a satisfactory alternative.

The Lesser Horseshoe bat roost is within the roof void of the building. The current feature in use by the bats has been repurposed within the design proposals and will create a segregated void of suitable size and dimensions to allow integration within the proposals with an accompanying access route through the roof. It is therefore proposed that the this alternative is feasible for the provision of a day and night roost of a small number of Lesser Horseshoe bats.

## 7.3 Test 3: Impact of derogation on conservation status

Three transition roosts totalling use by ten individuals (non breeding) of Soprano Pipistrelle, will be lost as a result of the proposed development. However, following the implementation of mitigation as described above, no significant effects resulting from the loss of roosting, foraging or commuting habitat, direct mortality or disturbance, are anticipated. According to the latest Article 17 reporting (2025), soprano pipistrelle are in favourable conservation status and the granting of this derogation licence will not result in any effect on that status as there will be no reduction in roosting resource and no significant disturbance.

Considering the Lesser Horseshoe roosts works shall be timed to be completed in the area around the roof void between 1st November 2026 and 15th March 2027. These works shall complete the roof repair but also shall result in the integration of a segregated version of the current roofing void withing the structure with provision of the requisite access and egress flyway. Given that Lesser Horseshoe bats would be expected to be leaving their summer roosts to hibernate around this period it is anticipated that these works will not result in an impact on Lesser Horseshoe bats. As the proposed measures will also seek to be completed in time for the summer period when the Lesser Horseshoe bats would be expected to accommodate the site again then the species will not be left without a suitable roost site in the area. Furthermore it is considered that the proposed access panel to the roof void is immediately adjacent to the broken window that currently offers access and that the roof void will be retained within the proposals) which should increase likelihood of adoption by the species, thereby minimising impact further.

# 8.0 Conclusion

## 8.1 Report Findings

The survey recorded three transitional bat roosts hosting ten Soprano Pipistrelles which is considered to have low to moderate conservation significance. Therefore it is considered that the proposed works could have an impact on roosting Soprano Pipistrelle.

In addition a day and night roost for a small number of Lesser Horseshoe with accompanying high levels of Lesser Horseshoe activity was observed, specifically to the north of the site in the vicinity of the proposed hibernacula that is required as mitigation for a neighbouring application. The proposed development has the potential to degrade this area as a consequence of light-spill and will require mitigation.

As a consequence the following mitigation measures are proposed:

- A licence will be required from the NPWS prior to the commencement of works.
- Instruct SQE to operate as an Ecological Clerk of Works for the project;
- Ensure relevant Method Statements for works recognise risk of finding bats on site and outline steps to take should bats be found during works;
- Preinstallation of two woodcrete boxes selected and sited in appropriate areas and suitable for roosting Soprano Pipistrelle;
- Selection and appropriate siting of two integrated bat bricks for Soprano Pipistrelle;
- Creation of a segregated roof void with flyway access that integrates the current Lesser Horseshoe day roost (see Figure 8);
- A strategy to minimise and negate lighting pollution in the area to include:
    - Consult with landowners to minimise light pollution in adjacent greenway to create more dark areas in the vicinity of the hibernacula proposed in previous reports[21] ;
    - Creation of a lighting plan to minimise and protect dark corridors in use by the Lesser Horseshoe (no more than 0.5 lux) and proposed integrated Soprano Pipistrelle roosts (no more than 1 lux);
- Creation of a landscaping plan that will contribute to the protection of dark corridors in use by the Lesser Horseshoe; and
- Include native plant species in soft landscaping that have benefit for foraging and commuting bats.

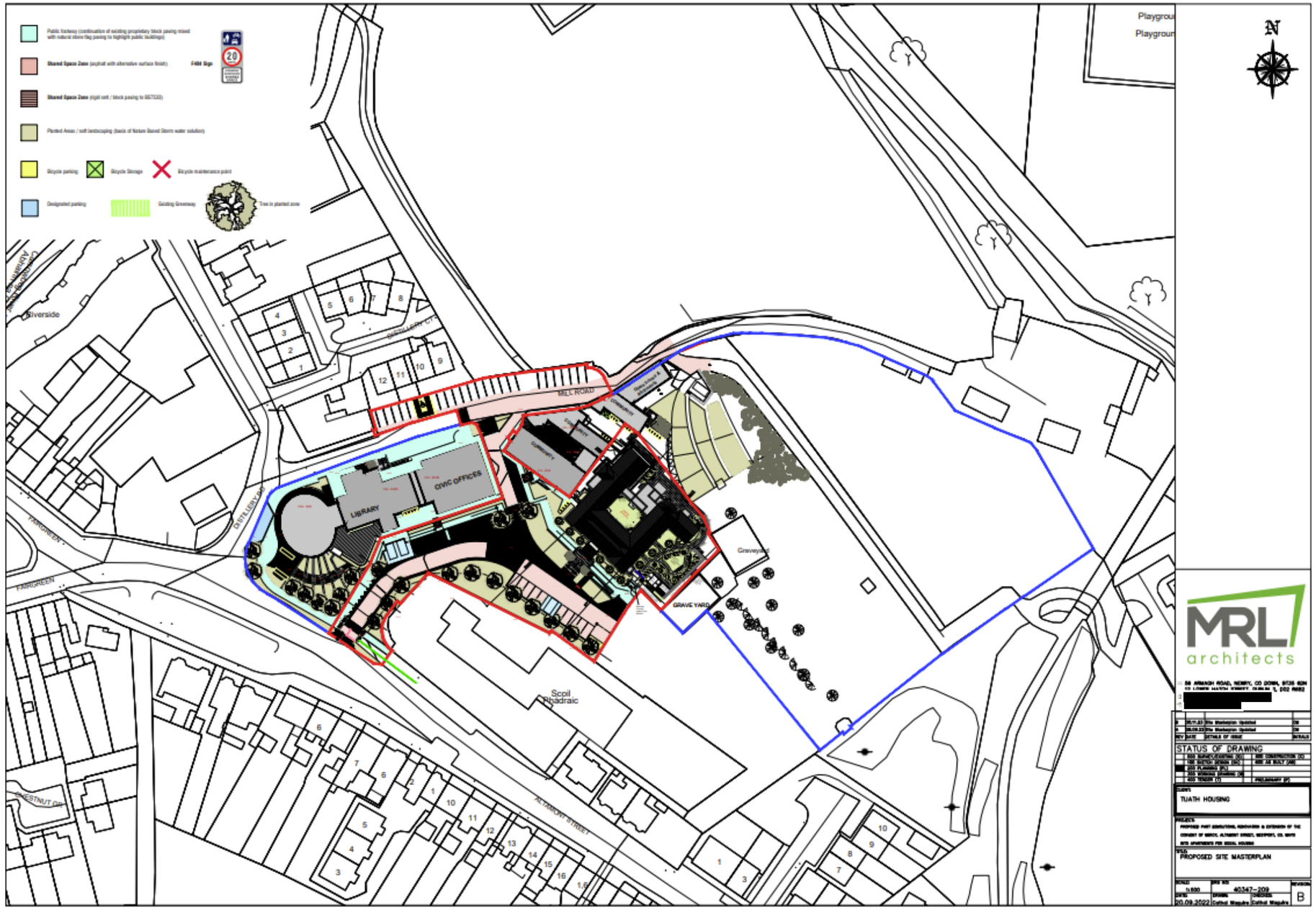
[21] Doherty Environmental Consultants (DEC) LTD (2024). Bat Survey Report – Westport.

## 8.2 Derogation Licence

A derogation licence is requested for the destruction of three Soprano Pipistrelle roosts totalling ten individual Soprano Pipistrelle bats. It is considered that there is overriding public interest, comprising of a reduction in anti-social behaviour, reduction of risk to trespassers and that the proposals can be sufficiently mitigated to remove any risk to individual Soprano Pipistrelles or their conservation status.

Furthermore it is requested that this derogation allows for the modification of an existing day roost for Lesser Horseshoe bats between 1st November 2026 and 15th March 2027. The modifications aim to integrate this roosting feature into the proposed development that shall retain roost access, provision and characteristics in a near immediate location to the existing roost site.

# Appendix A – Site Masterplan


Public footway (continuation of existing proprietary block paving mixed with natural stone flag paving to highlight public buildings)
Shared Space Zone (asphalt with alternative surface finish)
F404 Sign
Shared Space Zone (rigid cell / block paving to BS7533)
Planted Areas / soft landscaping (basis of Nature Based Storm water solution)
Bicycle parking
Bicycle Storage
Bicycle maintenance point
Designated parking
Existing Greenway
Tree in planted zone
Playgroun
Playgroun
N
Riverside
GREENHORN CT
MILL ROAD
LIBRARY
CIVIC OFFICES
COMMUNITY
GRAVE YARD
Graveyard
FAIRGREEN
Scoil Bhadraic
CHESTNUT GR
ACTARONT STREET
MRL architects
STATUS OF DRAWING
TUATH HOUSING
PROPOSED SITE MASTERPLAN
40347-209
B
20.09.2022

# Appendix B – Doherty (2024)

# Bat Roost Survey

# Westport Convent

# Westport, Co. Mayo

DEC Ltd.

October 2024

**Bat Survey Report**

**Westport Convent**

**Westport, Co. Mayo**

| Document Stage | Document Version | Prepared by |
|---|---|---|
| Final | 1 | Pat Doherty MSc, MCIEEM |







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## 1.0 INTRODUCTION

Doherty Environmental Consultants (DEC) Ltd. has been commissioned by Jennings O'Donovan & Partners Ltd. on behalf of Mayo County Council to undertake a bat survey of structures at the Westport Convent site, Westport, Co. Mayo. The location of the convent site and the structures that were the subject of the bat surveys are shown on Figure 1.1.

## 1.1 BAT SURVEY: AIMS & OBJECTIVES

The primary aim of the bat surveys completed at the Westport Convent site was to establish the presence or absence of roosting bats at the structures on site and where present to identify the species of bats; estimate the number of bats roosting at the structures on site; and determine the bat roost type supported by the structure. Roost types have been defined by Collins et al. (2016) and are outlined in Table 1.1 below.

**Table 1.1: Bat Roost Type**

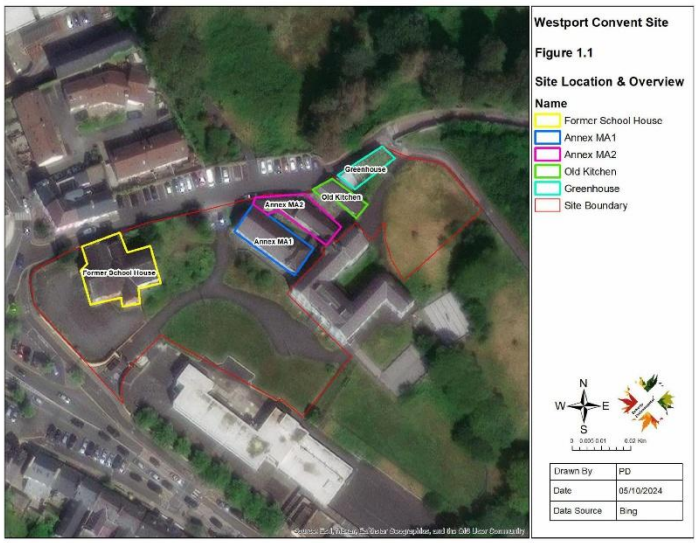
| Roost Type | Definition |
|---|---|
| Day roost | A place where individual bats or small groups of males, rest or shelter in the daytime but are rarely found by night in the summer. |
| Night roost | A place where bats rest or shelter in the night but are rarely found in the day. May be used by a single bat on occasion or it could be used regularly by the whole colony. |
| Feeding roost | A place where individual bats or a few bats rest or feed during the night but are rarely present by day. |
| Transitional/occasional roost | A place used by a few individuals or occasionally small groups for generally short periods of time on waking from hibernation or in the period prior to hibernation. |
| Swarming site | Where large numbers of males and females gather. Appear to be important mating sites. |

| | |
|---|---|
| Mating site | Where mating takes place. |
| Maternity roost | Where female bats give birth and raise their young to independence. |
| Hibernation roost | Where bats are found, either individually or in groups in the winter months. They have a constant cool temperature and humidity. |
| Satellite roost | An alternative roost found in close proximity to the main nursery colony and is used by a few individuals throughout the breeding season. |

## 1.2 LEGISLATIVE CONTEXT

All bat species occurring in Ireland are protected under both European and National legislation. All species are European Protected Species, listed on *Annex IV* of the *EU Habitats Directive (92/43/EEC)*, transposed into Irish law under the *European Communities (Birds and Natural Habitats) Regulations 2011* as amended. Regulation 51 of the *European Communities (Birds and Natural Habitats) Regulations 2011* as amended afford protection to all bat species. Lesser horseshoe (*Rhinolophus hipposideros*) bats are afforded special protection under the Habitats Directive as an *Annex II* listed species. At the national level all species are protected under the *Wildlife Acts, as amended (1976 and 2000)*.

Section 54 of the *European Communities (Birds and Natural Habitats) Regulations 2011* as amended provides the legislative basis whereby a derogation licence can be granted by the Minister that can derogated the requirement to comply with Regulation 51. Such a derogation licence can only be granted by the Minister under strict circumstances. These circumstances are set out in Regulation 54A(2)(a) – (e).


Greenhouse
Old Kitchen
Annex MA2
Annex MA1
Former School House
Westport Convent Site
Figure 1.1
Site Location & Overview
Name
Former School House
Annex MA1
Annex MA2
Old Kitchen
Greenhouse
Site Boundary
N
W
E
S
Drawn By PD
Date 05/10/2024
Data Source Bing

### 1.3 CONSERVATION STATUS

A total of 9 species of bats are resident in Ireland. The overall conservation status of each of these species, as assigned by the NPWS (2019) is as follows:

- Lesser horseshoe bats is inadequate and deteriorating;
- Common pipistrelle is favourable and improving
- Soprano pipistrelle is favourable and improving
- Nathusius pipistrelle is unknown
- Natterer's bat is favourable and stable
- Daubenton's bat is favourable and improving
- Whiskered bat is favourable and stable
- Brown long-eared bat is favourable and improving
- Leisler's bat is favourable and improving.

## 2.0 METHODOLOGY

### 2.1 DESK STUDY

A search of the National Biodiversity Data Centre (NBDC) for records of bat species previously identified within and in the vicinity of Westport Convent was completed in May 2024 and again in October 2024. All records held by the NBDC for an area of search within and surrounding the convent were downloaded from the NBDC. The extent of this area of search is shown on Figure 2.1.

**Figure 2.1: Area of Search for Bat Species**



In addition to the above a review of the online BCI Batlas was completed. A review of the bat landscape classification was also completed. A landscape conservation guide for Irish bat species was published in 2011 (Lundy et al., 2011). This study identified core areas of favourable habitat for bat species in Ireland. The publication was reviewed to identify the landscape suitability classification of the convent site for bat species.

## 2.2 BAT ROOST POTENTIAL OF STRUCTURES

Marnell et al. (2022) provide guidance on assessing the potential for structures to support roosting bats. This guidance identifies a variety of factors that increase or decrease the potential of a structure to function as a bat roost. These factors are outlined in Table 2.1 below.

