COYLE ENVIRONMENTAL LTD.

Potential Roost Assessment Bat Survey Report for Residential Property in Bushypark in Co. Galway.

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[redacted]

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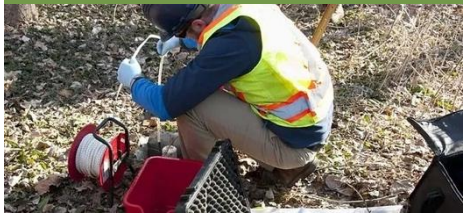

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Document Control	
Project Title:	Potential Roost Assessment Bat Survey Report for Residential Property in Bushypark, Galway.
Project Reference No:	25-120
Project Description:	Potential Roost Assessment Bat Survey Report for Residential Property in Bushypark, Galway.
Status:	DRAFT
Client Details:	Evelyn O'Toole
Issued By:	Coyle Environmental Ltd., 1st & 2nd Floor Kilmurry House, Castlerea, Co. Roscommon F45 DK58.

Document Production & Approval

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Revision History

Rev	Status	Date
0	Draft	16/07/25
1	Draft	13/08/25
2	Final	

Table Of Contents

Executive Summary 1
1. Introduction 2
2. Aims and objectives 2
3. Bats in Ireland 2
3.1. Status 2
3.2. Species 3
3.3. Bat Ecology 3
3.4. Bat roosts 4
3.5. Legislation 5
3.6. Disturbance of Bats and Degradation Licences 6
4. Statement of authority 6
5. Site Description 7
5.1. Development Description 7
5.2. Site Location and Surrounding Environment 7
6. Methodology 11
6.1. Scope & Survey methodology guidelines 11
6.2. Desk study 11
6.3. Daylight Potential Roost Assessment (PRA) Survey 11
6.4. Bat emergence survey 12
6.5. Equipment used 12
7. Survey Constraints 12
8. Results 14
8.1. Desk Study 14
8.2. Site characterisation 16
8.3. Daylight PRA Survey 17
8.4. Bat Emergence Survey 19
8.5. Result Summary 19
9. Potential impacts of proposed works on bats 23
10. Recommendations and Mitigation Measures 24
10.1. Derogation Licence 25
10.2. Mitigation for Works 25
10.3. Breathable Membranes 26
10.4. Lighting 26
10.5. Maintaining habitat 26
11. Conclusion 27
Appendices 28

TABLE OF FIGURES

Figures

Figure 1. Bat life cycle from the BCT Handbook with Emergence survey season indicated by green line. 4
Figure 2. Existing Site Layout (Des Ewing Architects) 8
Figure 3. Proposed Site Layout (Des Ewing Architects) 8
Figure 4. Site Location Map (Des Ewing Architects) 9
Figure 5. Site Location pinned (NPWS Maps) 10
Figure 6. Aerial View of Site with Red Line Boundary shown. 10
Figure 7. Vantage point and habitats map 13
Figure 8. Natura 2000 sites within 15km of site (NPWS) 14
Figure 9. Closest Natura 2000 Sites (SAC in Orange/ SPA in Yellow) and Site in Red (EPA Maps) 15
Figure 10. Mansard roof 18
Figure 11. Roof repair, missing and loose tiles. 18
Figure 12. Second survey vantage point map 21

Tables

Table 1. Bat species resident in Ireland 3
Table 2. NBDC bat suitability index data, previous records and bat roost associations. 16
Table 3. Dusk Emergence Survey Records 07.07.25. 19
Table 4. Dusk Emergence Survey Records 11.08.25. 22

Executive Summary

Bat Potential Roost Assessment and Emergence Surveys were completed in July 2025 by Catherine Howarth, Consultant Ecologist at Coyle Environmental Ltd. for Evelyn O'Toole. An inspection of a residential property in Bushypark, Galway was conducted to determine bat roost suitability, followed by an emergence survey at dusk. An additional Emergence Survey was completed in August 2025. Surveys were carried out in strict accordance with BCT Guidelines and NPWS requirements. The surveys confirmed the following:

- There were several bat species recorded and seen foraging within the garden and surrounds, including Common Pipistrelle, Soprano Pipistrelle and Leisler's Bats.
- The roof has several loose tiles, which have roost potential for crevice dwelling species.
- No. 2 Pipistrelle bats were seen emerging from a loose tile on the southeast corner of the house on 07.07.25.
- Anabat and EchoMeter Touch 2 Pro Bat detectors and Nightfox Whisker Night Vision Binoculars were used for the duration of the survey.
- The house surrounds, garden and treeline are actively used by bats for foraging and commuting.
- No. 6 Pipistrelles bats were recorded emerging from the roost under the loose tile on the southeast roof corner of the house on 11.08.25.

Recommendations are outlined in section 10, which include the following:

- Application for Derogation license from NPWS.
- Externally mounted Bat boxes are to be provided prior to and during the construction phase.
- Construction Management Plan to include mitigation measures:
    - Correct timing of works to minimise impacts on local bat population.
    - An Ecological Clerk of Works (ECoW) to be present on-site during key demolition activities including the appropriate installation of alternative habitat
    - Soft stripping of the roof to be supervised be a suitably qualified Bat Ecologist and ECoW to oversee works and give expert advice and direction to staff.
- Use of bat safe materials
- A sensitive lighting plan to be implemented as part of the development plan. These measures are to reduce light pollution and for the benefit of all nocturnal species in the area.
- The treeline and mature vegetation should be retained wherever possible.
- Bat boxes to be incorporated into the development design post construction.

A Bat Mitigation Plan can be developed for the proposed development, including a lighting plan, to avoid, reduce and mitigate impacts to bat species, at the request of the Competent Authority.

1. Introduction

A Bat Potential Roost Assessment Survey was completed in July 2025 by Catherine Howarth, Consultant Ecologist at Coyle Environmental Ltd. for Evelyn O'Toole. An inspection of a residential property in Bushypark, Galway was conducted to determine bat roost suitability, followed by an emergence survey at dusk. An additional emergence survey was conducted in mid-August 2025.

2. Aims and objectives

The current study aims to determine if there is potential for Bat species to be roosting within the subject site. The objectives are as follows:

- To assess the habitat for potential roost suitability.
- To investigate any evidence of, or to determine if, bats are roosting at the main structures on-site by completing a daylight Potential Roost Assessment and Emergence Survey in accordance with current BCT and BCI Guidelines.
- To assess the impact(s) the proposed development could have on bats.
- To suggest impact avoidance measures, where appropriate.

3. Bats in Ireland

3.1. Status

The serious decline in bat populations both in Ireland and across Europe has led to conservation measures and appropriate legislation being drawn up and implemented to stabilise population numbers. As highly specialised animals, bats serve as biological indicators and are often amongst the first animal species to show signs of population change due to the activities of man.

Bats' dependency on insects has left them vulnerable to habitat destruction, land drainage, agricultural intensification and increased use of pesticides. Their reliance on buildings has also made them vulnerable to building repairs and the use of chemicals for timber treatment. Roosting or hibernation sites in caves, mines, trees and disused buildings are also often lost to development.

It is estimated that bat populations across Europe have decreased by up to 60% in the last 30 years. Efforts should be made to retain known bat colonies and methods to lessen disturbance to these animals should be incorporated into any development. All Irish Bats are protected under national and EU legislation. Both the animals themselves and their roosts are protected, and it is an offence to disturb or interfere with them without a licence.

3.2. Species

Bats belong to the Order Chiroptera and to date nine species are recorded as resident in Ireland (Table 1), excluding vagrants such as Brandt's Bat and Greater Horseshoe Bat. These 9 species belong to two families; eight species are in the family Vespertilionidae, and one is in the Rhinolophidae family. Several of them, like the Common and Soprano Pipistrelles, are widespread and common, others, such as the Lesser Horseshoe Bat, are relatively rare and restricted in distribution.

Table 1. Bat species resident in Ireland

Common Name	Species
Brown Long-Eared Bat	*Plecotus auritus*
Common Pipistrelle	*Pipistrellus pipistrellus*
Daubenton's Bat	*Myotis daubentonii*
Leisler's Bat (Lesser Noctule)	*Nyctalus leisleri*
Lesser Horseshoe Bat	*Rhinolophus hipposideros*
Nathusius's Pipistrelle	*Pipistrellus nathusii*
Natterer's Bat	*Myotis nattereri*
Soprano Pipistrelle	*Pipistrellus pygmaeus*
Whiskered Bat	*Myotis mystacinus*

3.3. Bat Ecology

The warmer nights beginning in May see bats emerge to feed and towards the end of the month female Bats congregate for maternity colonies and begin to roost collectively. From May to August pregnant females may give birth to a single pup with twins occasionally occurring. The pups are cared for in a nursing colony for around 4 weeks until they can fly. At 6 weeks pups are weaned.

