Eire Ecology

Environmental Consultants

Bat Survey Report

Lurgan, Co. Galway.

DOCUMENT DETAILS

Client:	Jason Collins
Project Title:	For the 1) refurbishment and extension of existing traditional storey & a half dwelling house. 2) Conversion of existing adjoining barn into useable living space with link to existing house. 3) Construct a new domestic garage and upgrade existing septic tank with new wastewater system and all associated site development works. Gross floor space of proposed works: 209.34 sqm(extension) & 38.50 sqm(garage)
Planning Ref No:	2461738
Document Title:	Bat Survey Report
Prepared By:	John Curtin; Eire Ecology
Date:	14/10/2025

EXECUTIVE SUMMARY

This document reports on the findings of bat surveys conducted in 2025 at a cottage in Lurgan, Loughrea, Co. Galway. Surveys were commissioned by Jason Collins after the submission of a Further Information clarification request to examine potential impacts on bats by proposed upgrade works.

Surveys included a roost assessment of structures, using bat detectors and thermal scopes. The aim was to examine current bat usage within the site and assess impacts of the development on the local bat populations.

Our surveys show the presence of a satellite number of five Soprano Pipistrelle bats using the cottage. Proposed mitigation includes the application of a derogation licence, instillation of integrated bat boxes, limiting outdoor lights and planting of a hedge and scattered trees as outlined below.

As long as mitigation is followed, the proposed development will not have a negative impact on the local bat populations.

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2 INTRODUCTION

This document reports on the findings of bat surveys conducted in 2025 at Lurgan Loughrea Co. Galway.

2.1.1 Objective of the proposed works

The report aims to;

- Identify bat roosts in the building where changes are proposed.
- Potential impacts of bats by the proposed development.

2.1.2 Name, qualifications and relevant experience of scientific staff, including trainees

The survey was designed and carried out by **John Curtin B.Sc. (Env.).** John has over ten years' experience of carrying out bat surveys and has completed numerous surveys during this time. John has also completed the Bat Conservation Ireland, Bat Detector Workshop and Bat Handling Workshop which are the standard training for the carrying out of bat surveys in Ireland. He follows the Bat Conservation Ireland 'Good Practice Guidelines'(Aughney et al., 2008)'. In addition, John is a longtime active member of Bat Conservation Ireland, which monitor bat populations in Ireland, and facilitate the education of bat communities to the public. The surveys undertaken are in line with recommendations of the Irish Wildlife Manual No. 134' (Marnell, 2022) while following elements of Bat Conservation Trust 'Good Practice Guidelines, 4th edition, (Collins, 2023). Surveys were assisted by Rowan Curtin.

John holds the following licences.

Description	Licence No
Licence to capture protected wild animals for educational, scientific or other purposes (bats)	C014/2025
Roost disturbance (bats)	Der/Bat 2025-177
Licence to photograph / film wild animals (bats)	032/2025

3 BACKGROUND TO PROPOSED ACTIVITY

3.1 LEGISLATIVE PROTECTION

There are two main pieces of legislation which cover wildlife protection in Ireland – the Wildlife Act and the Habitats Regulations. These are outlined below, with particular reference to the protection afforded to bat species in Ireland.

The Wildlife Acts 1976–2012 (as amended)

The primary pieces of national legislation for the protection of wildlife in Ireland are the Wildlife Act (1976) and the Wildlife [Amendment] Act (2000). 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 which it uses for that purpose

European Communities (Natural Habitats) Regulations 1997 (S.I. No. 94/1997) (with subsequent amendments up to 2024).

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 and the habitats in which they are commonly found and requires that appropriate monitoring of populations be undertaken. All bat species found in Ireland are listed under Annex IV of the Directive, while the lesser horseshoe bat is afforded further protection under Annex II. The Habitats Directive has been transposed into Irish law by the European Communities (Natural Habitats) Regulations 1997. 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

Provision is made in the Regulations for the Minister for Housing, Local Government and Heritage to grant, in strictly specified circumstances set out in that Regulation, a derogation license permitting any of the above activities "where there is no satisfactory alternative and the derogation is not detrimental to the maintenance of the populations of the species to which the Habitats Directive relates at a favourable conservation status in their natural range".

The Planning and Development Act 2000 (as amended): This Act integrates biodiversity considerations into the planning process and requires ecological assessments, including for bats, as part of Environmental Impact Assessments (EIAs).

3.2 Site Location

The site lies within the townland of Lurgan (53.19670802, -8.64148998, approximately 3km west of Loughrea. There are no designated sites which reference bats within 6km of the site (see Figure 2-1 below).

3.3 Reason for Survey

The client; Jason Collins is the owner of the site that currently contains a derelict cottage and a metal shed previously knocked during a storm. An application for the refurbishment of the cottage and conversion of barn into living space was sought on the 17th December 2024. On the 22nd of January 2025 an objection was submitted noting the presence of a barn owl. A FI from Galway County Council requested a bat survey be carried out in order to *"identify whether any bats or their roosts are present on site or whether or not bats utilise the site for foraging".*

4 PROPOSED DEVELOPMENT

The proposed development is seeking to refurbish and extend the existing traditional storey & a half dwelling house and conversion of existing adjoining barn into useable living space with link to existing house. In addition, it is proposed to construct a new domestic garage and upgrade existing septic tank with new waste water system and all associated site development works.