**Table 2.1: Factors Affecting the Probability of a building being used by bats in the summer, as described by Marnell et al. (2022)**

| | |
|---|---|
| Increase Potential | Disused or little used; largely undisturbed<br>Large roof void with unobstructed flying spaces<br>Large dimension roof timbers with cracks, joints and holes<br>Uneven roof covering with gaps, though not too draughty<br>Entrances that bats can fly in through<br>Hanging tiles or wood cladding, especially on south-facing walls<br>Rural setting<br>Close to woodland and/or water<br>Pre-20th century or early 20th century construction<br>Roof warmed by the sun |
| Decrease Potential | Urban setting or highly urbanised area with few feeding places<br>Small or cluttered roof void<br>Heavily disturbed<br>Modern construction with few gaps around soffits or eaves<br>Prefabricated with steel sheet materials<br>Active industrial premises<br>Roof shaded from the sun |

## 2.3 DAYTIME INSPECTION

A daytime inspection survey for the presence of roosting bats was completed at the site was completed during January 2024 by MKO consulting ecologist. The results of the January daytime inspections are set out in MKO (2024).

Daytime inspections of all accessible areas were completed prior to the commencement of each of the spring, summer and autumn surveys during the 2024 bat activity season. The methods used for the daytime surveys followed those set out by MKO, 2024.

## 2.4 ROOST SURVEYS

### *2.4.1 Manual Roost Survey*

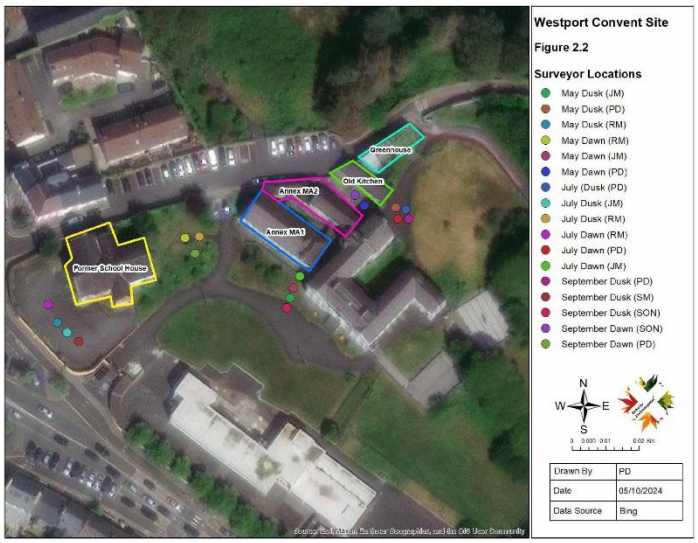
Three rounds of roost emergence and dawn re-entry surveys were completed at the site during the 2024 bat activity season. The surveys were completed on the 14th/15th May and 16th/17th July and 17th/18th September 2024.

During the May, June and July surveys 3 no. surveyors surveyed the site. Surveyors comprised Mr Pat Doherty (PD) (DEC Ltd.); Ms Ruth Minogue (RM) (MEC Ltd.); & Mr Jim Minogue (JM) (MEC Ltd.). The surveyors during September comprised PD, Sarah Moore (Jennings O'Donovan) and Siobhan O'Neill (SON).

All surveyors are experienced bat surveyors with a minimum of 5 years experience undertaking bat surveys. Pat, Ruth and Jim have all held licences for bats issued under the Wildlife Act and the Birds and Natural Habitats Regulations. All 5 surveyors hold degrees in Environmental and Ecological Sciences.

The position that each of the surveyors took up during the dusk emergence time and dawn re-entry time are shown on Figure 2.2. The surveys focused on the old kitchen and Annex 2 from the northeast facing elevation of the Annex 2; the southwest facing elevation of Annex 2; the east, northeast elevation of the former school building and the west, southwest facing elevation of the former school building.

The dusk surveys commenced 15 minutes prior to sunset and continued for 2 hours after sunset. The pre-dawn surveys commenced 90 minutes before sunrise and terminated 15 minutes after sunrise.


Greenhouse
Old Kitchen
Annex MA2
Annex MA1
Former School House
Westport Convent Site
Figure 2.2
Surveyor Locations
May Dusk (JM)
May Dusk (PD)
May Dusk (RM)
May Dawn (RM)
May Dawn (JM)
May Dawn (PD)
July (Dusk (PD)
July Dusk (JM)
July Dusk (RM)
July Dawn (RM)
July Dawn (PD)
July Dawn (JM)
September Dusk (PD)
September Dusk (SM)
September Dusk (SON)
September Dawn (SON)
September Dawn (PD)
N
W
E
S
Drawn By PD
Date 05/10/2024
Data Source Bing

A constant watch of the buildings on site was undertaken during this time, with the high-powered LED torch lights focused on the potential access/egress points to the sttructures. The Echometer Touch bat detector was set to record throughout the emergence surveys. Conditions during the emergence and pre-dawn re-entry surveys were recorded.

Following the completion of the roost surveys foraging activity survey was completed by walking a transect within the convent site and well as along the greenway southwest to the Carrowbeg River. The foraging activity survey aimed to identify the species of bats foraging within the vicinity of the project site.

### *2.4.2 Static Detector Roost Survey*

Two no. Wildlife Acoustics SM Mini Detector was installed within the first floor of the former school building. MP1 was installed at the southwestern classroom whilst the other, MP2 was installed in the northeastern classroom. The detectors were installed on the 16th July 2024. MP1 was left in-situ to monitor bat activity within the first floor of the school from the 16th July until the 14th August. MP2 was collected the following morning after installation on the 17th July. Both detectors were mounted vertically at a height of 2m. MP1 was positioned along the southwest facing cable wall with the microphone directed into the classroom to monitor for activity. MP2 was positioned at the northeastern gable wall with the microphone directed into the classroom.

## 2.5 CONSERVATION EVALUATION

A guideline for establishing the conservation significance of bat roosts is provided by Marnell et al. (2022). Figure 20 of the Marnell et al. (2022) sets out a sliding scale of conservation significance of bat roosts from low to high. For the purposes of this assessment this scale is used to determine the conservation significance of structures at the site in terms of their roost status.

## 3.0 PROJECT DESCRIPTION

### 3.1 OVERVIEW

This project, which entails the development of a new Public Library, Civic Offices, Community Facilities, and Public Realm/Civic Spaces, will be located entirely within the existing grounds of the historic former Sisters of Mercy Convent site on Altamont Street, in the centre of Westport town, County Mayo.

***The Proposal:***

The Regeneration of the former Convent site, will deliver new and improved public spaces for Westport, creating an iconic and welcoming focal point for community and civic activities and services. Specific outputs are:

- Restoration/extension of a derelict former primary school for a new Public Library and co-located Municipal District Offices.
- Restoration of decaying laundry buildings and Meals-on-Wheels to provide a new Community Groups Hub
- Creation of new landscaped Public Realm Area and official Western Greenway trailhead

### 3.2 DESIGN STATEMENT

- To create a library building that has a striking visual presence in Westport as an important public building, open, inviting and enjoyable to be inside, or gather outside.
- To create a multifunctional library that can also host important community and civic events, exhibitions and performances as well as all the latest library functions.
- To create a strong Civic centre by combining the Library with new Westport Civic Offices.
- To renovate, repurpose and extend the disused 1874 former St Patricks School building.

This is a unique opportunity for Westport.

- The benefits for the community include:
- Provision of much needed new and improved facilities and services in one central location
- Transformation of a highly visible town centre area of dereliction and decay
- A more accessible and user-friendly centre for a broad mix of civic, social, and community functions
- Greater community cohesion by creating a focal point for the entire community
- Facilities for a range of community groups
- Securing the future of Protected Structures of 'Regional' importance through restoration and appropriate re-use
- Increased footfall and vibrancy in an area in need of regeneration
- A catalyst for further investment in the area
- Cleaner environment through reduced car usage, more sustainable and efficient buildings

Former St Patricks (Industrial) School;

The design aims to restore internal and external building elements as much as is possible given the condition of the existing building. The high-ceilinged classrooms, lit by large beautifully proportioned Georgian windows on all sides, are perfect for library use. The exposed Queenpost trusses on the upper level present exciting architectural forms and superb spatial quality embellished with a glazed screen of significant proportions.

New Library Building (Oval extension); The design aims to create an open inviting public 'gateway' building that addresses all approach streets in its vicinity and to provide an entrance landing and navigation space. The glazed entrance elevation is directly on axis with Mill Street. A modern colonnaded façade will be the focal point in the long vista from 'The Clock', the heart of Westport town, and along Mill Street. The oval form clearly stands alone away from the former school building, connecting to it on one level only. Therefore, the School building stands alone in its original form.

Accessibility: The Oval will form the main entrance atrium from the public street and will be the principle navigation space providing vertical access to the main Library Floor (Ground Floor) via, a sweeping stair (designed to ambulant standards) and a passenger lift. Sanitary accommodation will be provided at various locations on each floor throughout. Two other passenger lifts will be provided – one in the link with the Civic Office and another in the existing north stairwell of the former schoolhouse.

Public Realm Area and Library Readers Garden:

The site is located close to the rear entrance of the town secondary schools and is close to the primary school. This is a popular gathering place for students before and after school and at lunch time.

The creation of a large green open area, with seat height steps to address natural level changes, will form an attractive meeting and civic space directly associated with the Library function. The design also proposes a south facing 'Reading Garden'. A combination of civic open space with the civic function of the library is designed to enhance the role of the Library as one of Westport's most important civic facilities, available for everybody to enjoy.

General Services, Mechanical & Electrical Design (Patrick McCaul Environmental Consulting Engineers)

The Library & Civic Office Buildings will be mechanically ventilated utilising a hybrid system:

- Ventilation - Mechanical extract (stale air) and fresh air delivery.
- Heating and Cooling – air conditioning with Air to Air Heat Pumps.

Natural ventilation will remain a part of the works specification. For example, high level openable glazing sections in the Oval Library extension building will be programmed to operate at night-time to provide night cooling thus reducing energy load on air-conditioning.

Community Annex Buildings:

- Ventilation - mechanicl extract from wet rooms and Meals-on-Wheels kitchen







- Heating and cooling – air conditioning with Air-to-Air Heat Pumps.

Basement Plenum

The extant basement of the former school, and directly beneath the main Library wall, will be constructed as a 'Plenum'. A pressurised void space to deliver fresh air through floor grilles in the ground floor. This shall achieve the requisite airtightness in accordance with the BSRIA(UK) Guide for Floor Plenum Airtightness (BG 65/2016). The maximum permissible leakage rate is 0.7 l/(s.m2)@50 Pa as verified by testing.

Cleanliness The presence of dirt and debris can present a fire risk, and can affect the efficiency and correct operation of the system and the health of building occupants. Sealers such as floor and wall paint are specified, but it is the Contractor's responsibility to maintain the cleanliness of the plenum up until commissioning, induction and occupation of the building.

Building performance

The Library and Civic Office have achieved a provisional non-domestic BER rating of A2 (with solar PV) and Community Buildings received a provisional rating of A3.

The primary heating and cooling source is electric, with heat pumps located externally. Energy use will be off-set with the provision of Photo-voltaic panels located on the pitched roof of the Civic Office and flat roof of the Oval.

Provision (infrastructure) will be made under this contract for A.V in the Oval, the Creative Technologies Space, meetings rooms and the large Library Meeting Room with Fit-out by others. The sensory room will be enabled with multiple power and data to facilitate fit-out post construction contract. The Library will be served with a multitude of power and data points with public desks served via. floor boxes.







## 4.0 RESULTS

### 4.1 DESKTOP ASSESSMENT

The NBDC does not hold any historical records for bats within the area of search shown on Figure 2.1 above.

The review of the bat landscapes suitability mapping shows that the convent site lies within an area that has been classified at moderate-high habitat suitability for all bat species.

### 4.2 SITE OVERVIEW

The project site is located towards the east of Westport. Land cover to the south and west is dominated by buildings and artificial surfaces. Grassland, hedgerows and treelines along with scrub occur to the north of the convent site. The start of the Great Western Greenway is located to the northeast of the site. A vegetation corridor occurs along the northside of the walking route. High lux lighting is provided along this section of the greenway and the luminaires remain lit throughout the night, resulting in high levels of illumination along and adjacent to the route.

High value bat foraging habitat occurs to the east of the convent site along the Carrowbeg River and at Colonels Wood. There is connectivity in the form of linear corridors between the convent site and these areas of high value bat foraging habitat. The presence of lighting particularly along the former railway bridge crossing may detract from the quality of these corridors.

### 4.3 DAYTIME INSPECTION SURVEYS

Bat roost inspection surveys were completed by MKO consultant ecologist during January 2024 to assess potential use of the structures on site to be used by bats and provide recommendations for future survey work and mitigations.

As part of the inspection survey a daylight inspection of all accessible spaces involved in the proposed works was carried out. All buildings inspected are shown in Figure 1.2. The aim was to determine the presence of roosting bats, as well as compile information on actual and potential access points and

roosting locations. The searches comprised detailed inspections of the exteriors and interiors of the structures to look for evidence of bat use, including live and dead specimens, droppings, feeding remains, urine splashes, fur oil staining and noises.

The exterior of each of the buildings was inspected from ground level. The search included the ground, accessible windowsills, walls, eaves, roof slates, gutters, downspouts and the roof ridge. A systematic search of all accessible interiors was also undertaken. Searches were carried out with the aid of binoculars, torches, and a ladder and focused on walls, floors, roof beams, windowsills, lintels, shelves, tops of large equipment and furniture, etc. An endoscope was utilised during the inspection to search in gaps and cracks of walls, wood panelling and stonework.

A walkover of the study area was carried out on the same day. The landscape features on the site were visually assessed for potential use as bat roosting habitats and commuting/foraging habitats using a protocol set out in BCT Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd ed.) (Collins, 2016). The aim of the survey was to identify suitable habitats within the site to guide further survey efforts. No tree were found on site and none were assessed.

During the inspection survey multiple potential access points including tile gaps throughout the roof, within the eaves and via the flashing along gutters. Most of the windows on the house have been broken and would allow bats to access the house to roost internally.

The two-storey main building includes a separate attic space and separate basement spaces. The attic was not accessible for the survey as the ceiling entrance point was located too high for safe ladder access. The two main floors of the school, the boiler room and the basement coal store were surveyed in full.

Within the ground floor of the former school building evidence of bats was observed underneath the stairwell 01, classroom 01 and the female WC's. Accumulation of recent droppings and evidence of feeding remains were found in each of these rooms. Further evidence of bats in the form of feeding remains were discovered on stairwell/ The holes on the walls of the stairwell were examined with an endoscope and could potentially support roosting bats. However, no evidence of roosting was found. There were also recent scattered droppings discovered on the windowsills of both windows on the stairwell. Droppings were also observed during the activity daytime surveys along with prey remains.







On the first floor bat droppings were observed in 2 of the five classrooms at the building.

The former school has a basement that consists of temporary hangar coal store, boiler room and void space. During the January inspection survey at least 5 no. lesser horseshoe bats were found to be hibernating within the basement. Given the confirmed status of the basement as a roost site, the basement was not entered or surveyed during the activity season surveys between May and September.

The second structure located on the site, labelled MA1 is a two storey building that is currently used as a charity shop. No evidence of bat roosting or bat activity was recorded within the first or second floor of this building during the inspection survey. The attic of this structure was also inspected and no evidence of its use as a roost site by bats was recorded. During the activity season surveys this building was again inspected. No evidence indicating the presence of bats was observed in the ground and first floor. Access to the attic was not gained during the activity season due to locked doors and an absence of a key to the rooms where the hatch is located.