From spring to autumn bats emerge at night to forage for insect prey. Bats rest during the day (day roosts), where for most species, they will be hidden from view, even when using roof spaces. Bats also use night roosts for temporary rest and/or as feeding perches.

Throughout autumn bats seek to build enough body fat to sustain them through their winter hibernation. Hibernation is initiated following a change in weather and day length, which stimulates hormonal changes, in Ireland this is usually after September. Irish bats will enter a state of hibernation or may migrate. Occasionally on warm winter nights bats may emerge from hibernation to forage, or in response to their metabolic requirements. It may take up to 20 minutes for them to become active from a torpid state, using up valuable energy reserves each time, making them extremely vulnerable.

For surveyors the optimum time to conduct activity surveys for bats in between the start of May and September, when bats are likely to be active and feeding on nights with favourable weather conditions.

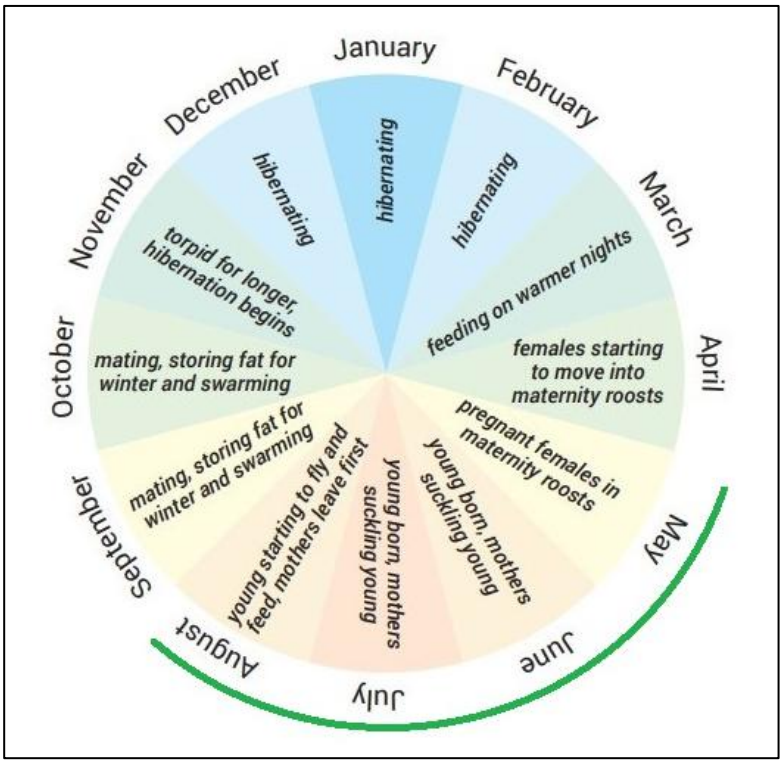

Figure 1. Bat life cycle from the BCT Handbook with Emergence survey season indicated by green line.

3.4. Bat roosts

Different bat species demonstrate unique preferences for foraging habitats and roosting. Almost any structure can be utilized as a bat roost. Roosts can be in buildings (dwelling houses, farms, barns, ancient monuments, churches, fortifications, and industrial buildings), cave-like places (natural caves, mines, cellars, limekilns, icehouses, tunnels and under bridges) and hollows in trees (including hedgerows and woodlands).

There are several types of bat roosts, including maternity roosts, harem, day roosts, feeding perches, night roosts, mating roosts, satellite roosts, transitional roosts and winter hibernaculum. Any given roost is not usually occupied entirely throughout the year as bat colonies frequently

move. However, the same site tends to be occupied by the same colony during the same season each year. Distances between roosts may be only a few metres, or many kilometres.

The species most likely to be found in houses are the Pipistrelle spp., and these often roost in large numbers. In Ireland, the Leisler's Bat is the next most found species in buildings. They also roost in barge boards/soffit areas and within roof spaces. Brown Long Eared Bats prefer the open roof areas of older buildings, such as barns and outhouses. Whiskered and Natterer's Bats are occasionally found in house roofs, but more often in the stonework of bridges, tunnels, castles and other such buildings. Daubenton's bats often prefer the masonry of bridges and Lesser horseshoe bats were originally cave dwellers, but summer colonies are found in roof spaces with access that allows an uninterrupted flight to the roof apex.

3.5. Legislation

3.5.1. Irish Legislation

Under the Republic of Ireland's Wildlife Acts 1976 to 2021, it is an offence to intentionally harm a bat or disturb its resting place. All bat species are protected under the Wildlife Acts, which make it an offence to wilfully interfere with or destroy the breeding or resting place of these species without a licence. All species of bats in Ireland are listed on Schedule 5 of the 1976 Act, and are therefore subject to the provisions of Section 23, which make it an offence to:

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

3.5.2. E.U. Legislation

The EC Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive 1992), seeks to protect rare and vulnerable species, including all species of Bats, and their habitats and requires that appropriate monitoring of populations be undertaken. All species of bat found in Ireland are listed in Annex IV of the Directive, while the Lesser Horseshoe bat is afforded further protection under Annex II, requiring the designation of Special Areas of Conservation specifically for their protection.

All species of bat in Ireland are strictly protected under the Habitats Directive to include deliberate disturbance of these species, particularly during the periods of breeding, rearing and hibernation. It also specifies deterioration or destruction of breeding or resting places. The Habitats Directive is transposed into Irish law by The European Communities (Birds and Natural Habitats Regulations 2011 (S. I. No. 477 of 2011). These Regulations substantially strengthen the protection provided by the Wildlife Acts. All Bat species are listed on the First Schedule and Section 23 of the Regulations makes it an offence to:

- Deliberately capture or kill a bat.
- Deliberately disturb a bat.
- Damage or destroy a breeding site or resting place of a bat

3.5.3. International Legislation

Ireland has ratified two international wildlife laws pertaining to bats:

a) The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention, 1982) – part of this convention stipulates that all bat species and their habitats are to be conserved.
b) The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979, Enacted 1983). This was instigated to protect migrant species across all European boundaries.

3.6. Disturbance of Bats and Degradation Licences

Section 27 of the 2011 regulations necessitates that all public authorities have a responsibility to avoid the deterioration of natural habitats and species protected under the Birds and Habitats Directives/Regulation, and to exercise their functions and statutory powers in compliance with the Directives' requirements. Planning authorities are required to consider the presence of protected species, including bats, when considering applications for planning permission and may refuse applications on the grounds of adverse effects on these species or if an assessment of the impact of the development on protected species is inadequate.

A grant of planning permission does not constitute a licence or permit to disturb bats or interfere with their breeding or resting places. Applications may be made to the National Parks and Wildlife Service for a derogation licence to permit actions affecting Bats or their roosts that would normally be prohibited by law. The applicant must demonstrate that there is no satisfactory alternative and that the action will not adversely affect the favourable conservation status of the Bats. Each case is considered on its circumstances.

The National Parks and Wildlife Service strongly advises developers to seek the services of a professional Ecologist, with appropriate experience in assessing bat populations, when contemplating a development proposal that would affect bats or their roosts.

4. Statement of authority

Catherine Howarth is a Consultant Ecologist at Coyle Environmental. She has a BSc (Honours) in Conservation Biology and Ecology from the University of Exeter, a Certificate in Ecological Consultancy from ETUK and a PGCE in secondary science from the University of Chester. She has over 17 years' experience in habitat monitoring and surveying, report writing, science communication and education, project management and liaising with stakeholders and local

authorities. Catherine is an Associate member of CIEEM and has been based in Ireland for the last 7 years. She is Bat Panel member and regular volunteer with Bat Conservation Ireland. Catherine is a licenced Bat Ecologist, NPWS licence DER-BAT-2025-187 (Survey licence, expires 31st December 2025).

5. Site Description

5.1. Development Description

Evelyn O'Toole is applying to Galway County Council for planning permission for development consisting of the demolition of existing house and construction of new two storey house with garage plus new wastewater treatment system and associates site works at Bushypark, Galway, County Galway. The existing site layout can be seen in Figure 2 and the proposed site layout is shown in Figure 3.

5.2. Site Location and Surrounding Environment

The site is approximately 0.27 hectares and is located in Ballagh, Bushypark, Galway City (Grid Ref. M 2666827519). The site is located on the L5007. The surrounding land use is primarily a residential area and agricultural grassland. Site location maps are shown in Figures 4 and 5. An aerial photograph with the red line boundary indicated is shown in Figure 6. Photos plates are included in Appendix 2.