The third structure on site (labelled MA2) is a two-storey building with two separate attic spaces. No evidence of bat activity was recorded in the ground floor. In the western store room of this building a small number of bat droppings were found within one of the cupboards, indicating likely opportunistic use. On the first-floor bat droppings were observed in the bathroom, on the floor next to the toilet and in the sink. These first floor rooms have high daytime light levels. The attic space to this building was not inspected for health and safety concerns and no evidence of bats was observed from a visual inspection of the attic from the hatch location. Access to MA2 was not gained during the activity season surveys due to the absence of keys providing access to the building.

The fourth structure on site is the old kitchen. Scattered droppings were found on a shelf in the storeroom of the kitchen. The storeroom is dark and presents a hole in the ceiling which leads into a separate attic space, not connected to the attic above the old kitchen. No access into this space was possible for inspection. Furniture and peeling plaster cover coming off the wall were checked for evidence of bats. A hole was cut into the northern attic space to assess its potential for roosting; however, this provided no access into the main space above the main room, which was not inspected. The old kitchen was again inspected during the activity season surveys. Dropping were noted on surfaces within the kitchen. No droppings or evidence of bats were noted under the hole providing

access to the northern attic space. Based on the findings of the inspection survey it was concluded that the main floor space is likely to be utilised opportunistically by bats.

The fifth and final structure on site is the greenhouse. The structure is derelict, only the wooden structure remains with few pieces of glass on the top. No evidence indicating the use of this structure by bats was found.

In addition to these structures the masonry stone wall along Mill Road was also inspected for the signs of bat roosting and no evidence of their presence or use of the wall for roosting was found.

Each of the structures were evaluated for their potential to function as bat roosts and these summarised as follows:

Former school evaluated to be of High Roost Potential

Annex 1 (MA1) evaluated to be of high Roost Potential

Annex 2 (MA2) evaluated to be of Negligible to high Roost Potential

The Old Kitchen evaluated to be of High Roost Potential

Green House evaluated to be of Negligible to Low Potential

## 4.4 BAT ROOST SURVEY RESULTS

### *4.4.1 14th/15th May 2024*

Conditions during the roost emergence survey were ideal for bat surveys and activity. Temperatures were 17°C at sunset and remained warm throughout the survey. Conditions were calm and dry throughout. Cloud cover was medium at OKTA 6.

No bats were recorded emerging from either the former school, Annex 1, Annex 2 or the old kitchen during the roost emergence surveys completed on the 14th May.







Seven no. Soprano pipistrelle were observed emerging from the northwest facing elevation of the main convent building adjacent to the site during the emergence survey. The bats emerged for the area of the roof adjacent to the chimney stack.

Two no. lesser horseshoe bats bat passes were detected and 1 no. lesser horseshoe bats was observed flying along the north-eastern elevation of the main convent building.

Overall bat activity was low during the emergence survey.

During the pre-dawn survey no swarming by bats was identified and very low levels of activity were recorded. No bats were observed entering the 4 no. structures that were targeted during the surveys. No lesser horseshoe bat activity was detected or observed during the pre-dawn survey.

#### *4.4.2 16th July 2024*

Conditions during the roost emergence survey were ideal for bat surveys and activity. Temperatures were 17°C at sunset and remained at this temperature throughout the survey. Conditions were calm and dry throughout. Cloud cover was medium at OKTA 4.

No bats were recorded emerging from either the former school, Annex 1, Annex 2 or the old kitchen during the roost emergence surveys completed on the 17th July.

Bat activity during the emergence survey was very low with only small numbers of Soprano pipistrelle, Common pipistrelle and Leisler's bat passes being visually recorded and detected flying generally through the site between the former school and the Annex buildings and to the east of the old kitchen.

#### *4.4.3 17th September 2024*

Conditions during the roost emergence survey were ideal for bat surveys and activity. Temperatures were 14°C at sunset and remained at this temperature throughout the survey. Conditions were calm and dry throughout. Cloud cover was medium at OKTA 6.

No bats were recorded emerging from school building during the roost emergence surveys completed on the 17th September.

Bat activity during the emergence survey was very low with only small numbers of Soprano pipistrelle pipistrelle bat passes being visually recorded and detected. Two lesser horseshoe bats were visually observed flying low along the northeast facing side of the convent building, similar to the May 2024 emergence survey. Later 1 no. lesser horseshoe bat was observed flying from near the northeast elevation of the main convent building in an easterly direction through the scrub and the grassland habitat at the northeast of the convent site.

Bat activity during the pre-dawn re-entry survey was low with only small numbers of Common pipistrelle passes (6 in total), Natterer's bat passes (3 in total), Leisler's bat (2 in total) and lesser horseshoe bats (1 in total) being detected during the survey. None of these bats were observed swarming at structures on site or entering these structures.

## 4.5 STATIC BAT DETECTOR MONITORING

### *4.5.1 MP1 – Eastern Classroom, First Floor, School House*

MP1 was positioned in the eastern classroom on the first floor of the school on the night of the 17th July and was set to record bat activity from 30 minutes prior to sunrise until 30 minutes after sunrise on the 18th July. No bat activity was recorded by detector MP1 whilst recording within the school building on the night of the 17th July.

### *4.5.2 MP2 – Western Classroom, First Floor, School House*

The results of monitoring within the first floor of the school building are set out in Table 3.1 below. A total of 30 nights of monitoring was completed in the school between July and August. A total of 55 bat passes were recorded during this time within the school building. The activity was dominated by Soprano pipistrelle. Brown long-eared bat, Leisler's bat, lesser horseshoe bat and Common pipistrelle were also recorded at very low levels.

The results indicate the presence of low activity within the building during the summer months.

**Table 4.1: Results of Monitoring at MP2**

| Date | MYOSPP | NYCLEI | PIPNAT | PIPPIP | PIPPYG | PLEAUR | RHIHIP |
|---|---|---|---|---|---|---|---|

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 20240716 | 0 | 1 | 0 | 1 | 3 | 0 | 0 |
| 20240717 | 0 | 1 | 0 | 0 | 5 | 0 | 0 |
| 20240718 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 20240719 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20240720 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20240721 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20240722 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20240723 | 0 | 0 | 0 | 0 | 4 | 0 | 0 |
| 20240724 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20240725 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20240726 | 0 | 0 | 0 | 0 | 2 | 0 | 0 |
| 20240727 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 20240728 | 0 | 0 | 0 | 0 | 2 | 0 | 0 |
| 20240729 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 20240730 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 20240731 | 0 | 0 | 0 | 0 | 3 | 0 | 0 |
| 20240801 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 20240802 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20240803 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 20240804 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 20240805 | 0 | 0 | 0 | 0 | 2 | 1 | 0 |
| 20240806 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20240807 | 0 | 0 | 0 | 0 | 2 | 2 | 0 |
| 20240808 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 20240809 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 20240810 | 0 | 0 | 0 | 0 | 7 | 4 | 0 |
| 20240811 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20240812 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 20240813 | 0 | 0 | 0 | 0 | 2 | 1 | 1 |
| 20240814 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 4 | 0 | 1 | 37 | 10 | 3 |

### 4.6 SUMMAY OF BAT SURVEY RESULT

The results of the inspection surveys and roost emergence surveys indicate that:

- Lesser horseshoe bats are hibernating in the basement of the former school house and using this as a hibernation site.
- Lesser horseshoe bats are using the school house as a autumn swarming and mating site and are also likely to use the basement as a roost site during autumn period.
- The number of lesser horseshoe bats observed during the winter season inspection survey and the autumn surveys were low with 5 no. being observed during winter and 4 no. being observed during autumn.
- No bats were observed using any of the structures on site as summer maternity roosts or day/night roosts.
- Bat enter the structures to opportunistically forage, particularly Soprano pipistrelle and to a lesser extent brown long-eared bat.

### 4.7 CONSERVATION SIGNIFICANCE

Based on the findings of the surveys completed at the project site, as detailed and summarised in Section 3 above, and in accordance with Figure 20 of Marnell et al. (2022) the roost status of the convent structures that are the subject of this assessment are representative of structures supporting a "hibernation site for small numbers of common/rarer species". Based on the sliding scale of conservation significance outlined by Marnell et al (2022) on their Figure 20, the former school is representative of a structure of Moderate Conservation Significance. Based on the findings of the surveys completed for the other structure, these are considered to be best representative of a roost that supports "feeding perches for common/rarer species", with no evidence being gathered indicating that these structures support roosting bats. ". Based on the sliding scale of conservation significance outlined by Marnell et al (2022) Annex 1, Annex 2 and the old kitchen are representative of structures of Low Conservation Significance.

## 5.0 IMPACT ASSESSMENT

The potential impact of the refurbishment of the structures at the convent site will have the potential to result in disturbance to the identified hibernation site and mating site at the former school building.

The assessment of impact focuses on the potential for the proposed project to result in disturbance to these two bat roost features.

Marnell et al. (2022) provide a guide for ranking the scale of impact to bat populations that can arise as a result of the loss or disturbance of bat roosts. The guidelines do provides a scale of impact with respect to minor hibernation roosts. Based on these guidelines and the scale of impacts described therein the destruction or isolation caused by fragmentation of the hibernation roost at the former school building will represent an impact of high significance; the partial destruction or modification of the hibernation roost or any post-development interference will represent an impact of medium significance. Temporary disturbance to the hibernation roost outside the hibernation season and/or temporary destruction and then reinstatement outside the hibernation season will represent a low impact.

The destruction of a mating site, as observed in the former school building will represent an impact of moderate significance, whilst other activities such as modified management, temporary disturbance, post-development interference of a mating site will represent an impact of low significance.

## 6.0 MITIGATION MEASURES

### 6.1 HIBERNATION ROOST

Figure 20 of the Marnell et al. (2022) guidelines set out mitigation measures required for impacts to structures that function as a "hibernation site for small no. of common/rarer species". The mitigation measures for such impacts set out the following requirement:

"Timing constraints. More or less like-for-like replacement. Bats not to be left without a roost and must be given time to find the replacement. Monitoring for 2 years preferred".

In order to satisfy this recommendation, the following measures will be implemented for any works proposed for the former school building:

Works will be completed at the existing basement during the winter of 2025. Works will commence on site during January 2025. The works to be completed between January and mi-February will be the

establishment of the new hibernaculum at the northeast of the site and roof works to the former school. No works will be undertaken at the former school basement until the new hibernaculum is in place and completed. Works at the basement are scheduled to commence from late-January/mid-February 2025, after the new hibernaculum is in place.

It will not be possible to provide roosting opportunities to the main basement area that will contain the plenum as no external access can be provided as part of its use as a plenum. In order to provide a suitable opportunity for hibernation roosting in the vicinity of the existing basement, in addition to the new hibernaculum to be provided as described in Section 6.1.1 below, access to the water tank room will be provided. The location of the water tank room is shown in green colour on Figure 6.1 below. Lesser horseshoe bat flight access to the water tank room will be maintained through the provision of a 300mm wide by 200mm high, situated a minimum height of 1.4m above ground. Where feasible the ceiling of the water tank room will be cladded in original ceiling material to be taken from the existing basement hibernaculum. Otherwise rough timber sarking will be provided for the ceiling as a substrate from which bats can roost. The water tank room will be a sealed unlit room that will provide a suitable dark environment for hibernating bats. The access point to the water tank room will be kept free of night time lighting.

During the operation phase of the buildings access to the water tank room shall be restricted during the hibernating season encompassing the months of October to end of March. Access to the water tank room during these months will only be permitted on an emergency basis and in consultation with the local NPWS ranger.

No alterations to the water tank room shall be made post refurbishment works in the absence of a derogation licence permitting such works,

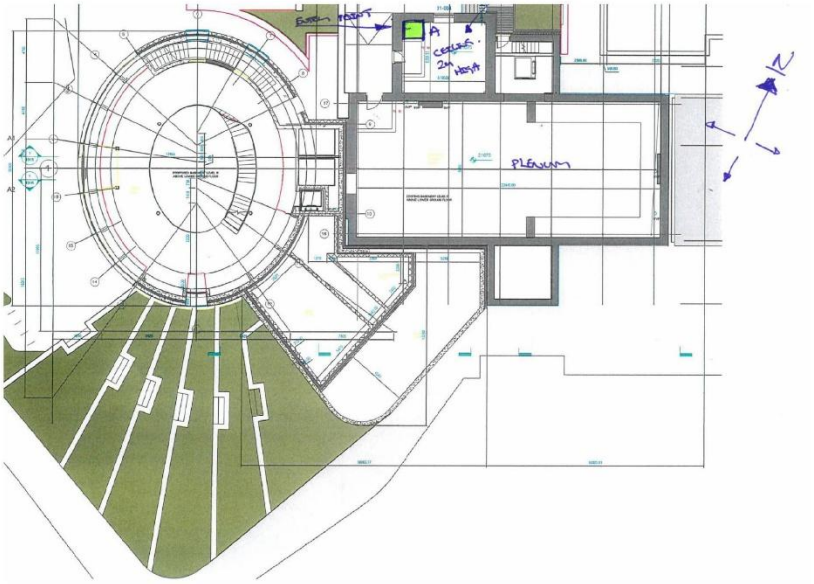



**Figure 6.1: View of Water Tank Room Location (in Green) and Access Point (Labelled)**

### *6.1.1 New Hibernaculum*

In addition to the above provisions for the basement, as referenced above a new hibernaculum will be provided within the site. The hibernaculum will be located at the northwest of the site, an indicatibve location is shown on Figure 6.2, with the final location to be agreed on site between Mayo County Council and local NPWS staff. At the indicative location and immediate surrounding area ground levels slope from northeast to southwest. The design of the new bat house will follow the design of the Flahive lesser horseshoe bat hibernaculum installed by the NPWS at Glengarriff, Co. Cork. Plate 6.1 to 6.3 provide images of the Flahive hibernaculum (source: Schofield et al., 2022).

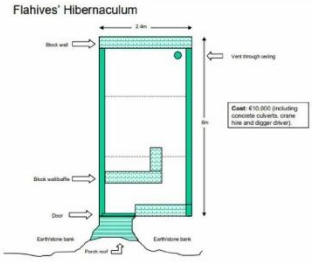



**Plate 6.1: Plan view of Flahive Hibernaculum**



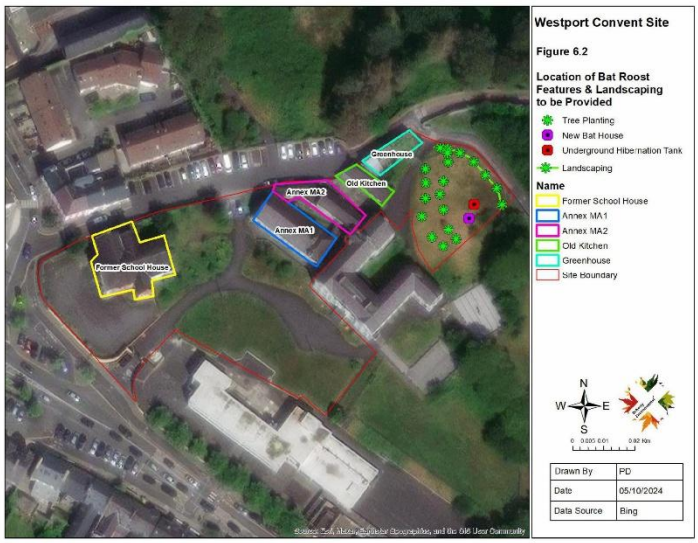
**Plate 6.2: View of Flahive Hibernaculum under construction**



**Plate 6.3:View of Finished Door Entrance to Flahive Hibernaculum**

The new hibernaculum design will consist of a buried, pre-cast concrete septic tank. Figure 6.3 below provided a sketch diagram of the new hibernaculum at the northeast area of the site.