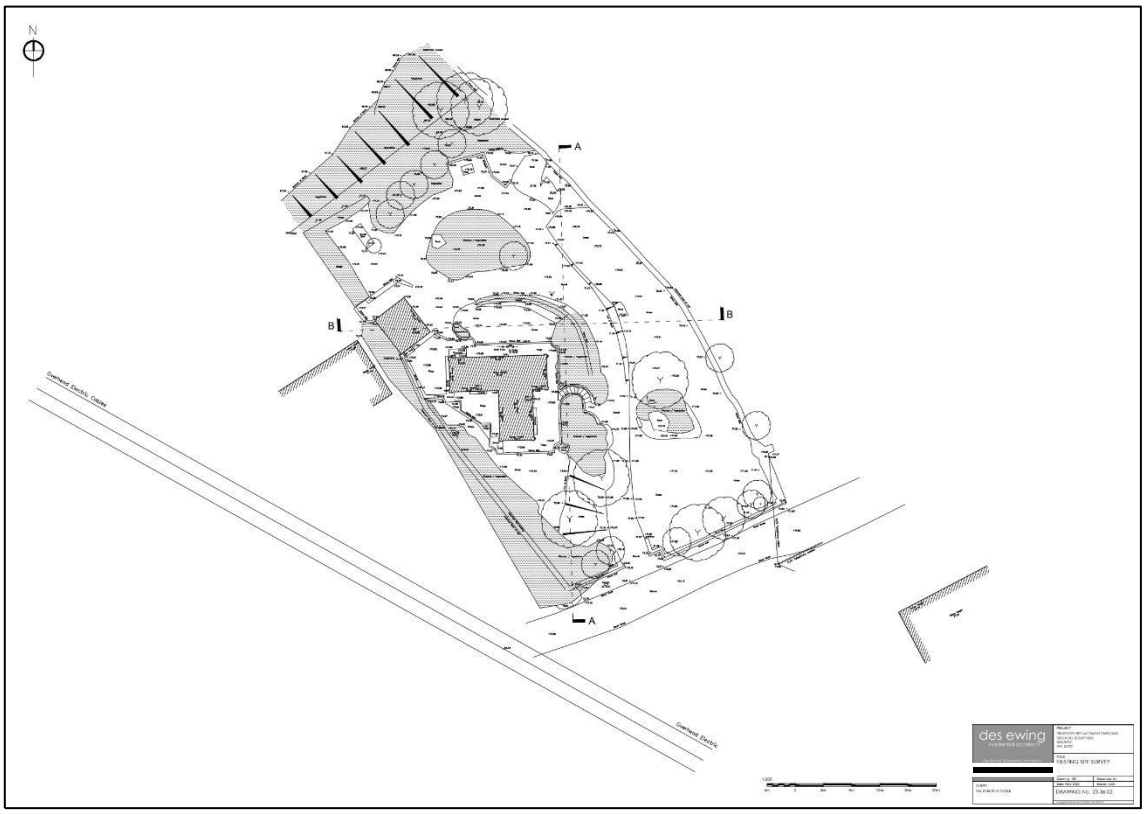

Figure 2. Existing Site Layout (Des Ewing Architects)

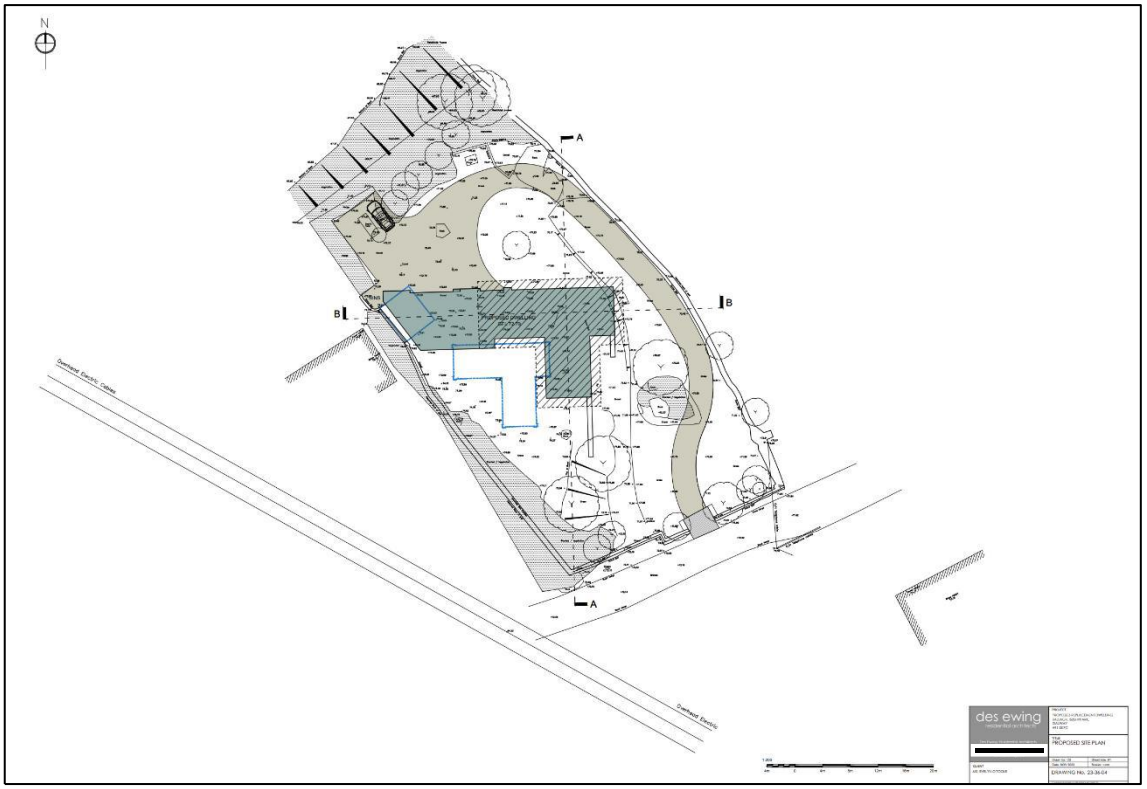

Figure 3. Proposed Site Layout (Des Ewing Architects)

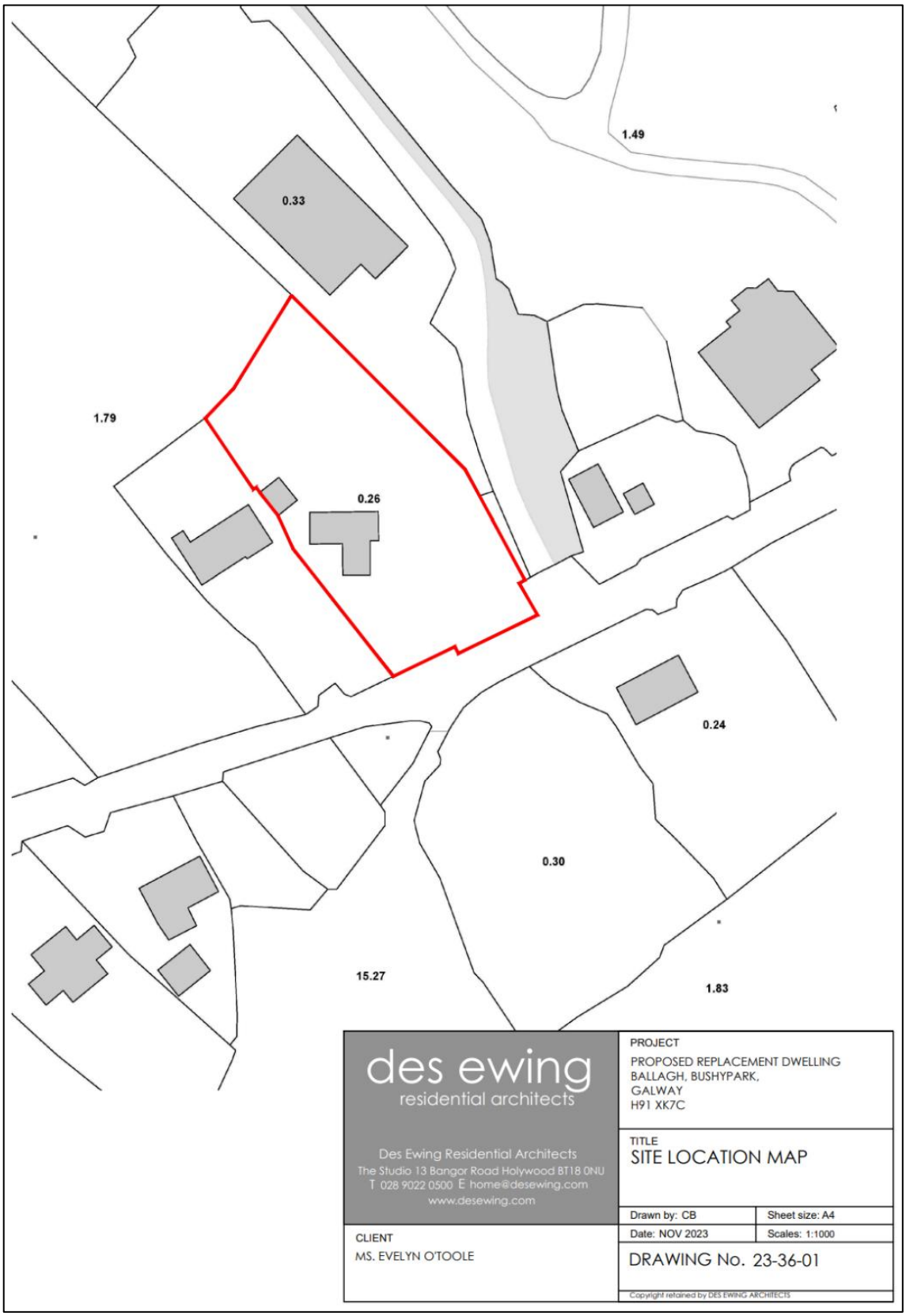

Figure 4. Site Location Map (Des Ewing Architects)

Figure 5. Site Location pinned (NPWS Maps)

Figure 6. Aerial View of Site with Red Line Boundary shown.