Timber floor joists and floor-boards removed as part of the school stripping out works will be used to clad the underside of the tank lid so that a suitable substrate is provided to support roosting lesser horseshoe bats. Minimal internal dimensions of the hibernaculum will be min. 2.5m high x 2.5m wide x 2m deep. Opening shall be 300 x 200mm and will be positioned at a minimum height of 1.4m above exterior ground level. The entrance opening will be screened with baffles on the interior to maintain dark condition within the hibernaculum. Exclusion zone to be erected around the box with an 868 mesh fence. The indicative location of the new hibernaculum as shown on Figure 6.1will be kept free from any new artificial night time lighting.




**Westport Convent Site**

**Figure 6.2**

**Location of Bat Roost Features & Landscaping to be Provided**

- Tree Planting
- New Bat House
- Underground Hibernation Tank
- Landscaping

**Name**

- Former School House
- Annex MA1
- Annex MA2
- Old Kitchen
- Greenhouse
- Site Boundary

N
W E
S

0 0.005 0.01 0.02 Km

| | |
|---|---|
| Drawn By | PD |
| Date | 05/10/2024 |
| Data Source | Bing |

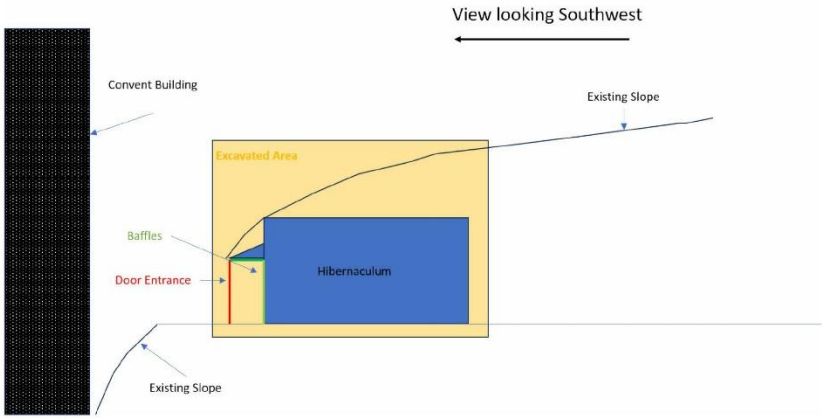



**Figure 6.2: Sketch diagram of the new hibernaculum at the northeast of the site to the northeast of the main convent building**

### *6.1.2 Pre-Works Survey & Translocation*

Prior to the commencement of works at the site in January 2025 a survey of the basement will be completed. The survey will be completed by NPWS rangers and will record the number of lesser horseshoe bats present at the basement. The survey will be completed during December 2024.

An additional survey of the basement will be completed during the first half of February 2025, prior to the commencement of basement works in mid-February 2025, and subsequent to the completion of the new hibernaculum at the northwest of the site. This survey will again be completed by NPWS, in conjunction with Mayo County Council and DEC Ltd. In the event that hibernating bats are present, they will be translocated, under licence to the new hibernaculum. Bats will be captured in a mist net bag, transferred to a ventillated, light-proof container and immediately moved to the new hibernaculum.







## 6.2 MATERNITY/MATING ROOST

Figure 20 of the Marnell et al. (2022) guidelines does not provide a specific list of mitigation measures for the mating sites. It is further noted that given lesser horseshoe bats social and mating activity was observed within the ground floor class rooms of the former school building, in the context of the proposed development it will not be possible to retain this indoor space for such lesser horseshoe bats within the building.

In order to provide suitable space for such activity as well as enhancing the potential for the former school house to function as a mating roost site for lesser horseshoe bats, it is proposed to provide a loft space within the building that will provide suitable roost habitat for lesser horseshoe bats during the maternity season and well as the mating season. The loft space will be provided at the south facing aspect of the library building. The loft space shall have a void height of 2.8m and a void length and width of 5m. An insulated hot box will be provided within the loft space under the south facing roof. Access to the loft shall be provided by a dormer access point in the roof approximately 30cm wide by 20cm high.

In addition to the provision of the loft roost the following roosting habitat shall also be provided as part of the site refurbishment works:

- Erection of wall mounted bat boxes for crevice dwelling bats.
- Tree mounted bat boxes.
- Erection of a free-standing bat house using existing timbers and slate roofing material. Timbers can be reused floor joists taken from the extant building for example. This will be designed as per the specifications for a Cathedine Night Roost published by the Vincent Wildlife Trust (available at https://www.vincentwildlife.ie/wp-content/uploads/2016/01/lesser-horseshoe-night-roost-design.pdf). The Cathedine Night Roost will be placed in the northeast corner of the site, where it will be sheltered by boundary vegetation to be provided as part of the site landscaping. The indicative location of where the new bat house will be provided is shown on Figure 6.2. This is to be situated at a location of the site where no new artificial lighting will be provided and at a location where new landscaping will be provided to tie in with existing woodland habitat at the northeastern boundary of the site. As such the position will be located

adjacent to an existing vegetated corridor and at a location where lesser horseshoe bats were observed during field surveys in flight, moving east from this area.

- Maintenance of the new bat house will be managed by Mayo County Council. Maintenance works to the new bat house will only be undertaken during the winter months between December and February inclusive.
- As an additional requirement to this design baffles will be placed on the four no. square posts below the floor of the roost. The baffles will be provided to prevent predators accessing the roost.
- Incorporation of bat tubes into external leaf of cavity wall.
- Formation of crevices in existing stone walls where remedial work is planned i.e. lean-to wall.

## 6.3 LIGHTING & LANDSCAPING

All public lighting will be designed in accordance with the Institute of Lighting Professionals guidance document Bats and Artificial Lighting at Night Guidance Note 08/23.

Particular attention will be given to the lighting design to ensure that no lighting is cast any of the roost structures to be retained/provided on site.

Landscaping will be provided at the northwest of the site that will aim to provide lighting screening from public lighting to be provided as part of the site renovation and also to provide screening from the existing lighting along the greenway to the east. Figure 6.1 shows the proposed landscaping to be provided. It is also recommended that remedial cowling of the luminaires along the greenway to the east of the site is undertaken to minimise lighting spill from these luminaires into the site and surrounding area.

## 6.4 DEROGATION LICENCE & REQUIRED MEASURES

Given that former school building has been confirmed to function as hibernation site for lesser horseshoe bats and a mating site for lesser horseshoe bats any works to be undertaken at this

building can only be progressed under a Derogation Licence issued under Regulation 54 of the *European Communities (Birds and Natural Habitats) Regulations 2011* as amended.

## 7.0 CONCLUSION

The former school building has been identified as hibernation site for a small number of lesser horseshoe bats. The Annex 1, Annex 2 and the old kitchen have not been identified as a bat roost.

The conservation significance of hibernation roost is Moderate as per Marnell et al. (2022).

Any refurbishment of the basement will have the potential to result in the loss of the roost and disturbance to a small number of lesser horseshoe bats.

Mitigation measures have been set out to avoid the loss of the roost and with the implementation of these measures the hibernation roost will continue to be provided.

Any works to be completed at the former school building will be required to be done so under a Derogation Licence issued under Regulation 54 of the *European Communities (Birds and Natural Habitats) Regulations 2011* as amended. This report and the mitigation measures set out therein are provided to demonstrate that proposed refurbishment of the basement will not be detrimental to the maintenance of the local lesser horseshoe bat population at favourable conservation status. It is intended that this report will be provided in support of an application to the Minister for a derogation licence under Regulation 54 of the *European Communities (Birds and Natural Habitats) Regulations 2011* as amended.

**REFERENCE**

Marnell, F., Kelleher, C & Mullen, E. (2022). Bat Mitigation Guidelines for Ireland. Version 2 Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland.

NPWS (2019). The Status of EU Protected Habitats and Species in Ireland. Volume 3: Species Assessments. Unpublished NPWS report. Edited by: Deirdre Lynn and Fionnuala O'Neill.

Schofield , H., Alagaili, A., Dubourg Savage, M.-J, Kervyn, T., Marnell, F., Rodrigues, L. (2022). A review of purpose-built roosts for European Bats. Eurobats.

**APPENDIX 1 :PLATES**



Client: Mayo County Council
Project Title: Westport Convent
Document Title: Bat Survey Report
Date: October 2024
Document Issue: Final



Plate 1: View of former school building from the northeast



Plate 2: View of north facing gable of convent, Annex 2 and old kitchen from left to right on image



Plate 3: View of bright street lighting along greenway to north of convent site



Plate 4: View of sloping ground to the north of the convent building



Plate 5: View of west to old kitchen and delapidated glass house



Plate 6: Internal view of upper floor of former school house with bat detector installed. High daytime light levels

# Appendix C – Survey Perspectives





# Field Study 1

| Survey Location (Observer) | Photograph |
|---|---|
| CMcK |  |
| RB |  |

# Field Study 1

| | |
|---|---|
| AW |  |
| VCT |  |

# Field Study 1

| | |
|---|---|
| LC |  |
| GS |  |

# Field Study 2

| Survey Location (Observer) | Photograph |
|---|---|
| AW |  |
| GS |  |

# Field Study 2

| | |
|---|---|
| VCT |  |
| LC |  |

## Field Study 2

| | |
|---|---|
| CMcK |  |

## Field Study 3

| Survey Location (Observer) | Photograph |
|---|---|
| Given that field study three was a more activity type survey where bat flight patterns were followed observation points are not available. | |

# Appendix D – Summary of bat records from survey

| Field Survey 1 – 29th August 2025 | | | |
|---|---|---|---|
| Time | Common Name | Probability | Description |
| **CMcK** | | | |
| 21:11:59 | Soprano Pipistrelle | 0.93 | echolocation |
| 21:23:32 | Soprano Pipistrelle | 0.87 | echolocation |
| 21:24:44 | Common Pipistrelle | 0.99 | echolocation |
| **RB** | | | |
| 20:40:54 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:57:09 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:07:24 | Common Pipistrelle | 0.99 | echolocation |
| 21:49:00 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:52:46 | Soprano Pipistrelle | 0.89 | echolocation |
| 21:52:48 | Soprano Pipistrelle | 0.67 | echolocation |
| 21:52:50 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:52:52 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:53:08 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:57:22 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:57:25 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:57:29 | Soprano Pipistrelle | 0.87 | echolocation |
| 21:58:56 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:58:57 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:59:15 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:59:20 | Soprano Pipistrelle | 0.97 | echolocation |
| 22:00:01 | Soprano Pipistrelle | 0.99 | echolocation |
| 22:00:01 | Soprano Pipistrelle | 0.91 | social |
| 22:00:06 | Common Pipistrelle | 0.87 | echolocation |
| 22:00:06 | Soprano Pipistrelle | 0.98 | echolocation |
| 22:00:06 | Soprano Pipistrelle | 0.74 | social |
| **AW** | | | |
| 20:55:45 | Soprano Pipistrelle | 0.9 | echolocation |
| 20:56:19 | Soprano Pipistrelle | 0.91 | echolocation |
| 20:57:08 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:07:25 | Common Pipistrelle | 0.99 | echolocation |
| 21:49:52 | Soprano Pipistrelle | 0.9 | echolocation |
| 21:58:15 | Soprano Pipistrelle | 0.92 | echolocation |

| Field Survey 1 – 29th August 2025 | | | |
|---|---|---|---|
| 21:58:21 | Soprano Pipistrelle | 0.72 | echolocation |
| 21:58:21 | Soprano Pipistrelle | 0.89 | social |
| 21:58:30 | Soprano Pipistrelle | 0.96 | echolocation |
| 21:58:30 | Soprano Pipistrelle | 0.92 | social |
| 21:58:35 | Soprano Pipistrelle | 0.67 | echolocation |
| 21:58:55 | Soprano Pipistrelle | 0.97 | echolocation |
| 21:59:12 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:59:17 | Soprano Pipistrelle | 0.98 | echolocation |
| 22:00:04 | Common Pipistrelle | 0.7 | echolocation |
| 22:00:04 | Soprano Pipistrelle | 0.98 | echolocation |
| 22:00:04 | Soprano Pipistrelle | 0.71 | social |
| 22:01:22 | Soprano Pipistrelle | 0.8 | echolocation |
| VCT | | | |
| 21:11:52 | Soprano Pipistrelle | 0.97 | echolocation |
| 21:11:52 | Soprano Pipistrelle | 0.99 | feeding buzz |
| 21:11:58 | Soprano Pipistrelle | 0.96 | echolocation |
| 21:51:35 | Soprano Pipistrelle | 0.95 | echolocation |
| 21:51:40 | Soprano Pipistrelle | 0.96 | echolocation |
| 21:51:40 | Soprano Pipistrelle | 0.96 | feeding buzz |
| 21:51:46 | Soprano Pipistrelle | 0.88 | echolocation |
| 21:51:46 | Soprano Pipistrelle | 0.88 | social |
| 21:51:51 | Soprano Pipistrelle | 0.94 | echolocation |
| 21:51:51 | Soprano Pipistrelle | 0.83 | social |
| 21:51:56 | Soprano Pipistrelle | 0.97 | echolocation |
| 21:51:56 | Soprano Pipistrelle | 0.83 | social |
| 21:52:01 | Soprano Pipistrelle | 0.72 | echolocation |
| 21:52:01 | Soprano Pipistrelle | 0.85 | social |
| 21:52:06 | Soprano Pipistrelle | 0.9 | echolocation |
| 21:52:06 | Soprano Pipistrelle | 0.83 | social |
| 21:52:11 | Soprano Pipistrelle | 0.93 | social |
| 21:52:17 | Soprano Pipistrelle | 0.94 | echolocation |
| 21:52:17 | Soprano Pipistrelle | 0.87 | social |
| 21:52:22 | Common Pipistrelle | 0.94 | echolocation |

| Field Survey 1 – 29th August 2025 | | | |
|---|---|---|---|
| 21:52:27 | Soprano Pipistrelle | 0.89 | echolocation |
| 21:52:32 | Soprano Pipistrelle | 0.89 | echolocation |
| 21:52:32 | Soprano Pipistrelle | 0.81 | social |
| 21:52:38 | Soprano Pipistrelle | 0.89 | echolocation |
| 21:52:38 | Soprano Pipistrelle | 0.87 | social |
| 21:52:44 | Soprano Pipistrelle | 0.79 | echolocation |
| 21:52:44 | Soprano Pipistrelle | 0.77 | social |
| 21:52:49 | Soprano Pipistrelle | 0.81 | echolocation |
| 21:52:49 | Soprano Pipistrelle | 0.83 | social |
| 21:52:55 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:53:00 | Soprano Pipistrelle | 0.91 | echolocation |
| 21:53:00 | Soprano Pipistrelle | 0.81 | social |
| 21:53:05 | Soprano Pipistrelle | 0.76 | echolocation |
| 21:53:05 | Soprano Pipistrelle | 0.86 | social |
| 21:53:35 | Soprano Pipistrelle | 0.96 | echolocation |
| 21:53:41 | Soprano Pipistrelle | 0.87 | echolocation |
| 21:53:41 | Soprano Pipistrelle | 0.86 | social |
| 21:53:46 | Soprano Pipistrelle | 0.94 | echolocation |
| 21:53:46 | Soprano Pipistrelle | 0.87 | social |
| 21:53:57 | Soprano Pipistrelle | 0.95 | echolocation |
| 21:54:02 | Soprano Pipistrelle | 0.84 | echolocation |
| 21:54:07 | Soprano Pipistrelle | 0.88 | echolocation |
| 21:54:18 | Soprano Pipistrelle | 0.84 | echolocation |
| 21:54:23 | Soprano Pipistrelle | 0.68 | echolocation |
| 21:54:28 | Soprano Pipistrelle | 0.95 | echolocation |
| 21:54:28 | Soprano Pipistrelle | 0.86 | social |
| 21:54:43 | Soprano Pipistrelle | 0.95 | echolocation |
| 21:54:43 | Soprano Pipistrelle | 0.74 | social |
| 21:54:49 | Soprano Pipistrelle | 0.89 | echolocation |
| 21:54:49 | Soprano Pipistrelle | 0.77 | social |
| 21:54:54 | Soprano Pipistrelle | 0.94 | echolocation |
| 21:54:59 | Soprano Pipistrelle | 0.82 | echolocation |
| 21:55:05 | Soprano Pipistrelle | 0.95 | echolocation |