6. Methodology

6.1. Scope & Survey methodology guidelines

The scope of the assessment reflects the size and likely impact of the proposed development and is deemed project proportional. Surveys were completed by Catherine Howarth BSc Hons., Consultant Ecologist with Coyle Environmental Ltd., and colleague Michael Cizek. An Anabat Scout, an EchoMeter 2 Pro and two static Infrared night vision cameras were deemed sufficient to provide full visual and acoustic coverage of the existing house.

The Zone of Influence (ZOI) of the current study is the house, shed, the adjacent trees and any other structures within the ZOI. The current surveys were undertaken in accordance with approved methodologies, including those documented by the NIEA/NPWS, The Chartered Institute of Ecological and Environmental Management, the Mammal Society and the Bat Conservation Trust and Bat Conservation Ireland Guidelines. All work has been undertaken according to the Chartered Institute of Ecology and Environmental Management (CIEEM) Code of Professional Conduct (CIEEM, 2022) and in compliance with all relevant national and international legislation. Desk-based and field-based work and all reporting have been conducted according to the Bat Conservation Trust (BCT) Bat Surveys - Good Practice Guidelines, 3rd Edition (Collins, J. 2016).

The bat survey consisted of a daylight inspection of the existing buildings externally and internally as part of a Potential Roost Assessment, followed by an Emergence Survey at dusk.

6.2. Desk study

A desk study of the subject site was undertaken to collect any available information on bats and to identify any habitats and features likely to be used by bats. The following sources were consulted:

- Review of aerial photography of the study using EPA Maps
- Review of online web-mappers: EPA AA Maps and National Parks and Wildlife Service (NPWS)
- Review of NPWS Site Synopses and Conservation Objectives documents
- A search of the National Biodiversity Data Centre database was undertaken.

6.3. Daylight Potential Roost Assessment (PRA) Survey

The daylight survey was conducted on 7th July 2025 using a high-powered torch and binoculars. Internally, the accessible loft area of the house and ceilings were examined, the shed roof, floors and walls were searched for bats or signs of bats in the form of dead bats, bat droppings, staining or culled insect fragments. Externally, observations were made of the surrounding habitat types and conditions, the temperature regime, light levels, protection from the elements, constructional detailing, potential roost locations and potential access points.

The structures and trees within the ZOI, were examined using binoculars to look for potential entry/exit points and the following features were inspected:

- Windowsills and panes.
- External finishes.
- Tiles and slates
- Walls/cavity structures.
- Eaves.
- Fascia and soffit boards.
- Barge boards.
- Door frames
- Vents
- Gaps/voids
- Chimney.
- Panelling.

6.4. Bat emergence survey

A dusk bat detector survey was conducted from 20 mins before sunset until 2 hours after sunset on 7th July. Four survey positions were deemed sufficient to provide full visual and acoustic coverage of the house and surrounds: Vantage point A at the southeast corner of the house, Vantage point B to the north of the house, Vantage Point C at the northwest corner and Vantage Point D at the southwest corner. See surveyor locations in Figure 7.

6.5. Equipment used

Equipment used included Echo Meter Touch 2 Pro and Anabat Scout full spectrum detectors, along with Nightfox Whisker Night Vision Binoculars to record any relevant Bat activity.

7. Survey Constraints

There were no constraints associated with this survey. It was possible to access all parts of the buildings. The survey was conducted within the recommended time-period for surveying bats in buildings. The weather on the survey date was mostly favourable with dry, cloudy conditions, low wind and temperatures of 14°C.

Figure 7. Vantage point and habitats map

8. Results

8.1. Desk Study

8.1.1. Designated Sites

There are 9 Natura 2000 sites within a 15km radius of the site, see Figure 8. The closest is the Lough Corrib SAC 1.16km northeast of the site.

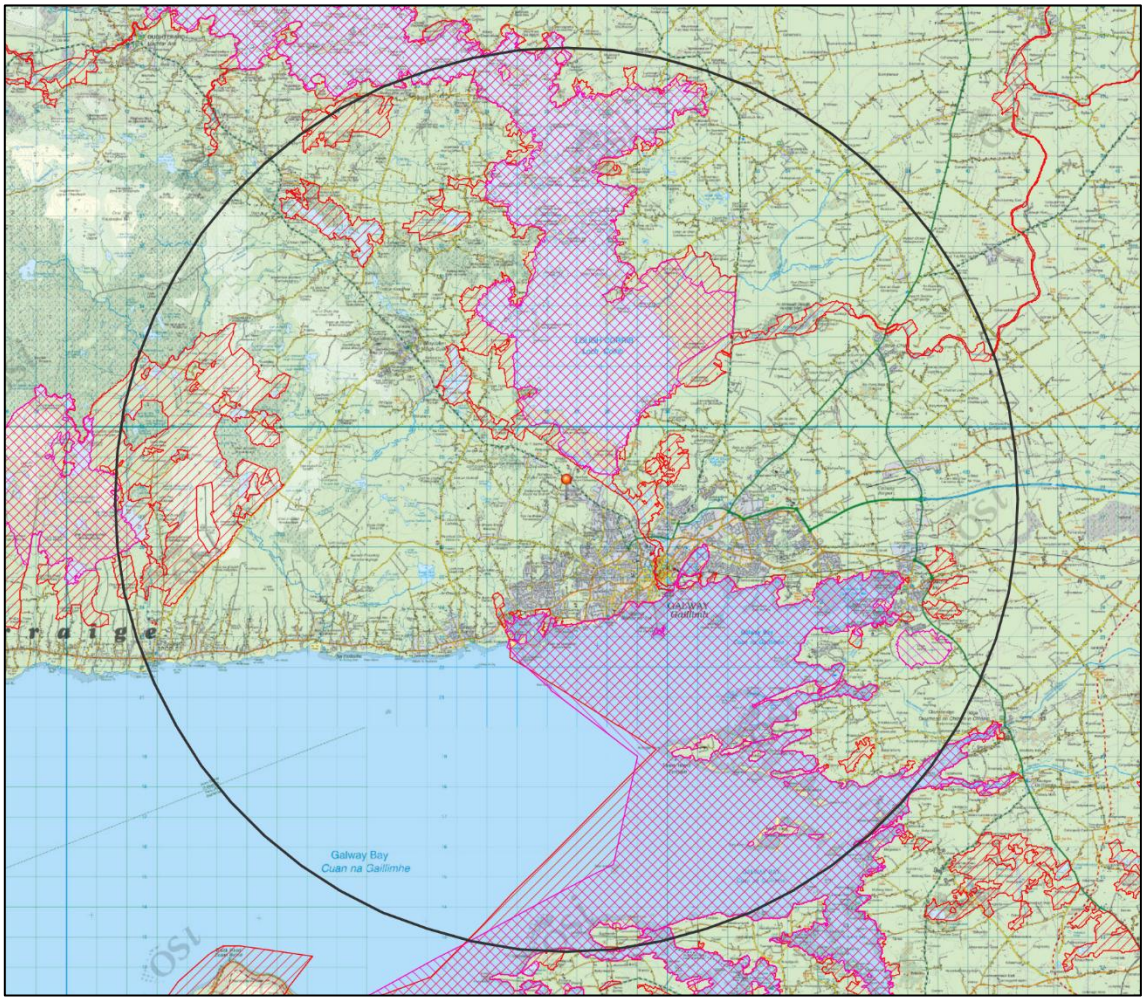

Figure 8. Natura 2000 sites within 15km of site (NPWS)