| Field Survey 1 – 29th August 2025 | | | |
|---|---|---|---|
| 21:55:05 | Soprano Pipistrelle | 0.77 | social |
| 21:55:10 | Soprano Pipistrelle | 0.94 | echolocation |
| 21:55:15 | Soprano Pipistrelle | 0.96 | echolocation |
| 21:55:15 | Soprano Pipistrelle | 0.77 | social |
| 21:55:21 | Soprano Pipistrelle | 0.93 | echolocation |
| 21:55:26 | Soprano Pipistrelle | 0.87 | social |
| 21:55:57 | Soprano Pipistrelle | 0.95 | echolocation |
| 21:55:57 | Soprano Pipistrelle | 0.81 | social |
| 21:56:03 | Soprano Pipistrelle | 0.94 | echolocation |
| 21:56:08 | Soprano Pipistrelle | 0.66 | echolocation |
| 21:56:08 | Soprano Pipistrelle | 0.75 | social |
| 21:56:14 | Soprano Pipistrelle | 0.91 | echolocation |
| 21:56:14 | Soprano Pipistrelle | 0.83 | social |
| 21:56:19 | Soprano Pipistrelle | 0.96 | echolocation |
| 21:56:19 | Soprano Pipistrelle | 0.89 | social |
| 21:56:24 | Soprano Pipistrelle | 0.75 | echolocation |
| 21:56:24 | Soprano Pipistrelle | 0.72 | social |
| 21:56:29 | Soprano Pipistrelle | 0.94 | echolocation |
| 21:56:29 | Soprano Pipistrelle | 0.78 | social |
| 21:57:34 | Soprano Pipistrelle | 0.97 | echolocation |
| 21:57:34 | Soprano Pipistrelle | 0.59 | feeding buzz |
| 21:57:34 | Soprano Pipistrelle | 0.85 | social |
| 21:57:39 | Soprano Pipistrelle | 0.89 | social |
| 21:57:44 | Soprano Pipistrelle | 0.93 | echolocation |
| 21:57:44 | Soprano Pipistrelle | 0.87 | social |
| 21:57:52 | Soprano Pipistrelle | 0.55 | echolocation |
| 21:57:57 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:58:02 | Soprano Pipistrelle | 0.97 | echolocation |
| 21:58:15 | Soprano Pipistrelle | 0.82 | echolocation |
| 21:58:20 | Soprano Pipistrelle | 0.95 | echolocation |
| 21:58:20 | Soprano Pipistrelle | 0.67 | social |
| 21:58:25 | Soprano Pipistrelle | 0.97 | echolocation |
| 21:58:34 | Common Pipistrelle | 0.93 | echolocation |

| Field Survey 1 – 29th August 2025 | | | |
|---|---|---|---|
| 21:58:34 | Common Pipistrelle | 0.9 | social |
| 21:58:34 | Soprano Pipistrelle | 0.97 | echolocation |
| 21:58:39 | Soprano Pipistrelle | 0.74 | echolocation |
| 21:58:44 | Soprano Pipistrelle | 0.96 | echolocation |
| 21:58:44 | Soprano Pipistrelle | 0.73 | social |
| 21:58:49 | Soprano Pipistrelle | 0.96 | echolocation |
| 21:58:58 | Soprano Pipistrelle | 0.97 | echolocation |
| 21:59:03 | Soprano Pipistrelle | 0.97 | echolocation |
| 21:59:08 | Soprano Pipistrelle | 0.98 | echolocation |
| 22:00:44 | Soprano Pipistrelle | 0.98 | echolocation |
| 22:00:49 | Soprano Pipistrelle | 0.87 | echolocation |
| 22:00:54 | Soprano Pipistrelle | 0.97 | echolocation |
| 22:00:54 | Soprano Pipistrelle | 0.69 | social |
| 22:00:59 | Soprano Pipistrelle | 0.67 | social |
| 22:01:22 | Soprano Pipistrelle | 0.84 | echolocation |
| 22:01:32 | Soprano Pipistrelle | 0.87 | echolocation |
| 21:59:08 | Soprano Pipistrelle | 0.97 | echolocation |
| 22:00:44 | Soprano Pipistrelle | 0.99 | feeding buzz |
| 22:00:49 | Soprano Pipistrelle | 0.96 | echolocation |
| 22:00:54 | Soprano Pipistrelle | 0.95 | echolocation |
| 22:00:54 | Soprano Pipistrelle | 0.96 | echolocation |
| 22:00:59 | Soprano Pipistrelle | 0.96 | feeding buzz |
| 22:01:22 | Soprano Pipistrelle | 0.88 | echolocation |
| 22:01:32 | Soprano Pipistrelle | 0.88 | social |
| LC | | | |
| 20:31:47 | Soprano Pipistrelle | 0.7 | echolocation |
| 20:42:28 | Soprano Pipistrelle | 0.8 | echolocation |
| 20:43:16 | Soprano Pipistrelle | 0.57 | echolocation |
| 20:44:00 | Soprano Pipistrelle | 0.65 | echolocation |
| 20:44:26 | Soprano Pipistrelle | 0.62 | echolocation |
| 21:04:18 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 21:05:29 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 21:07:59 | Lesser Horseshoe Bat | 0.99 | echolocation |

| Field Survey 1 – 29th August 2025 | | | |
|---|---|---|---|
| 21:11:59 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:12:15 | Soprano Pipistrelle | 0.77 | echolocation |
| 21:24:50 | Common Pipistrelle | 0.99 | echolocation |
| 21:49:14 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:49:19 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:49:54 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:51:39 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:51:44 | Soprano Pipistrelle | 0.96 | echolocation |
| 21:51:44 | Soprano Pipistrelle | 0.8 | social |
| 21:51:47 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:51:47 | Soprano Pipistrelle | 0.91 | social |
| 21:51:52 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:51:52 | Soprano Pipistrelle | 0.9 | social |
| 21:51:57 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:51:57 | Soprano Pipistrelle | 0.83 | social |
| 21:51:59 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:51:59 | Soprano Pipistrelle | 0.91 | social |
| 21:52:04 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:52:04 | Soprano Pipistrelle | 0.9 | social |
| 21:52:09 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:52:09 | Soprano Pipistrelle | 0.91 | social |
| 21:52:20 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:52:20 | Soprano Pipistrelle | 0.92 | social |
| 21:52:25 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:52:25 | Soprano Pipistrelle | 0.93 | social |
| 21:52:30 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:52:30 | Soprano Pipistrelle | 0.92 | social |
| 21:52:35 | Soprano Pipistrelle | 0.97 | echolocation |
| 21:52:35 | Soprano Pipistrelle | 0.91 | social |
| 21:52:40 | Soprano Pipistrelle | 0.97 | echolocation |
| 21:52:40 | Soprano Pipistrelle | 0.92 | social |
| 21:52:47 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:52:47 | Soprano Pipistrelle | 0.92 | social |

| Field Survey 1 – 29th August 2025 | | | |
|---|---|---|---|
| 21:52:52 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:52:52 | Soprano Pipistrelle | 0.89 | social |
| 21:52:57 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:52:57 | Soprano Pipistrelle | 0.89 | social |
| 21:53:01 | Soprano Pipistrelle | 0.97 | echolocation |
| 21:53:01 | Soprano Pipistrelle | 0.92 | social |
| 21:53:06 | Soprano Pipistrelle | 0.97 | echolocation |
| 21:53:06 | Soprano Pipistrelle | 0.9 | social |
| 21:53:37 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:53:37 | Soprano Pipistrelle | 0.9 | social |
| 21:53:42 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:53:42 | Soprano Pipistrelle | 0.92 | social |
| 21:53:47 | Soprano Pipistrelle | 0.97 | echolocation |
| 21:53:58 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:53:58 | Soprano Pipistrelle | 0.92 | social |
| 21:54:03 | Soprano Pipistrelle | 0.94 | echolocation |
| 21:54:03 | Soprano Pipistrelle | 0.87 | social |
| 21:54:05 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:54:05 | Soprano Pipistrelle | 0.85 | social |
| 21:54:17 | Soprano Pipistrelle | 0.63 | echolocation |
| 21:54:17 | Soprano Pipistrelle | 0.89 | social |
| 21:54:19 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:54:19 | Soprano Pipistrelle | 0.9 | social |
| 21:54:24 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:54:24 | Soprano Pipistrelle | 0.92 | social |
| 21:54:29 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:54:29 | Soprano Pipistrelle | 0.91 | social |
| 21:54:41 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:54:41 | Soprano Pipistrelle | 0.93 | social |
| 21:54:46 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:54:46 | Soprano Pipistrelle | 0.81 | social |
| 21:54:51 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:54:51 | Soprano Pipistrelle | 0.9 | social |

| Field Survey 1 – 29th August 2025 | | | |
|---|---|---|---|
| 21:54:56 | Soprano Pipistrelle | 0.95 | echolocation |
| 21:54:56 | Soprano Pipistrelle | 0.92 | social |
| 21:55:02 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:55:02 | Soprano Pipistrelle | 0.93 | social |
| 21:55:07 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:55:07 | Soprano Pipistrelle | 0.88 | social |
| 21:55:14 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:55:14 | Soprano Pipistrelle | 0.91 | social |
| 21:55:19 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:55:19 | Soprano Pipistrelle | 0.92 | social |
| 21:55:24 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:55:24 | Soprano Pipistrelle | 0.86 | social |
| 21:55:57 | Soprano Pipistrelle | 0.97 | echolocation |
| 21:55:57 | Soprano Pipistrelle | 0.93 | social |
| 21:56:02 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:56:02 | Soprano Pipistrelle | 0.91 | social |
| 21:56:07 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:56:14 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:56:14 | Soprano Pipistrelle | 0.86 | social |
| 21:56:19 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:56:19 | Soprano Pipistrelle | 0.9 | social |
| 21:56:24 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:56:24 | Soprano Pipistrelle | 0.9 | social |
| 21:56:28 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:56:28 | Soprano Pipistrelle | 0.92 | social |
| 21:57:35 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:57:35 | Soprano Pipistrelle | 0.92 | social |
| 21:57:40 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:57:40 | Soprano Pipistrelle | 0.89 | social |
| 21:57:45 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:57:45 | Soprano Pipistrelle | 0.93 | social |
| 21:57:52 | Soprano Pipistrelle | 0.98 | echolocation |
| 21:57:52 | Soprano Pipistrelle | 0.92 | social |

| Field Survey 1 – 29th August 2025 | | | |
|---|---|---|---|
| 21:57:57 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:57:57 | Soprano Pipistrelle | 0.89 | social |
| 21:58:02 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:58:07 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:58:07 | Soprano Pipistrelle | 0.86 | social |
| 21:58:12 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:58:17 | Soprano Pipistrelle | 0.97 | echolocation |
| 21:58:22 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:58:22 | Soprano Pipistrelle | 0.92 | social |
| 21:58:27 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:58:27 | Soprano Pipistrelle | 0.67 | social |
| 21:58:32 | Soprano Pipistrelle | 0.57 | echolocation |
| 21:58:35 | Common Pipistrelle | 0.54 | echolocation |
| 21:58:35 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:58:35 | Soprano Pipistrelle | 0.84 | social |
| 21:58:40 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:58:40 | Soprano Pipistrelle | 0.81 | social |
| 21:58:47 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:58:47 | Soprano Pipistrelle | 0.91 | social |
| 21:58:52 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:58:56 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:59:01 | Soprano Pipistrelle | 0.99 | echolocation |
| 21:59:06 | Soprano Pipistrelle | 0.99 | echolocation |
| GS | | | |
| 21:03:03 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 21:04:49 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 21:08:00 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 21:09:21 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 21:11:53 | Soprano Pipistrelle | 0.72 | echolocation |
| 21:11:58 | Soprano Pipistrelle | 0.96 | echolocation |
| 21:24:51 | Common Pipistrelle | 0.82 | echolocation |
| 21:46:33 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 21:49:56 | Soprano Pipistrelle | 0.92 | echolocation |

| Field Survey 1 – 29th August 2025 | | | |
|---|---|---|---|
| 21:51:38 | Soprano Pipistrelle | 0.67 | echolocation |
| 21:51:38 | Soprano Pipistrelle | 0.77 | social |
| 21:51:44 | Soprano Pipistrelle | 0.95 | echolocation |
| 21:51:44 | Soprano Pipistrelle | 0.88 | social |
| 21:51:56 | Soprano Pipistrelle | 0.94 | echolocation |
| 21:51:56 | Soprano Pipistrelle | 0.69 | social |
| 21:52:01 | Soprano Pipistrelle | 0.75 | echolocation |
| 21:52:07 | Soprano Pipistrelle | 0.96 | echolocation |
| 21:52:07 | Soprano Pipistrelle | 0.82 | social |
| 21:52:12 | Soprano Pipistrelle | 0.85 | echolocation |
| 21:52:18 | Soprano Pipistrelle | 0.66 | echolocation |
| 21:03:03 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 21:04:49 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 21:08:00 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 21:09:21 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 21:11:53 | Soprano Pipistrelle | 0.72 | echolocation |
| 21:11:58 | Soprano Pipistrelle | 0.96 | echolocation |
| 21:24:51 | Common Pipistrelle | 0.82 | echolocation |
| 21:46:33 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 21:49:56 | Soprano Pipistrelle | 0.92 | echolocation |
| 21:51:38 | Soprano Pipistrelle | 0.67 | echolocation |
| 21:51:38 | Soprano Pipistrelle | 0.77 | social |
| 21:51:44 | Soprano Pipistrelle | 0.95 | echolocation |
| 21:51:44 | Soprano Pipistrelle | 0.88 | social |
| 21:51:56 | Soprano Pipistrelle | 0.94 | echolocation |
| 21:51:56 | Soprano Pipistrelle | 0.69 | social |
| 21:52:01 | Soprano Pipistrelle | 0.75 | echolocation |
| 21:52:07 | Soprano Pipistrelle | 0.96 | echolocation |
| 21:52:07 | Soprano Pipistrelle | 0.82 | social |
| 21:52:12 | Soprano Pipistrelle | 0.85 | echolocation |
| 21:52:18 | Soprano Pipistrelle | 0.66 | echolocation |

| Field Survey 2 – 26th September 2025 | | | |
|---|---|---|---|
| Time | Common Name | Probability | Description |
| **AW** | | | |
| 20:07:44 | Soprano Pipistrelle | 0.74 | echolocation |
| 20:28:29 | Leisler's Bat | 0.94 | echolocation |
| 20:41:42 | Soprano Pipistrelle | 0.95 | echolocation |
| **GS** | | | |
| 19:40:40 | Common Pipistrelle | 0.99 | echolocation |
| 19:56:10 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 20:04:01 | Brown Long-eared Bat | 0.88 | echolocation |
| 20:08:13 | Soprano Pipistrelle | 0.79 | echolocation |
| 20:08:13 | Soprano Pipistrelle | 0.93 | social |
| 20:08:19 | Soprano Pipistrelle | 0.95 | echolocation |
| 20:08:19 | Soprano Pipistrelle | 0.92 | social |
| 20:08:25 | Soprano Pipistrelle | 0.93 | social |
| 20:08:39 | Soprano Pipistrelle | 0.96 | echolocation |
| 20:08:39 | Soprano Pipistrelle | 0.92 | social |
| 20:08:44 | Soprano Pipistrelle | 0.81 | echolocation |
| 20:08:44 | Soprano Pipistrelle | 0.84 | social |
| 20:08:50 | Soprano Pipistrelle | 0.56 | echolocation |
| 20:08:50 | Soprano Pipistrelle | 0.84 | social |
| 20:09:01 | Soprano Pipistrelle | 0.69 | echolocation |
| 20:09:01 | Soprano Pipistrelle | 0.91 | social |
| 20:09:06 | Soprano Pipistrelle | 0.97 | echolocation |
| 20:09:06 | Soprano Pipistrelle | 0.92 | social |
| 20:09:12 | Soprano Pipistrelle | 0.76 | echolocation |
| 20:09:12 | Soprano Pipistrelle | 0.91 | social |
| 20:09:18 | Soprano Pipistrelle | 0.51 | echolocation |
| 20:09:18 | Soprano Pipistrelle | 0.92 | social |
| 20:09:39 | Soprano Pipistrelle | 0.85 | echolocation |
| 20:09:39 | Soprano Pipistrelle | 0.93 | social |
| 20:09:48 | Soprano Pipistrelle | 0.64 | echolocation |
| 20:09:48 | Soprano Pipistrelle | 0.92 | social |
| 20:09:53 | Soprano Pipistrelle | 0.96 | echolocation |
| 20:09:53 | Soprano Pipistrelle | 0.93 | feeding buzz |

| Field Survey 2 – 26th September 2025 | | | |
|---|---|---|---|
| 20:09:53 | Soprano Pipistrelle | 0.92 | social |
| 20:09:59 | Soprano Pipistrelle | 0.95 | echolocation |
| 20:09:59 | Soprano Pipistrelle | 0.92 | social |
| 20:11:43 | Soprano Pipistrelle | 0.76 | echolocation |
| 20:11:43 | Soprano Pipistrelle | 0.92 | social |
| 20:11:49 | Soprano Pipistrelle | 0.53 | echolocation |
| 20:11:49 | Soprano Pipistrelle | 0.93 | social |
| 20:12:01 | Soprano Pipistrelle | 0.92 | social |
| 20:12:06 | Soprano Pipistrelle | 0.92 | social |
| 20:12:12 | Soprano Pipistrelle | 0.84 | echolocation |
| 20:12:12 | Soprano Pipistrelle | 0.93 | social |
| 20:12:19 | Soprano Pipistrelle | 0.96 | echolocation |
| 20:12:19 | Soprano Pipistrelle | 0.93 | social |
| 20:12:25 | Soprano Pipistrelle | 0.96 | echolocation |
| 20:12:25 | Soprano Pipistrelle | 0.92 | social |
| 20:12:31 | Soprano Pipistrelle | 0.56 | echolocation |
| 20:12:31 | Soprano Pipistrelle | 0.92 | social |
| 20:12:42 | Soprano Pipistrelle | 0.92 | echolocation |
| 20:12:42 | Soprano Pipistrelle | 0.93 | social |
| 20:13:14 | Soprano Pipistrelle | 0.8 | echolocation |
| 20:13:14 | Soprano Pipistrelle | 0.87 | social |
| 20:13:20 | Soprano Pipistrelle | 0.75 | echolocation |
| 20:13:20 | Soprano Pipistrelle | 0.9 | social |
| 20:13:28 | Soprano Pipistrelle | 0.81 | echolocation |
| 20:13:28 | Soprano Pipistrelle | 0.98 | feeding buzz |
| 20:13:28 | Soprano Pipistrelle | 0.92 | social |
| 20:13:34 | Soprano Pipistrelle | 0.9 | social |
| 20:13:47 | Soprano Pipistrelle | 0.91 | echolocation |
| 20:13:47 | Soprano Pipistrelle | 0.92 | social |
| 20:13:52 | Soprano Pipistrelle | 0.73 | echolocation |
| 20:13:52 | Soprano Pipistrelle | 0.92 | social |
| 20:13:58 | Soprano Pipistrelle | 0.94 | echolocation |
| 20:13:58 | Soprano Pipistrelle | 0.92 | social |

| Field Survey 2 – 26th September 2025 | | | |
|---|---|---|---|
| 20:14:35 | Soprano Pipistrelle | 0.87 | social |
| 20:15:20 | Soprano Pipistrelle | 0.67 | echolocation |
| 20:15:20 | Soprano Pipistrelle | 0.92 | social |
| 20:15:26 | Soprano Pipistrelle | 0.7 | echolocation |
| 20:15:26 | Soprano Pipistrelle | 0.81 | social |
| 20:15:31 | Soprano Pipistrelle | 0.83 | echolocation |
| 20:15:31 | Soprano Pipistrelle | 0.93 | social |
| 20:16:08 | Soprano Pipistrelle | 0.9 | social |
| 20:17:30 | Soprano Pipistrelle | 0.81 | echolocation |
| 20:17:30 | Soprano Pipistrelle | 0.93 | social |
| 20:18:06 | Soprano Pipistrelle | 0.68 | echolocation |
| 20:18:06 | Soprano Pipistrelle | 0.92 | social |
| 20:18:11 | Soprano Pipistrelle | 0.75 | echolocation |
| 20:18:11 | Soprano Pipistrelle | 0.92 | social |
| 20:18:17 | Soprano Pipistrelle | 0.6 | echolocation |
| 20:18:17 | Soprano Pipistrelle | 0.93 | social |
| 20:18:22 | Soprano Pipistrelle | 0.86 | echolocation |
| 20:18:22 | Soprano Pipistrelle | 0.92 | social |
| 20:18:28 | Soprano Pipistrelle | 0.57 | echolocation |
| 20:18:28 | Soprano Pipistrelle | 0.88 | social |
| 20:18:38 | Soprano Pipistrelle | 0.91 | echolocation |
| 20:18:38 | Soprano Pipistrelle | 0.93 | social |
| 20:29:24 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:30:40 | Soprano Pipistrelle | 0.95 | echolocation |
| 20:32:05 | Soprano Pipistrelle | 0.97 | echolocation |
| VCT | | | |
| 19:11:01 | Soprano Pipistrelle | 0.87 | echolocation |
| 19:40:40 | Common Pipistrelle | 0.99 | echolocation |
| 19:40:45 | Common Pipistrelle | 0.53 | echolocation |
| 19:52:01 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:52:19 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:53:05 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:53:18 | Soprano Pipistrelle | 0.74 | echolocation |

| Field Survey 2 – 26th September 2025 | | | |
|---|---|---|---|
| 19:53:26 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:54:03 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:55:40 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:57:05 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:57:10 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:57:13 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:57:18 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:59:00 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:59:40 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 20:01:02 | Common Pipistrelle | 0.99 | echolocation |
| 20:02:10 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 20:08:15 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:08:15 | Soprano Pipistrelle | 0.93 | social |
| 20:08:20 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:08:20 | Soprano Pipistrelle | 0.91 | social |
| 20:08:25 | Soprano Pipistrelle | 0.76 | social |
| 20:08:37 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:08:37 | Soprano Pipistrelle | 0.9 | social |
| 20:08:42 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:08:42 | Soprano Pipistrelle | 0.91 | social |
| 20:08:47 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:08:47 | Soprano Pipistrelle | 0.91 | social |
| 20:09:04 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:09:04 | Soprano Pipistrelle | 0.9 | social |
| 20:09:17 | Soprano Pipistrelle | 0.93 | echolocation |
| 20:09:17 | Soprano Pipistrelle | 0.9 | social |
| 20:09:35 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:09:35 | Soprano Pipistrelle | 0.91 | social |
| 20:09:40 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:09:40 | Soprano Pipistrelle | 0.88 | social |
| 20:09:45 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:09:45 | Soprano Pipistrelle | 0.85 | social |
| 20:09:50 | Soprano Pipistrelle | 0.98 | echolocation |

| Field Survey 2 – 26th September 2025 | | | |
|---|---|---|---|
| 20:09:50 | Soprano Pipistrelle | 0.92 | social |
| 20:09:55 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:09:55 | Soprano Pipistrelle | 0.93 | social |
| 20:10:00 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:10:00 | Soprano Pipistrelle | 0.92 | social |
| 20:11:20 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:11:20 | Soprano Pipistrelle | 0.65 | social |
| 20:11:45 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:11:45 | Soprano Pipistrelle | 0.91 | social |
| 20:11:50 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:11:50 | Soprano Pipistrelle | 0.84 | social |
| 20:11:59 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:12:04 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:12:04 | Soprano Pipistrelle | 0.93 | social |
| 20:12:09 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:12:09 | Soprano Pipistrelle | 0.88 | social |
| 20:12:20 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:12:20 | Soprano Pipistrelle | 0.91 | social |
| 20:12:26 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:12:26 | Soprano Pipistrelle | 0.78 | social |
| 20:12:31 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:12:31 | Soprano Pipistrelle | 0.89 | social |
| 20:12:36 | Soprano Pipistrelle | 0.97 | echolocation |
| 20:12:36 | Soprano Pipistrelle | 0.92 | social |
| 20:12:40 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:12:40 | Soprano Pipistrelle | 0.92 | social |
| 20:12:45 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:12:45 | Soprano Pipistrelle | 0.92 | social |
| 20:12:55 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 20:13:13 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:13:13 | Soprano Pipistrelle | 0.9 | social |
| 20:13:18 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:13:18 | Soprano Pipistrelle | 0.9 | social |

| Field Survey 2 – 26th September 2025 | | | |
|---|---|---|---|
| 20:13:26 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:13:26 | Soprano Pipistrelle | 0.86 | social |
| 20:13:31 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:13:31 | Soprano Pipistrelle | 0.92 | social |
| 20:13:36 | Soprano Pipistrelle | 0.95 | echolocation |
| 20:13:36 | Soprano Pipistrelle | 0.84 | social |
| 20:13:49 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:13:49 | Soprano Pipistrelle | 0.88 | social |
| 20:13:54 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:13:54 | Soprano Pipistrelle | 0.93 | social |
| 20:13:59 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:13:59 | Soprano Pipistrelle | 0.92 | social |
| 20:14:39 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:14:39 | Soprano Pipistrelle | 0.78 | social |
| 20:15:09 | Soprano Pipistrelle | 0.94 | echolocation |
| 20:15:09 | Soprano Pipistrelle | 0.8 | social |
| 20:15:21 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:15:21 | Soprano Pipistrelle | 0.91 | social |
| 20:15:26 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:15:26 | Soprano Pipistrelle | 0.91 | social |
| 20:15:31 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:15:31 | Soprano Pipistrelle | 0.91 | social |
| 20:16:10 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:16:10 | Soprano Pipistrelle | 0.9 | social |
| 20:16:38 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 20:17:28 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:17:28 | Soprano Pipistrelle | 0.9 | social |
| 20:17:33 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:17:33 | Soprano Pipistrelle | 0.79 | social |
| 20:17:41 | Soprano Pipistrelle | 0.92 | echolocation |
| 20:17:41 | Soprano Pipistrelle | 0.81 | social |
| 20:17:48 | Soprano Pipistrelle | 0.96 | echolocation |
| 20:17:48 | Soprano Pipistrelle | 0.8 | social |

| Field Survey 2 – 26th September 2025 | | | |
|---|---|---|---|
| 20:18:07 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:18:07 | Soprano Pipistrelle | 0.92 | social |
| 20:18:12 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:18:12 | Soprano Pipistrelle | 0.93 | social |
| 20:18:17 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:18:17 | Soprano Pipistrelle | 0.88 | social |
| 20:18:25 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:18:25 | Soprano Pipistrelle | 0.93 | social |
| 20:18:30 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:18:30 | Soprano Pipistrelle | 0.92 | social |
| 20:18:35 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:18:35 | Soprano Pipistrelle | 0.93 | social |
| 20:18:40 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:18:40 | Soprano Pipistrelle | 0.91 | social |
| 20:27:48 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 20:28:27 | Leisler's Bat | 0.99 | echolocation |
| 20:28:30 | Leisler's Bat | 0.99 | echolocation |
| 20:28:32 | Leisler's Bat | 0.99 | echolocation |
| 20:28:35 | Leisler's Bat | 0.63 | echolocation |
| 20:29:20 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:29:25 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:30:21 | Soprano Pipistrelle | 0.97 | echolocation |
| 20:30:32 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:30:40 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:32:03 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:39:14 | Brown Long-eared Bat | 0.74 | echolocation |
| 20:40:57 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 20:47:05 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:47:20 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:49:24 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 20:53:25 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 20:54:09 | Common Pipistrelle | 0.99 | echolocation |
| 20:54:13 | Soprano Pipistrelle | 0.98 | echolocation |

| Field Survey 2 – 26th September 2025 | | | |
|---|---|---|---|
| LC | | | |
| 19:40:41 | Soprano Pipistrelle | 0.96 | echolocation |
| 19:52:01 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:52:19 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:53:06 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:53:26 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:54:04 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:54:07 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:55:39 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:55:44 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:55:49 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:57:05 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:57:13 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:57:19 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:59:00 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:59:40 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 20:01:02 | Common Pipistrelle | 0.99 | echolocation |
| 20:02:09 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 20:08:15 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:08:15 | Soprano Pipistrelle | 0.9 | social |
| 20:08:20 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:08:20 | Soprano Pipistrelle | 0.86 | social |
| 20:08:37 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:08:37 | Soprano Pipistrelle | 0.9 | social |
| 20:08:42 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:08:42 | Soprano Pipistrelle | 0.92 | social |
| 20:08:47 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:08:47 | Soprano Pipistrelle | 0.91 | social |
| 20:09:02 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:09:02 | Soprano Pipistrelle | 0.92 | social |
| 20:09:18 | Soprano Pipistrelle | 0.95 | echolocation |
| 20:09:18 | Soprano Pipistrelle | 0.9 | social |
| 20:09:35 | Soprano Pipistrelle | 0.98 | echolocation |