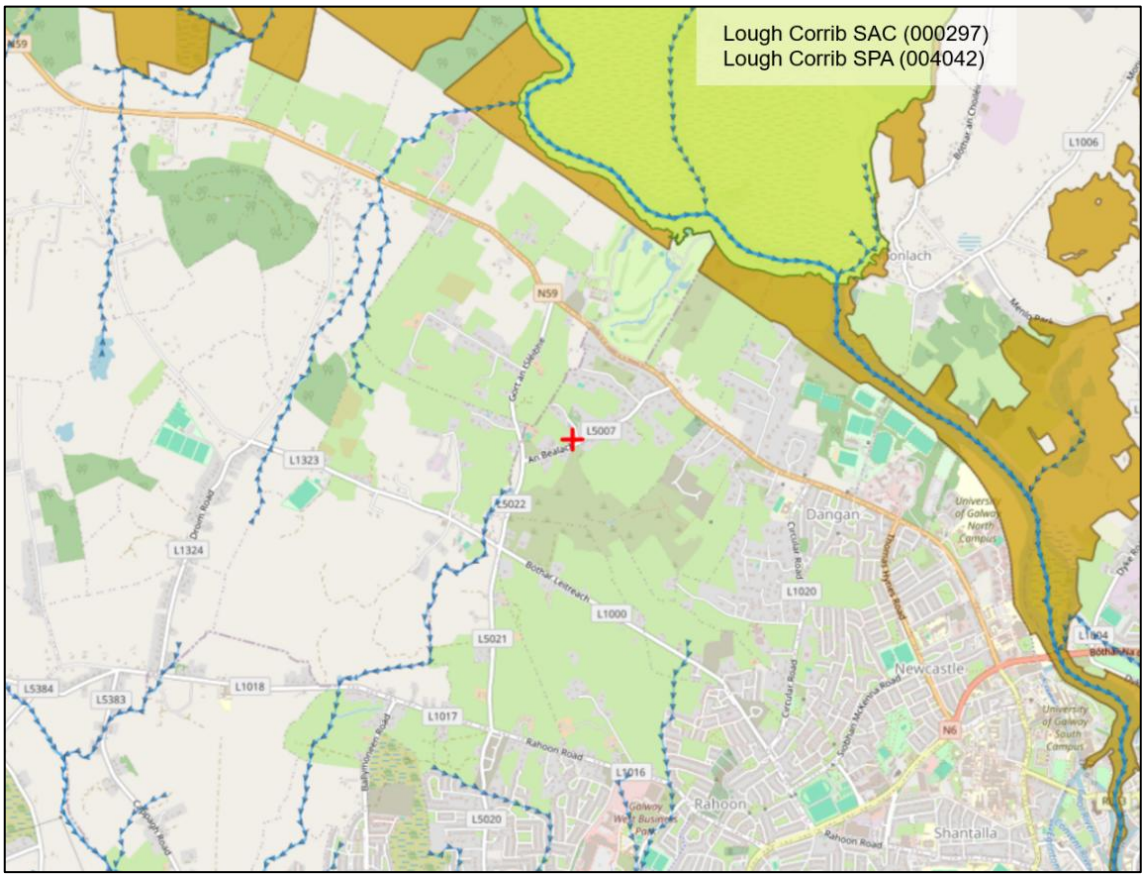

Figure 9. Closest Natura 2000 Sites (SAC in Orange/ SPA in Yellow) and Site in Red (EPA Maps)

8.1.2. National Biodiversity Data Centre (NBDC) Records

A search of the NBDC database was carried out to examine the suitability of the proposed site for bat species found in Ireland. The Bat suitability index from the NBDC ranges from 0 to 100, with 0 showing least favourable conditions and 100 most favourable for bats. The results of the search, previous bat record within 2km of the site and bat species associations with building roosts are shown in Table 2.

There are no Lesser Horseshoe Bat (*Rhiniolophus hipposideros*) records within 2km of the application site or foraging range associated with any of the Natura 2000 sites within the 15km of the application site.

Table 2. NBDC bat suitability index data, previous records and bat roost associations.

Common Name	Species	Bat suitability Index	Previously recorded within 2km^2 of survey site?	Bat association with building roost types.	
				Maternity	Hibernation
Brown Long-Eared Bat	*Plecotus auritus*	39	No	High	High
Common Pipistrelle	*Pipistrellus pipistrellus*	39	No	High	High
Daubenton's Bat	*Myotis daubentonii*	38	No	Medium	Low
Leisler's Bat	*Nyctalus leisleri*	43	No	High	Low
Lesser Horseshoe Bat	*Rhinolophus hipposideros*	14	No	High	Medium
Nathusius's Pipistrelle	*Pipistrellus nathusii*	15	No	High	Data Deficient
Natterer's Bat	*Myotis nattereri*	33	No	High	Low
Soprano Pipistrelle	*Pipistrellus pygmaeus*	51	Yes	High	High
Whiskered Bat	*Myotis mystacinus*	6	No	High	Low

8.2. Site Characterisation

The subject site is located on Ballagh Road, Bushypark, Galway. The site consists of an unoccupied house, and one shed that are to be demolished for the construction of a new two storey house with garage plus new wastewater treatment system. The garden surrounds the house on three sides, and consists of lawn, patio area, driveway, flower beds and ornamental shrubs and trees. The site is bounded by trees and shrubbery.

The habitat present on the application site have been classified according to A Guide to Habitats in Ireland (Fossitt, 2000). The main habitats on site are Buildings and Artificial Surfaces (BL3), Amenity Grassland (GA2), Flower Bed and Borders (BC4), Ornamental Shrub (WS3) and

Treelines (WL2). The site is well connected to the surrounding environment by linear features such as the laneway and treeline.

8.3. Daylight PRA Survey

Firstly, an external inspection of the house was carried out deeming it to have a moderate roost potential. The house is of block build with a slated mansard roof; all windows and doors of the building are intact. There were signs of roof tile repair/ replacement on the southwest roof and several missing tiles. On each roof aspect there were several loose slates and ridge tiles with moderate roost potential for crevice dwelling bat species. No cracks are cervices were noted around the doors and windows. The soffit and fascia all showed some signs of wear, however there was little potential for roost entry or egress points. The house was deemed to have moderate roost potential. A single bat dropping was found on the window ledge on the east of the house.

The internal inspection of the house showed some previous water ingress below the southwest roof. The accessible loft space was examined. No signs of bats were found.

An inspection of the shed was conducted. The shed is of block concrete construction with a corrugated metal roof and a wooden door. Located on the west of the site, beside the house and site boundary. The shed had several circular holes of around 15cm diameter toward the top of the walls. The shed appeared to be well maintained. No signs of bat activity were recorded within the shed, such as droppings, insect wings or staining.

All trees on site were rated low roost potential. These trees are of value in terms of ecological corridors, the continuity of the treelines and the lack of public lighting in the surrounding area. Survey photos are in Appendix II.

The most suitable vantage points for the emergence survey were identified and conditions recorded.

Figure 10. Mansard roof

Figure 11. Roof repair, missing and loose tiles.

8.4. Bat Emergence Survey

Date: 7th of July 2025.

Start time: 21:35 (sunset 22:03).

End time: 00:05.

Weather conditions: 90% cloud cover, no rain forecast, 14°C at sunset, wind force 4 on Beaufort scale. The temperature at 00:05 was 9°C and there were light showers between 21:40 and 22:00.

Structure: Four survey positions were deemed sufficient to provide full visual and acoustic coverage of the house: Vantage point A at the southeast corner of the house, Vantage point B to the north of the house, Vantage Point C at the northwest corner and Vantage Point D at the southwest corner. Table 3 indicates the survey results of the dusk emergence survey. Map 1 (Appendix 3) shows the location of recorded Bat activity noted throughout the surveys.

Table 3. Dusk Emergence Survey Records 07.07.25.

Map Reference	Time	Observation
1	22:31	Pipistrelle emerged from roof on southeast corner and flew overhead
2	22:32 - 22:34	Common Pipistrelle feeding
1	22:36	Pipistrelle emerged from southeast corner of house and flew northeast
x	22:37	Leisler's Bats x 2 heard not seen
3	22:38	Common Pipistrelle flew from over vegetation to south eastwards
2	22:41- 22:45	Soprano Pipistrelle feeding
3	22:48	Pipistrelle spp. x 2 flew from over vegetation to south eastwards
4	22:51	Soprano Pipistrelle flew around house southeast to southwest
5	22:56 – 22:59	Pipistrelle spp. recorded and seen flying overhead
6	23:07- 23:11	Soprano Pipistrelle feeding x 3
x	23:38 – 00:01	Pipistrelle spp. recorded foraging but not seen x3

8.5. Result Summary

Common pipistrelle, Soprano pipistrelle and Leisler's Bats were observed and recorded on the bat detectors between 22:31 and 00:01. Both Common and Soprano Pipistrelles were recorded

and seen foraging within the garden and surrounds. The roof has several loose tiles, which have roost potential for crevice dwelling species. No. 2 Pipistrelle bats were seen emerging from a loose tile on the southeast corner of the house. Both Pipistrelle bats and Leisler's Bats are listed on Annex IV of the Habitats Directive.

The garden, adjacent laneway, treeline and adjacent hedgerow habitats are active foraging and commuting routes for several bat species, including Pipistrelle spp. and Leisler's bats.

Further surveys are required to gather the required information to determine the type of roost and its seasonal use. These additional surveys are required to determine whether there may be any significant impact to the local bat population (or otherwise), from the proposed development works and to inform a derogation license application.

9. Further Surveys

9.1. Bat emergence survey methodology

A dusk bat detector survey was conducted from 20 mins before sunset until 2 hours after sunset on 11th August 2025. Two survey positions were deemed sufficient to provide full visual and acoustic coverage of the identified bat roost: Vantage point A at the southeast corner of the house, Vantage point B to the south of the house. See surveyor locations in Figure 12.

9.1.1. Equipment used

Equipment used included Anabat Scout full spectrum detector, and two Nightfox Whisker Night Vision Binoculars to record any relevant Bat activity.

9.2. Survey Constraints

There were no constraints associated with this survey. The survey was conducted within the recommended time-period for surveying bats in buildings. The weather on the survey date was favourable with dry, clear, low wind and temperatures of 24°C.

Figure 12. Second survey vantage point map

9.3. Bat Emergence Survey Results

Date: 11th of August 2025.

Start time: 20:50 (sunset 21:12).

End time: 23:15.

Weather conditions: 10% cloud cover, no rain, 24°C at sunset, wind force 0 on Beaufort scale. The temperature at 23:15 was 20°C. Weather conditions remained consistent throughout the survey.

Structure: Two survey positions were deemed sufficient to provide full visual and acoustic coverage of the identified bat roost: Vantage point A at the southeast corner of the house, Vantage point B to the south of the house. Table 4 indicates the survey results of the dusk emergence survey. Map 2 (Appendix 3) shows the location of recorded Bat activity noted throughout the surveys.

Table 4. Dusk Emergence Survey Records 11.08.25.

Map Reference	Time	Observation
1 & 2	21:31	Pipistrelle emerged from roost under tile on southeast corner x2
3	21:33	Pipistrelle emerged from roost under tile on southeast corner flying south
4	21:33	Soprano Pipistrelle feeding
5	21:34	Soprano Pipistrelle feeding
x	21:36	Leisler's Bat heard not seen
1	21:38	Pipistrelle emerged from roost under tile on southeast corner
6	21:38	Soprano Pipistrelle feeding
1	21:39	Pipistrelle emerged from roost under tile on southeast corner
4, 5 & 6	21:40 – 21:41	3x Soprano Pipistrelle flew around house and garden feeding, multiple passes.
5 & 7	21:42	Pipistrelle feeding over garden hedge and treeline to the south and east
	21:43 – 21:51	Common and Soprano Pipistrelle spp. feeding, multiple passes overhead
1	21:51	Pipistrelle emerged from roost under tile on southeast corner
	21:52 – 21:58	Pipistrelle spp. feeding, multiple passes x8
5	22:05 – 22:07	Soprano Pipistrelle flying overhead
5 & 7	22:10	Soprano Pipistrelle feeding, 3 passes
	22:14	Soprano Pipistrelle feeding, 5 passes
x	22:31	Soprano Pipistrelle heard not seen
x	22:46	Leisler's Bat heard not seen
x	22:57 – 23:01	Soprano Pipistrelle heard not seen, multiple passes

9.4. Result Summary

Common pipistrelle, Soprano pipistrelle and Leisler's Bats were observed and recorded on the bat detectors between 21:31 and 23:00. Both Common and Soprano Pipistrelles were recorded and seen foraging within the garden and surrounds. Previous survey work identified an active bat roost under a loose tile on the southeast corner of the house. No. 6 Pipistrelle bats were seen emerging from this roost.

The garden, adjacent laneway, treeline and adjacent hedgerow habitats are active foraging and commuting routes for several bat species, including Pipistrelle spp. and Leisler's bats.

All Irish bat species including Soprano Pipistrelles are listed on Annex IV of the Habitats Directive.

10. Potential impacts of proposed works on bats

The proposed works include the demolition of the existing house and shed, construction of a new two storey house with garage plus new WWTS and associated works.

Demolition of the existing house is likely to have a significant negative effect on the existing bat roost. The demolition of the existing roof and building works would remove the bat roost, and any bats present may be injured, killed or be caused to take flight in daytime, exposing them to a risk of predation, in absence of appropriate mitigation.

The killing of bats or destruction / disturbance of a roost would constitute an offence under the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) and the Wildlife Act 1976 (as amended).

According to IWM 134 Bat Mitigation Guidelines (2022) “Works associated with development or building work are likely to lead to an increase in human presence at the site, extra noise, lighting and changes in the site layout and local environment. All these may have a detrimental effect on the bats, which seek particular environmental conditions, such as a low incidence of direct human disturbance, particular temperature, lighting and humidity regimes and a stable internal and external layout so they can continue to follow established flight-paths”

“The impact of the loss of roosts on bat populations is poorly understood and difficult to study, though it is believed to be an important factor in the decline of bat populations generally.”

The demolition of the shed and WWTS installation should not disturb any existing bat roost or cause significant disturbance to foraging bats.

Pipistrelle spp. were confirmed at the site. Pipistrelle bats require a complex mosaic of habitats to support foraging, roosting and commuting behaviour. Maternity colonies are mainly found in buildings during the summer in cracks and crevices in buildings, behind panelling, shutters and eaves. Linear features in a landscape are important elements for orientation either during foraging or commuting flights. Foraging activity is in small areas within about 2km of the roost. There are several types of bat roosts, including maternity roosts, harem, day roosts, feeding perches, night roosts, mating roosts, satellite roosts, transitional roosts and winter hibernaculum. Any given roost is not usually occupied entirely throughout the year as bat colonies frequently move. In summer the roost sites are predominantly in crevices in buildings, especially between tiles and the underlying roofing or behind boards on the gable. Maternity roost sizes are extremely variable and range from numbers of 20 to over 1000 Bats (Speakman et. al., 1999).

Based on the results, it is concluded that the proposed works could have a significant negative impact on any bat species inhabiting the structure, in the absence of appropriate mitigation.

A derogation licence and the relevant permissions will be required from NPWS, prior to the commencement of any works. Furthermore, legislation indicates that the loss of a bat roost should be appropriately mitigated by providing a suitable replacement roost. Details of the mitigation required to reduce potential ecological impacts is given in Section 10 below.

11. Recommendations and Mitigation Measures

The following mitigation and compensation options provided follow the established mitigation hierarchy which seeks a preference to avoid impacts, then to mitigate unavoidable impacts, and as a last resort, to compensate for unavoidable residual impacts that remain after avoidance and mitigation measures; any licence/permit requirements are contained within this section.

All recommended surveys and mitigation measures follow current best practice guidance, as identified by CIEEM (2022) and are proportionate to the level of impact identified and to the nature and scale of the proposed works. The satisfactory completion of all necessary mitigation measures and any necessary monitoring and subsequent reporting shall be the entire responsibility of the applicant and may be conditioned by the Competent Authority. Furthermore, the remit of any recommended Ecological Clerk of Works shall include all conditioned requirements of the competent authority and relevant stakeholder(s).

Impacts on roosting bats can be minimised through the timing of works, supervision by an ecologist, exclusion of roosting sites and (if required) manual removal of bats from the structure. Alternative roosting opportunities can be provided in a suitable area nearby, which will ensure that bats can continue to roost in the area.

Mitigation measures and legislative requirements (derogation licence) have been outlined within this section, including provision for the precautionary principle, and are summarised below:

- Application for Derogation license from NPWS.
- Externally mounted Bat boxes are to be provided prior to and during the construction phase.
- Construction Management Plan to include mitigation measures:
    - Correct timing of works to minimise impacts on local bat population.
    - An Ecological Clerk of Works (ECoW) to be present on-site during key demolition activities including the appropriate installation of alternative habitat
    - Soft stripping of the roof to be supervised be a suitably qualified Bat Ecologist and ECoW to oversee works and give expert advice and direction to staff.
- Use of bat safe materials
- A sensitive lighting plan to be implemented as part of the development plan. These measures are to reduce light pollution and for the benefit of all nocturnal species in the area.

- The treeline and mature vegetation should be retained wherever possible.
- Bat boxes to be incorporated into the development design post construction.

11.1. Derogation Licence

The Habitats Directive and national legislation stipulate that protected species, such as bats, must have their favourable conservation status maintained or enhanced at a local, regional and national level. An application for a derogation licence to NPWS (including a site-specific Bat handling licence issued to the Bat Ecologist) will need to be granted prior to any changes and/or potentially impacting activities are carried out. All works are to be carried out in strict accordance with NPWS requirements and best practice guidelines.

11.2. Mitigation for Works

11.2.1. Timing of works

The licence shall include detailed information on roost provision by way of mitigation and timings of the proposed works. The timing of the stripping of all areas considered to hold potential to support bats, such as the roof tiles/coverings, cladding, ridgeline and soffits, would be restricted to certain times of the year when bats are less vulnerable to disturbance.

Therefore, this work shall be undertaken in September/October or March/April to avoid disturbance to bats during the key breeding and hibernating periods, and in strict accordance with any licence permission(s).