| Field Survey 2 – 26th September 2025 | | | |
|---|---|---|---|
| 20:09:35 | Soprano Pipistrelle | 0.92 | social |
| 20:09:40 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:09:40 | Soprano Pipistrelle | 0.88 | social |
| 20:09:51 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:09:51 | Soprano Pipistrelle | 0.93 | social |
| 20:09:56 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:09:56 | Soprano Pipistrelle | 0.93 | social |
| 20:10:01 | Soprano Pipistrelle | 0.97 | echolocation |
| 20:10:01 | Soprano Pipistrelle | 0.93 | social |
| 20:11:19 | Soprano Pipistrelle | 0.96 | echolocation |
| 20:11:19 | Soprano Pipistrelle | 0.91 | social |
| 20:11:43 | Soprano Pipistrelle | 0.91 | echolocation |
| 20:11:43 | Soprano Pipistrelle | 0.92 | social |
| 20:11:47 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:11:47 | Soprano Pipistrelle | 0.92 | social |
| 20:11:52 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:11:52 | Soprano Pipistrelle | 0.81 | social |
| 20:12:00 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:12:00 | Soprano Pipistrelle | 0.91 | social |
| 20:12:05 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:12:05 | Soprano Pipistrelle | 0.92 | social |
| 20:12:10 | Soprano Pipistrelle | 0.97 | echolocation |
| 20:12:10 | Soprano Pipistrelle | 0.92 | social |
| 20:12:20 | Soprano Pipistrelle | 0.96 | echolocation |
| 20:12:20 | Soprano Pipistrelle | 0.88 | social |
| 20:12:24 | Soprano Pipistrelle | 0.96 | echolocation |
| 20:12:24 | Soprano Pipistrelle | 0.9 | social |
| 20:12:30 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:12:30 | Soprano Pipistrelle | 0.85 | social |
| 20:12:35 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:12:35 | Soprano Pipistrelle | 0.9 | social |
| 20:12:40 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:12:40 | Soprano Pipistrelle | 0.91 | social |

| Field Survey 2 – 26th September 2025 | | | |
|---|---|---|---|
| 20:12:45 | Soprano Pipistrelle | 0.97 | echolocation |
| 20:12:45 | Soprano Pipistrelle | 0.91 | social |
| 20:12:55 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 20:13:13 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:13:13 | Soprano Pipistrelle | 0.91 | social |
| 20:13:15 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:13:15 | Soprano Pipistrelle | 0.93 | social |
| 20:13:20 | Soprano Pipistrelle | 0.97 | echolocation |
| 20:13:20 | Soprano Pipistrelle | 0.9 | social |
| 20:13:27 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:13:27 | Soprano Pipistrelle | 0.89 | social |
| 20:13:32 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:13:32 | Soprano Pipistrelle | 0.92 | social |
| 20:13:37 | Soprano Pipistrelle | 0.75 | echolocation |
| 20:13:50 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:13:50 | Soprano Pipistrelle | 0.87 | social |
| 20:13:55 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:13:55 | Soprano Pipistrelle | 0.92 | social |
| 20:14:00 | Soprano Pipistrelle | 0.96 | echolocation |
| 20:14:00 | Soprano Pipistrelle | 0.92 | social |
| 20:14:39 | Soprano Pipistrelle | 0.97 | echolocation |
| 20:14:39 | Soprano Pipistrelle | 0.88 | social |
| 20:15:20 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:15:20 | Soprano Pipistrelle | 0.92 | social |
| 20:15:25 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:15:25 | Soprano Pipistrelle | 0.92 | social |
| 20:15:30 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:15:30 | Soprano Pipistrelle | 0.92 | social |
| 20:16:10 | Soprano Pipistrelle | 0.97 | echolocation |
| 20:16:10 | Soprano Pipistrelle | 0.91 | social |
| 20:16:38 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 20:17:29 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:17:29 | Soprano Pipistrelle | 0.9 | social |

| Field Survey 2 – 26th September 2025 | | | |
|---|---|---|---|
| 20:17:34 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:17:34 | Soprano Pipistrelle | 0.88 | social |
| 20:17:40 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:17:40 | Soprano Pipistrelle | 0.9 | social |
| 20:17:47 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:17:47 | Soprano Pipistrelle | 0.88 | social |
| 20:17:58 | Soprano Pipistrelle | 0.86 | echolocation |
| 20:17:58 | Soprano Pipistrelle | 0.74 | social |
| 20:18:06 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:18:06 | Soprano Pipistrelle | 0.91 | social |
| 20:18:11 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:18:11 | Soprano Pipistrelle | 0.92 | social |
| 20:18:16 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:18:16 | Soprano Pipistrelle | 0.89 | social |
| 20:18:20 | Soprano Pipistrelle | 0.94 | echolocation |
| 20:18:20 | Soprano Pipistrelle | 0.87 | social |
| 20:18:25 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:18:25 | Soprano Pipistrelle | 0.92 | social |
| 20:18:30 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:18:30 | Soprano Pipistrelle | 0.92 | social |
| 20:18:35 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:18:35 | Soprano Pipistrelle | 0.92 | social |
| 20:18:40 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:18:40 | Soprano Pipistrelle | 0.88 | social |
| 20:18:42 | Soprano Pipistrelle | 0.81 | echolocation |
| 20:18:42 | Soprano Pipistrelle | 0.89 | social |
| 20:27:48 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 20:28:31 | Leisler's Bat | 0.99 | echolocation |
| 20:28:33 | Leisler's Bat | 0.99 | echolocation |
| 20:29:20 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:29:25 | Soprano Pipistrelle | 0.55 | echolocation |
| 20:30:19 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:30:33 | Soprano Pipistrelle | 0.98 | echolocation |

| Field Survey 2 – 26th September 2025 | | | |
|---|---|---|---|
| 20:32:02 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:32:07 | Soprano Pipistrelle | 0.97 | echolocation |
| 20:39:15 | Brown Long-eared Bat | 0.93 | echolocation |
| 20:40:58 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 20:47:08 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:47:20 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:49:24 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 20:54:13 | Soprano Pipistrelle | 0.98 | echolocation |
| **CMcK** | | | |
| 20:37:56 | Soprano Pipistrelle | 0.91 | echolocation |
| 20:38:02 | Soprano Pipistrelle | 0.64 | echolocation |
| 20:45:22 | Soprano Pipistrelle | 0.95 | echolocation |
| 20:47:06 | Soprano Pipistrelle | 0.58 | echolocation |
| 20:54:02 | Lesser Horseshoe Bat | 0.98 | echolocation |

| Field Survey 3 – 27th September 2025 | | | |
|---|---|---|---|
| Time | Common Name | Probability | Description |
| **LC** | | | |
| 19:41:46 | Soprano Pipistrelle | 0.97 | echolocation |
| 19:41:52 | Soprano Pipistrelle | 0.99 | echolocation |
| 19:41:57 | Soprano Pipistrelle | 0.96 | echolocation |
| 19:41:58 | Soprano Pipistrelle | 0.99 | echolocation |
| 19:41:58 | Soprano Pipistrelle | 0.89 | social |
| 19:42:03 | Soprano Pipistrelle | 0.98 | echolocation |
| 19:42:03 | Soprano Pipistrelle | 0.54 | feeding buzz |
| 19:42:03 | Soprano Pipistrelle | 0.93 | social |
| 19:42:08 | Soprano Pipistrelle | 0.96 | echolocation |
| 19:42:08 | Soprano Pipistrelle | 0.67 | social |
| 19:42:11 | Soprano Pipistrelle | 0.85 | echolocation |
| 19:42:13 | Soprano Pipistrelle | 0.98 | echolocation |
| 19:42:13 | Soprano Pipistrelle | 0.84 | social |
| 19:42:18 | Soprano Pipistrelle | 0.97 | echolocation |
| 19:42:22 | Soprano Pipistrelle | 0.89 | echolocation |

| Field Survey 3 – 27th September 2025 | | | |
|---|---|---|---|
| 19:42:27 | Soprano Pipistrelle | 0.98 | echolocation |
| 19:42:34 | Soprano Pipistrelle | 0.98 | echolocation |
| 19:44:41 | Soprano Pipistrelle | 0.99 | echolocation |
| 19:53:53 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:54:07 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:54:50 | Common Pipistrelle | 0.99 | echolocation |
| 19:54:50 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:56:23 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:58:49 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:58:54 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 20:00:11 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 20:09:05 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:09:05 | Soprano Pipistrelle | 0.92 | social |
| 20:09:10 | Soprano Pipistrelle | 0.74 | echolocation |
| 20:09:10 | Soprano Pipistrelle | 0.89 | social |
| 20:13:30 | Soprano Pipistrelle | 0.94 | echolocation |
| 20:13:30 | Soprano Pipistrelle | 0.85 | social |
| 20:13:51 | Soprano Pipistrelle | 0.92 | echolocation |
| 20:13:51 | Soprano Pipistrelle | 0.88 | social |
| 20:13:57 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:13:57 | Soprano Pipistrelle | 0.9 | social |
| 20:14:02 | Soprano Pipistrelle | 0.88 | echolocation |
| 20:14:14 | Soprano Pipistrelle | 0.84 | echolocation |
| 20:14:14 | Soprano Pipistrelle | 0.88 | social |
| 20:15:21 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 20:15:51 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:15:51 | Soprano Pipistrelle | 0.92 | social |
| 20:15:56 | Soprano Pipistrelle | 0.96 | echolocation |
| 20:15:56 | Soprano Pipistrelle | 0.81 | social |
| 20:15:59 | Soprano Pipistrelle | 0.95 | echolocation |
| 20:15:59 | Soprano Pipistrelle | 0.91 | social |
| 20:16:04 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:16:04 | Soprano Pipistrelle | 0.9 | social |

| Field Survey 3 – 27th September 2025 | | | |
|---|---|---|---|
| 20:16:15 | Soprano Pipistrelle | 0.95 | echolocation |
| 20:16:15 | Soprano Pipistrelle | 0.88 | social |
| 20:16:23 | Soprano Pipistrelle | 0.9 | social |
| 20:16:36 | Soprano Pipistrelle | 0.92 | social |
| 20:26:17 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:26:17 | Soprano Pipistrelle | 0.92 | social |
| 20:26:42 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:26:42 | Soprano Pipistrelle | 0.62 | social |
| 20:28:51 | Soprano Pipistrelle | 0.95 | echolocation |
| 20:30:15 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:30:15 | Soprano Pipistrelle | 0.91 | social |
| 20:30:43 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:30:43 | Soprano Pipistrelle | 0.89 | social |
| 20:30:59 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:30:59 | Soprano Pipistrelle | 0.92 | social |
| VCT | | | |
| 19:41:44 | Soprano Pipistrelle | 0.97 | echolocation |
| 19:41:47 | Soprano Pipistrelle | 0.97 | echolocation |
| 19:42:00 | Soprano Pipistrelle | 0.99 | echolocation |
| 19:42:00 | Soprano Pipistrelle | 0.91 | social |
| 19:42:04 | Soprano Pipistrelle | 0.99 | echolocation |
| 19:42:04 | Soprano Pipistrelle | 0.86 | social |
| 19:42:11 | Soprano Pipistrelle | 0.98 | echolocation |
| 19:42:16 | Soprano Pipistrelle | 0.97 | echolocation |
| 19:42:19 | Soprano Pipistrelle | 0.87 | echolocation |
| 19:42:30 | Soprano Pipistrelle | 0.55 | echolocation |
| 19:44:40 | Soprano Pipistrelle | 0.98 | echolocation |
| 19:53:47 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:54:03 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:54:44 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 19:58:44 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 20:03:37 | Lesser Horseshoe Bat | 0.99 | echolocation |
| 20:07:08 | Lesser Horseshoe Bat | 0.99 | echolocation |

| Field Survey 3 – 27th September 2025 | | | |
|---|---|---|---|
| 20:08:34 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:08:34 | Soprano Pipistrelle | 0.63 | feeding buzz |
| 20:08:34 | Soprano Pipistrelle | 0.91 | social |
| 20:08:39 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:08:39 | Soprano Pipistrelle | 0.91 | social |
| 20:08:59 | Common Pipistrelle | 0.77 | echolocation |
| 20:08:59 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:08:59 | Soprano Pipistrelle | 0.9 | social |
| 20:09:04 | Soprano Pipistrelle | 0.97 | echolocation |
| 20:09:04 | Soprano Pipistrelle | 0.87 | social |
| 20:09:08 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:09:08 | Soprano Pipistrelle | 0.92 | social |
| 20:09:13 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:09:13 | Soprano Pipistrelle | 0.92 | social |
| 20:09:47 | Soprano Pipistrelle | 0.93 | echolocation |
| 20:09:47 | Soprano Pipistrelle | 0.69 | social |
| 20:09:51 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:09:51 | Soprano Pipistrelle | 0.79 | social |
| 20:09:56 | Soprano Pipistrelle | 0.6 | echolocation |
| 20:10:10 | Common Pipistrelle | 0.54 | echolocation |
| 20:10:10 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:10:10 | Soprano Pipistrelle | 0.89 | social |
| 20:10:15 | Soprano Pipistrelle | 0.94 | echolocation |
| 20:10:18 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:10:18 | Soprano Pipistrelle | 0.92 | social |
| 20:10:23 | Soprano Pipistrelle | 0.94 | echolocation |
| 20:10:23 | Soprano Pipistrelle | 0.88 | social |
| 20:10:33 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:10:33 | Soprano Pipistrelle | 0.92 | social |
| 20:10:38 | Soprano Pipistrelle | 0.96 | echolocation |
| 20:10:42 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:10:42 | Soprano Pipistrelle | 0.9 | social |
| 20:10:47 | Soprano Pipistrelle | 0.98 | echolocation |

| Field Survey 3 – 27th September 2025 | | | |
|---|---|---|---|
| 20:10:47 | Soprano Pipistrelle | 0.72 | social |
| 20:11:01 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:11:01 | Soprano Pipistrelle | 0.92 | social |
| 20:11:06 | Soprano Pipistrelle | 0.96 | echolocation |
| 20:11:06 | Soprano Pipistrelle | 0.92 | social |
| 20:11:09 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:11:09 | Soprano Pipistrelle | 0.93 | social |
| 20:11:14 | Soprano Pipistrelle | 0.87 | echolocation |
| 20:11:14 | Soprano Pipistrelle | 0.92 | social |
| 20:11:36 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:11:36 | Soprano Pipistrelle | 0.92 | social |
| 20:11:41 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:11:41 | Soprano Pipistrelle | 0.91 | social |
| 20:11:46 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:11:46 | Soprano Pipistrelle | 0.92 | social |
| 20:11:57 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:11:57 | Soprano Pipistrelle | 0.89 | social |
| 20:12:02 | Soprano Pipistrelle | 0.92 | echolocation |
| 20:12:02 | Soprano Pipistrelle | 0.93 | social |
| 20:12:05 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:12:05 | Soprano Pipistrelle | 0.9 | social |
| 20:12:10 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:12:10 | Soprano Pipistrelle | 0.91 | social |
| 20:12:30 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:12:30 | Soprano Pipistrelle | 0.92 | social |
| 20:12:35 | Soprano Pipistrelle | 0.97 | echolocation |
| 20:12:35 | Soprano Pipistrelle | 0.9 | social |
| 20:12:40 | Soprano Pipistrelle | 0.96 | echolocation |
| 20:12:40 | Soprano Pipistrelle | 0.85 | social |
| 20:12:42 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:12:42 | Soprano Pipistrelle | 0.82 | social |
| 20:12:45 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:12:45 | Soprano Pipistrelle | 0.92 | social |