11.2.2. Provision of alternative roosting spaces

Prior to demolition, tree and/or pole-mounted Bat boxes, such as Schwegler 1FD and Schwegler 1FF, will be installed near to the buildings prior to the supervised works.

11.2.3. Exclusion of bats

A bat survey will be carried out prior to demolition, comprising an endoscope and / or emergence / re-entry survey of the building. Where the roosting location has been identified, a one-way exclusion tube will be put in place at the roost exit point. Any crevices that do not contain bats (to be ascertained using an endoscope) will be blocked. The surveyor will then wait one night to allow bats to leave the roost and will re-survey the buildings.

11.2.4. Supervised works

When the exclusion process is complete, an experienced ecologist (ECoW) will supervise the roof works. Soft stripping of the building's key fabric components is required around the roosting site. If any bats are uncovered during this process, they will be transferred to a cotton holding bag and placed in one of the bat boxes. Following hand stripping of the roof structure and relevant features, the structure is to be left for at least 24 hours prior to further demolition works being carried out. Once all potential roost sites identified by the ecologist have been removed, the remainder of the structures can be demolished without further supervision

Prior to any works to the building, all personnel shall be given a toolbox talk by the ecologist named in the licence to ensure that the appropriate level of care is undertaken when carrying out the work. Prior to any work commencing, an internal survey of the buildings will be undertaken by the Ecologist, and should it be required, any bats found will be caught in a hand net and released later that evening.

11.3. Breathable Membranes

Modern roof linings and breathable membranes that are composed of fibres have been shown to trap and ensnare bats causing mortality. These are commonly called “Non-bitumen coated roofing membranes”. The use of these materials should be carefully considered if bats are in the building. Older linings such as mineral felt or rough timber should instead be used where possible to facilitate bat roosting. In some cases, breathable membranes can be made safe for bats by adding a layer of Netlon and batons if it can be ensured that bats will only come into contact with the latter.

11.4. Lighting

Lighting at or near roost entrances has been shown to disturb bats and should be avoided. The lighting strategy will need to be described for approval within the Bat licence application. The lighting strategy shall be sensitive to bats, and all lighting should be kept to a minimum. Lighting should be selected based on suitable height, intensity and shielding. Modern LED lighting has also been shown to deter bats, but it is available in a range of colours other than white which may be used to avoid or lessen impacts. No lights should be directed towards any trees or bat boxes. External lighting on new residences should be fitted with motion sensors and timers to provide light only when required. Constant, overnight lights shall not be permitted.

11.5. Maintaining habitat

Ensuring the long-term viability of the Bat population will also involve maintaining and enhancing the local environment for foraging Bats. This would take the form of maintaining trees and hedgerows to create habitat corridors that allow Bats to commute around the site.

Pipistrelle and Leisler’s Bats are crevice dwelling Bats. Mitigation for the Bats recorded shall include providing similar and suitable crevice type features in the new building. The roosts (for both recorded species) could be recreated through the installation of raised roof/access tiles (i.e. Habitat Bat access tiles) and integrated maternity scaled Bat boxes (i.e. Habitat 001 Maternity Bat box). Roof tiles may also be raised using a timber wedge or folded lead flashing to a height of 25mm or by using a purpose-made tile set (Tudor Roof Tiles).

The extent to which bats use alternative roosts is not well studied and appears to be highly variable. Therefore, follow-on monitoring should be provided and for the requirement of the licence, once the works have been completed. It is recommended that two years after the work has been completed, additional site surveys (May-September) should be undertaken for monitoring purposes.

12. Conclusion

There is active bat roost for Soprano Pipistrelle bats under a loose tile on the southeast corner of the house. No. 2 Soprano Pipistrelle Bats were recorded emerging from this roost on 07.07.25 and no. 6 Soprano Pipistrelle Bats were recorded emerging from this roost on 11.08.25.

Based on the results, it is concluded that the proposed works could have a significant negative impact on any bat species inhabiting the structure, in the absence of appropriate mitigation. There is no envisaged significant impact to the local bat population (or otherwise), following the strict implementation of the mitigation measures outlined in Section 10; there is also no envisaged significant impact to foraging and/or commuting bats.

An application for a derogation licence to NPWS will need to be granted prior to any changes and/or potentially impacting activities are carried out. All works are to be carried out in strict accordance with NPWS requirements and planning conditions, as relevant.

Mitigation and compensation measures have been outlined to protect and enhance the local Bat population, and include the following:

- Application for Derogation license from NPWS.
- Externally mounted Bat boxes are to be provided prior to and during the construction phase.
- Construction Management Plan to include mitigation measures:
    - Correct timing of works to minimise impacts on local bat population.
    - An Ecological Clerk of Works (ECoW) to be present on-site during key demolition activities including the appropriate installation of alternative habitat
    - Soft stripping of the roof to be supervised be a suitably qualified Bat Ecologist and ECoW to oversee works and give expert advice and direction to staff.
- Use of bat safe materials
- A sensitive lighting plan to be implemented as part of the development plan. These measures are to reduce light pollution and for the benefit of all nocturnal species in the area.
- The treeline and mature vegetation should be retained wherever possible.
- Bat boxes to be incorporated into the development design post construction.

A Bat Mitigation Plan can be developed for the proposed development, including a lighting plan, to avoid, reduce and mitigate impacts to bat species, at the request of the Competent Authority.

Appendix 1

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Appendix I - References and Further Reading

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Appendix 2

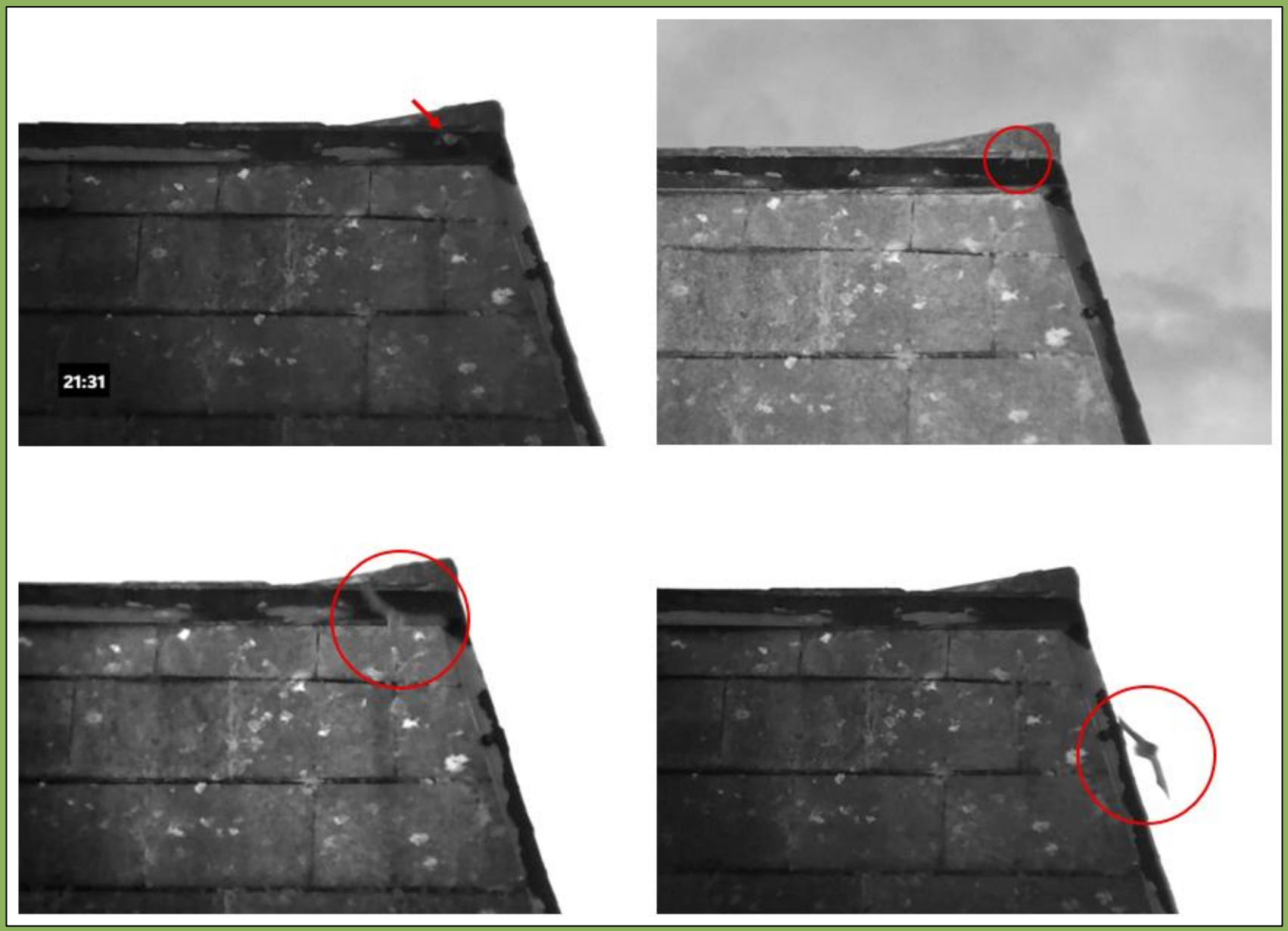
Photo Plates

Plate 1 – Aerial of site and surrounds

Plate 2 – House exterior and shed

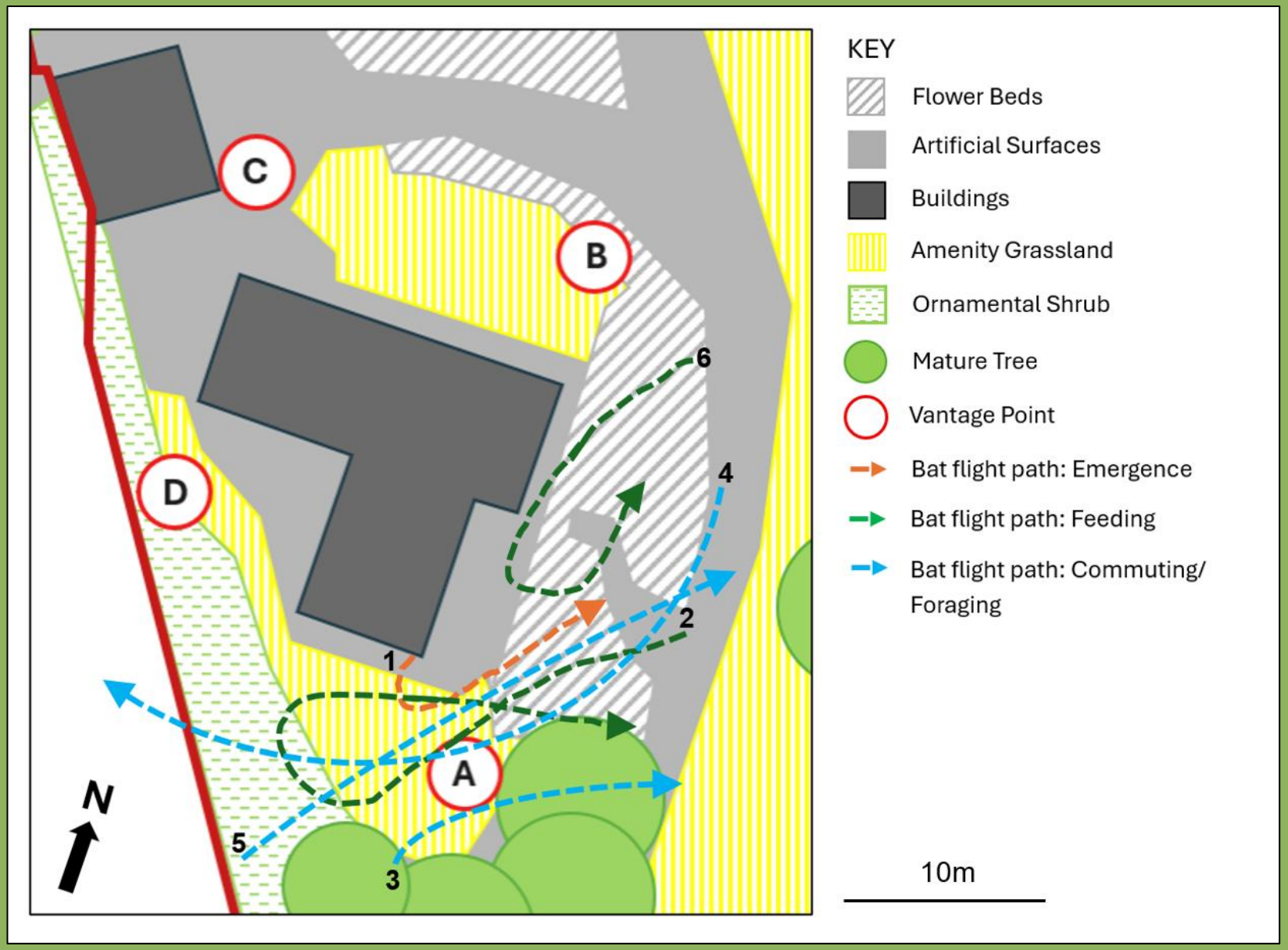
Plate 7 – Loose tile in southeast corner, bat emergence point indicated with red arrow

Plate 8 – Pipistrelles emerging from roost under loose tile on southeast roof of house



Appendix 3

Map


KEY
Flower Beds
Artificial Surfaces
Buildings
Amenity Grassland
Ornamental Shrub
Mature Tree
Vantage Point
Bat flight path: Emergence
Bat flight path: Feeding
Bat flight path: Commuting/ Foraging
10m
N
A
B
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D
1
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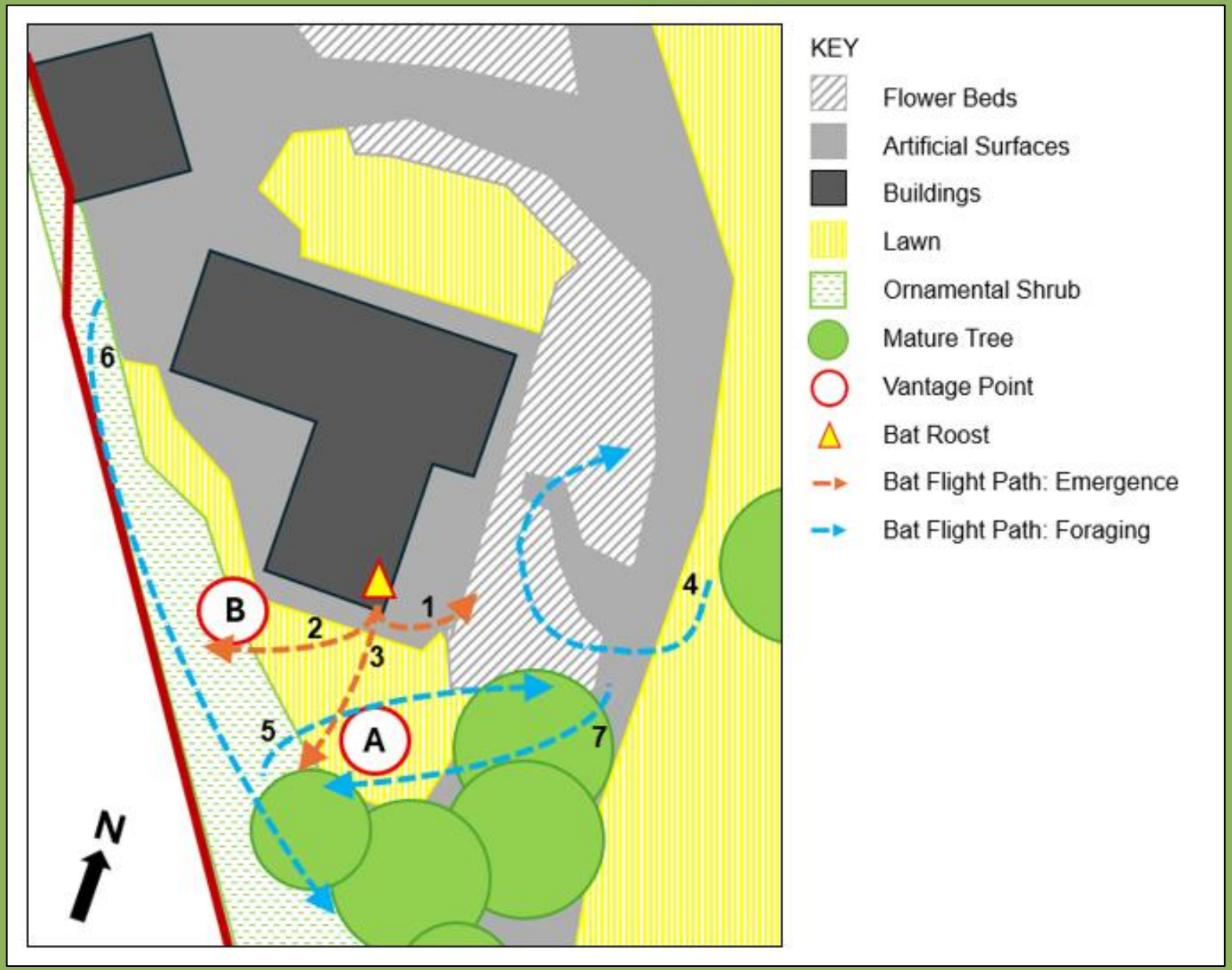
KEY
Flower Beds
Artificial Surfaces
Buildings
Lawn
Ornamental Shrub
Mature Tree
Vantage Point
Bat Roost
Bat Flight Path: Emergence
Bat Flight Path: Foraging
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