| Field Survey 3 – 27th September 2025 | | | |
|---|---|---|---|
| 20:12:50 | Soprano Pipistrelle | 0.94 | echolocation |
| 20:12:50 | Soprano Pipistrelle | 0.81 | social |
| 20:13:00 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:13:00 | Soprano Pipistrelle | 0.92 | social |
| 20:13:05 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:13:05 | Soprano Pipistrelle | 0.91 | social |
| 20:13:08 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:13:08 | Soprano Pipistrelle | 0.91 | social |
| 20:13:13 | Soprano Pipistrelle | 0.95 | echolocation |
| 20:13:13 | Soprano Pipistrelle | 0.88 | social |
| 20:13:28 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:13:28 | Soprano Pipistrelle | 0.92 | social |
| 20:13:33 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:13:33 | Soprano Pipistrelle | 0.92 | social |
| 20:13:38 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:13:38 | Soprano Pipistrelle | 0.88 | social |
| 20:13:49 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:13:49 | Soprano Pipistrelle | 0.9 | social |
| 20:13:54 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:13:54 | Soprano Pipistrelle | 0.92 | social |
| 20:13:59 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:13:59 | Soprano Pipistrelle | 0.9 | social |
| 20:14:03 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:14:03 | Soprano Pipistrelle | 0.88 | social |
| 20:14:08 | Soprano Pipistrelle | 0.92 | echolocation |
| 20:14:08 | Soprano Pipistrelle | 0.76 | social |
| 20:14:10 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:14:10 | Soprano Pipistrelle | 0.9 | social |
| 20:14:15 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:14:15 | Soprano Pipistrelle | 0.92 | social |
| 20:14:31 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:14:31 | Soprano Pipistrelle | 0.91 | social |
| 20:14:36 | Soprano Pipistrelle | 0.97 | echolocation |

| Field Survey 3 – 27th September 2025 | | | |
|---|---|---|---|
| 20:14:36 | Soprano Pipistrelle | 0.86 | social |
| 20:14:40 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:14:40 | Soprano Pipistrelle | 0.91 | social |
| 20:14:45 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:14:45 | Soprano Pipistrelle | 0.86 | social |
| 20:14:57 | Common Pipistrelle | 0.54 | echolocation |
| 20:14:57 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:14:57 | Soprano Pipistrelle | 0.9 | social |
| 20:15:02 | Soprano Pipistrelle | 0.97 | echolocation |
| 20:15:02 | Soprano Pipistrelle | 0.9 | social |
| 20:15:05 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:15:05 | Soprano Pipistrelle | 0.87 | social |
| 20:15:10 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:15:10 | Soprano Pipistrelle | 0.79 | social |
| 20:15:13 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:15:13 | Soprano Pipistrelle | 0.88 | social |
| 20:15:33 | Common Pipistrelle | 0.5 | echolocation |
| 20:15:33 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:15:33 | Soprano Pipistrelle | 0.62 | social |
| 20:15:38 | Soprano Pipistrelle | 0.97 | echolocation |
| 20:15:38 | Soprano Pipistrelle | 0.92 | social |
| 20:15:43 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:15:43 | Soprano Pipistrelle | 0.91 | social |
| 20:15:48 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:15:48 | Soprano Pipistrelle | 0.9 | social |
| 20:15:53 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:15:53 | Soprano Pipistrelle | 0.9 | social |
| 20:15:58 | Soprano Pipistrelle | 0.97 | echolocation |
| 20:15:58 | Soprano Pipistrelle | 0.91 | social |
| 20:16:01 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:16:01 | Soprano Pipistrelle | 0.92 | social |
| 20:16:06 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:16:06 | Soprano Pipistrelle | 0.92 | social |

| Field Survey 3 – 27th September 2025 | | | |
|---|---|---|---|
| 20:16:11 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:16:11 | Soprano Pipistrelle | 0.92 | social |
| 20:16:16 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:16:16 | Soprano Pipistrelle | 0.92 | social |
| 20:16:21 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:16:21 | Soprano Pipistrelle | 0.92 | social |
| 20:16:26 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:16:26 | Soprano Pipistrelle | 0.92 | social |
| 20:16:34 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:16:34 | Soprano Pipistrelle | 0.92 | social |
| 20:16:39 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:16:39 | Soprano Pipistrelle | 0.93 | social |
| 20:16:44 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:16:44 | Soprano Pipistrelle | 0.9 | social |
| 20:16:49 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:16:49 | Soprano Pipistrelle | 0.88 | social |
| 20:16:54 | Soprano Pipistrelle | 0.69 | social |
| 20:17:11 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:17:11 | Soprano Pipistrelle | 0.87 | social |
| 20:17:16 | Soprano Pipistrelle | 0.94 | echolocation |
| 20:17:16 | Soprano Pipistrelle | 0.9 | social |
| 20:17:21 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:17:21 | Soprano Pipistrelle | 0.9 | social |
| 20:17:26 | Soprano Pipistrelle | 0.97 | echolocation |
| 20:17:26 | Soprano Pipistrelle | 0.83 | social |
| 20:17:41 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:17:41 | Soprano Pipistrelle | 0.92 | social |
| 20:17:46 | Soprano Pipistrelle | 0.95 | echolocation |
| 20:17:46 | Soprano Pipistrelle | 0.92 | social |
| 20:17:49 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:17:49 | Soprano Pipistrelle | 0.92 | social |
| 20:17:54 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:17:54 | Soprano Pipistrelle | 0.88 | social |

| Field Survey 3 – 27th September 2025 | | | |
|---|---|---|---|
| 20:18:13 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:18:13 | Soprano Pipistrelle | 0.91 | social |
| 20:18:18 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:18:18 | Soprano Pipistrelle | 0.92 | social |
| 20:18:22 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:18:22 | Soprano Pipistrelle | 0.92 | social |
| 20:18:27 | Soprano Pipistrelle | 0.97 | echolocation |
| 20:18:27 | Soprano Pipistrelle | 0.91 | social |
| 20:25:28 | Brown Long-eared Bat | 0.94 | echolocation |
| 20:26:20 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:26:20 | Soprano Pipistrelle | 0.93 | social |
| 20:26:25 | Soprano Pipistrelle | 0.93 | echolocation |
| 20:26:25 | Soprano Pipistrelle | 0.91 | social |
| 20:26:45 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:29:52 | Soprano Pipistrelle | 0.97 | echolocation |
| 20:30:44 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:30:44 | Soprano Pipistrelle | 0.85 | social |
| 20:30:49 | Soprano Pipistrelle | 0.99 | echolocation |
| 20:30:54 | Soprano Pipistrelle | 0.97 | echolocation |
| 20:30:57 | Soprano Pipistrelle | 0.98 | echolocation |
| 20:30:57 | Soprano Pipistrelle | 0.86 | social |
| CMcK | | | |
| 20:14:15 | Soprano Pipistrelle | 0.66 | echolocation |
| 20:14:15 | Soprano Pipistrelle | 0.89 | social |
| 20:14:43 | Soprano Pipistrelle | 0.83 | social |
| 20:16:32 | Soprano Pipistrelle | 0.63 | echolocation |
| 20:16:32 | Soprano Pipistrelle | 0.92 | social |
| 20:16:52 | Soprano Pipistrelle | 0.55 | echolocation |
| 20:17:08 | Soprano Pipistrelle | 0.83 | echolocation |
| 20:18:11 | Soprano Pipistrelle | 0.63 | echolocation |
| 20:18:11 | Soprano Pipistrelle | 0.84 | social |
| 20:18:24 | Soprano Pipistrelle | 0.81 | echolocation |
| 20:18:24 | Soprano Pipistrelle | 0.88 | social |

# Appendix E – Examples of suitable bat bricks





## Habibat

**TYPE OF PRODUCT:**
Bat roost

**WEBSITE:**
www.habibat.co.uk

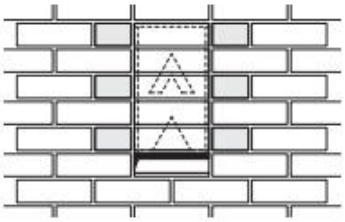
**WHERE USED:**
Replaces six bricks in stackbond in cavity wall construction, or tooth bonded into adjacent walls

**PRODUCT INFORMATION:**
Fired clay brick slip face – available for all brick types
Alternative facing materials can be included, such as stone, masonry, tile hanging, timber and render
Multiple units can be connected in series horizontally or vertically to create a much larger roosting space
Dense aggregate or lightweight options are available
Size: 215 mm (w) x 440 mm (h) x 103 mm (d)

**PRODUCT USE:**
Roost contained within product
Inside chamber has inverted V wedges for different temperature zones and to create different roosting surfaces

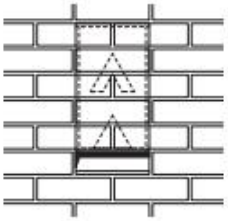
(see Drawings Nos 7, 8 and 20, pp. 70, 72 and 114, respectively)













| | |
|---|---|
| FAMILIAR MATERIAL | Yes |
| EASY TO INSTALL | Yes |
| DURABLE | Yes |
| LOW OR NO MAINTENANCE | Yes |
| FROST RESISTANT | Yes |
| THERMAL MASS | Low to medium |
| FITS UK CONSTRUCTION SIZES | Yes |
| UNFAMILIAR MATERIAL; UNSURE HOW TO PROTECT | N/A |
| THERMAL BRIDGES | Yes, but in outer leaf, outside of cavity insulation, so little effect<br>Access version should only access unheated roof spaces |
| EXPOSED WOOD PARTICLES ON CUT OR DAMAGED EDGES MAY ABSORB MOISTURE | N/A |
| MUST BE MAINTAINED WITH 'SPECIAL' UNFAMILIAR PAINT | N/A |
| EMBODIED ENERGY | Medium |
| EMBODIED CARBON | Medium to high |
| DEGREE OF FIT TO UK CONSTRUCTION SIZES | Fits 2–3 dimensions<br>Stack bond version requires half-cut bricks either side |
| PRODUCT UPTAKE | Unknown |

OTHER

- Can be used in multiples (but lintel required if side by side)
- The stack bond model can be side by side or one on top of another
- The tooth bond model will be spaced apart
- Access versions are available to allow bat entry into roof space
- May absorb urine, which in time may result in localised odour

## SCHWEGLER BAT ROOST RANGE

continued

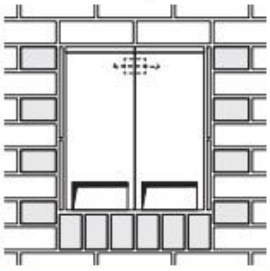
| | |
|---|---|
| FAMILIAR MATERIAL | N/A |
| EASY TO INSTALL | Depends on context and surrounding materials |
| DURABLE | Yes |
| LOW OR NO MAINTENANCE | Some access hatches permit internal cleaning |
| FROST RESISTANT | Yes |
| THERMAL MASS | Medium or high |
| FITS UK CONSTRUCTION SIZES | No |
| UNFAMILIAR MATERIAL; UNSURE HOW TO PROTECT | Yes |
| THERMAL BRIDGES | Where cavity walls bridged will need cavity tray damp proof course |
| EXPOSED WOOD PARTICLES ON CUT OR DAMAGED EDGES MAY ABSORB MOISTURE | Yes |
| MUST BE MAINTAINED WITH 'SPECIAL' UNFAMILIAR PAINT | Some |
| EMBODIED ENERGY | High |
| EMBODIED CARBON | High to medium |
| DEGREE OF FIT TO UK CONSTRUCTION SIZES | Do not coordinate with UK brick construction in two or three dimensions (see Table 3.2 on dimensions) |
| PRODUCT UPTAKE | The use of Schwegler 1FE and 1FR by bats has been confirmed in some mitigation scenarios, but as yet unconfirmed for enhancement |

OTHER

- 2FR allows a larger roost area to be provided
- 1FE, 1FR, 2FR and type 27 can either be set flush or be set into masonry and rendered so that only the entrance or front access panels is visible
- 1FE and 2FR have the capacity to lead to other roosting areas from the rear of the product
- 1FE is the most versatile of the range and can be incorporated into a number of construction types
- Avoid using aluminium nails
- Non-loadbearing wall will need lintel if used in multiples, side by side

### BAT TUBE 2FR

For the creation of spaces for larger bat colonies, with optional access to other roosting areas from the rear of the product
Dimensions as 1FR, but possible to link as multiple units, as shown below, due to transverse connecting holes at the top of the tube. It is recommended to connect at least three of the tubes together
An additional feature is an optional passage through the rear panel to link horizontally through the back to other deeper cavities
Creates a thermal bridge if access is to a heated space, but is suitable if accessing an unheated roof space

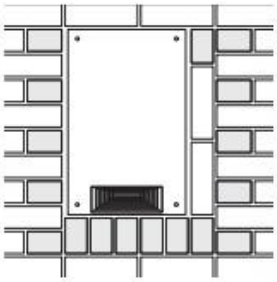




### SUMMER AND WINTER BATBOX 1WI

For installation into the walls of buildings and structures. This design is for hibernation in winter as well as summer use. The interior is designed with different surface textures and areas with changing hanging depths. Uses Schwegler light-concrete.
Dimensions: 350 mm (w) x 550 mm (h) x 95 mm (d)



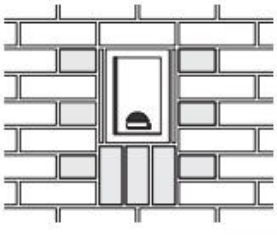




### BRICK BOX FOR BATS TYPE 27

For installation into the walls of buildings and structures
Front access panel is removable.
Dimensions: 180 mm (w) x 265 mm (h) x 240 mm (d)







# ROOFBLOCK

RoofBLOCK

| | |
|---|---|
| FAMILIAR MATERIAL | Yes |
| EASY TO INSTALL | Must be designed in |
| DURABLE | Yes |
| LOW OR NO MAINTENANCE | Yes |
| FROST RESISTANT | Yes |
| THERMAL MASS | High |
| FITS UK CONSTRUCTION SIZES | Yes |
| UNFAMILIAR MATERIAL: UNSURE HOW TO PROTECT | N/A |
| THERMAL BRIDGES | Risk of thermal bridge through thin cavity wall construction – can be improved with wider insulated cavity (see below) |
| EXPOSED WOOD PARTICLES ON CUT OR DAMAGED EDGES MAY ABSORB MOISTURE | N/A |
| MUST BE MAINTAINED WITH 'SPECIAL' UNFAMILIAR PAINT | N/A |
| EMBODIED ENERGY | Medium to low |
| EMBODIED CARBON | Low (eco-cement) |
| DEGREE OF FIT TO UK CONSTRUCTION SIZES | Fits 2 dimensions (see Table 3.2) |
| PRODUCT UPTAKE | Unknown |

OTHER

- Numerous endorsements and accolades as an eco-product (not as a bat roost)
- Roosts can be positioned on any elevation unobtrusively
- Adjacent blocks can be linked
- Made for cavity walls but will fit on half-brick upstand of 1B solid wall
- Fair-faced – no need for rendering over
- Reduces U value locally in wider cavity wall construction with full fill cavity insulation
- Profile may need to be modified with thicker walls and thicker roof and wall insulation (see Drawing No. 6, page 68)
- Eco-cement should have less embodied carbon
- Recycled aggregates are likely to have less embodied energy and/or carbon

TYPE OF PRODUCT:
Bat roost – concrete eaves/verge system

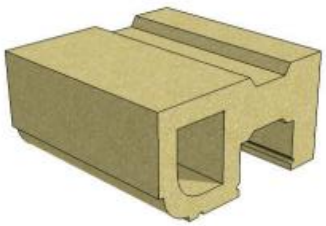
WEBSITE:
www.roofblock.co.uk

WHERE USED:
Flat, hipped or any pitch roof
Outer leaf of cavity wall or half-brick uninsulated walls to outbuildings

PRODUCT INFORMATION:
Made from recycled aggregates and eco-cement

PRODUCT USE:
Block with bat access slit in bottom into interior chamber

(see Drawings No. 6, p. 68)







Miramare Woodstone Bat Box



Beaumaris Woodstone Bat Box