As part of the FI response a structural assessment of existing structures has been completed by engineer Larry Conroy, who conducted a visual inspection on the 13th of August and 02nd of October 2025. Regarding the cottage; Larry states *"Derelict cottage in a substantial state of disrepair. I estimate that the property was constructed in the early 1900's and was occupied at the time of the 1911 census. The site boundaries are defined. The property is uninhabitable, there has been recent damage to the West gable, and the house has been used in the recent past for the storage of farm machinery. The house was occupied until the mid-seventies". "It was then decided to use the building for agricultural storage purposes as it was beside Existing hayshed."* He states *"Following examination of the structure, it is my opinion that the original structure can be brought back into use and utilized to form a dwelling. This project will be painstaking and require a lot of manual labour to protect the structure, but same can be restored with diligence."*

With regard the roof; *The roof is structurally weak due to part of the west gable wall missing. There is substantial portion of roof damage at the West gable location, but the main roof and Bangor slates are still keeping the elements out.* ***The roof will require total replacement".***

The hay shed is a ruin.

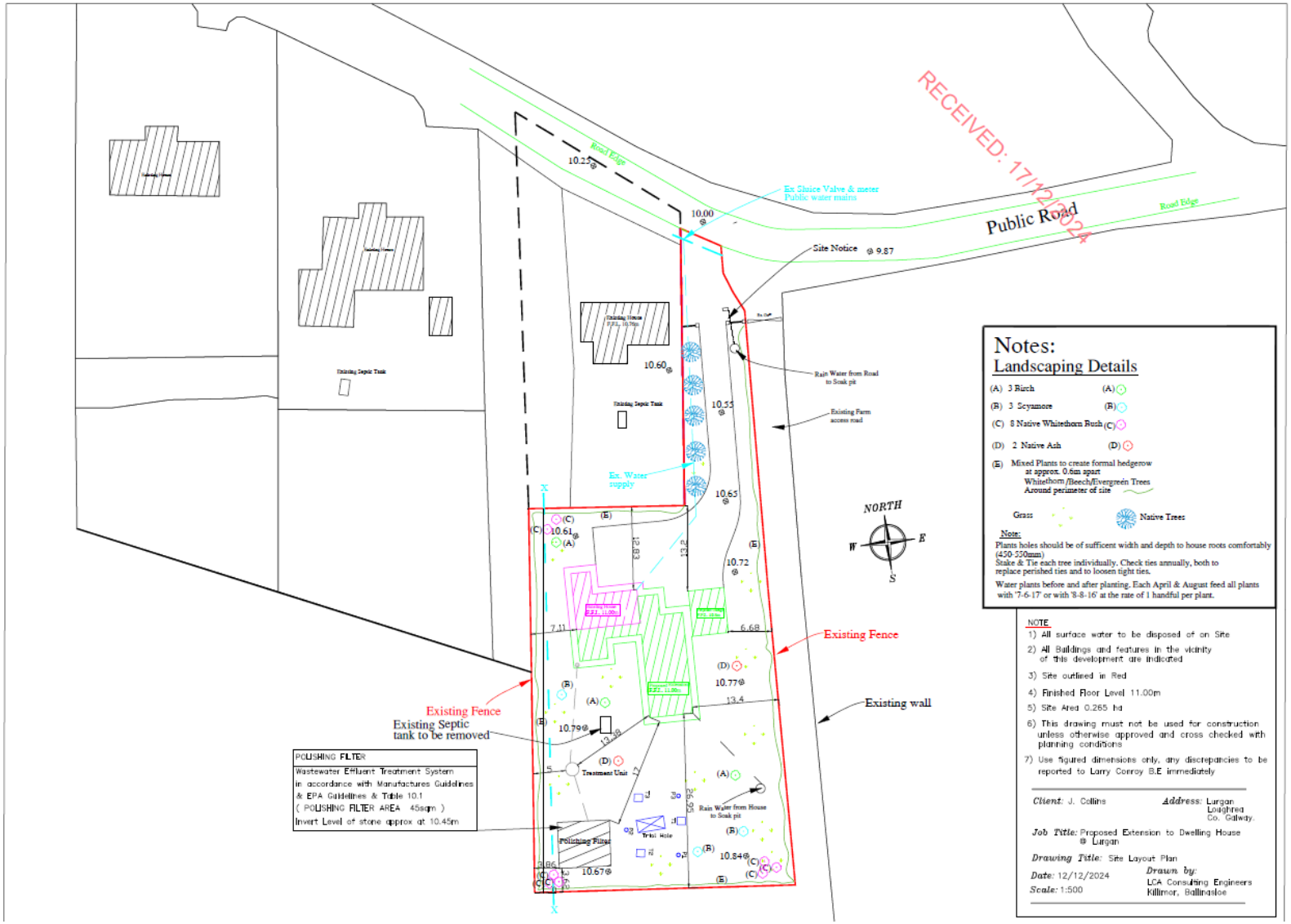

Figure 4-1: Site Layout Plan – pink shows existing cottage while green area shows proposed building

5 ECOLOGICAL SURVEY AND SITE ASSESSMENT

5.1 PRE-EXISTING INFORMATION ON SPECIES AT LOCATION AND ENVIRONS

5.1.1 Historical data – BCI and NBDC Records

The BCI database was consulted for details on bat records held for the site and the surroundings. The database was consulted on the 11/06/2025 and the 14/10/2025 for details on historical records from the site for the surrounding area. Two bat roosts are recorded within 6km of the site, a castle found 4.3km to the NE and a cottage found 5.6km to the east. When considering potential impacts to bat roosts, proximity and connectivity are primary concerns.

A core sustenance zone (CSZ), as applied to bats, refers to the area surrounding a communal bat roost within which habitat availability and quality will have a significant influence on the resilience and conservation status of the colony using the roost (BCT, 2020).

No bats have been recorded on the NBDC database within the 2km M51T square the site resides in. The BCI suitability index states the site lies in an area of moderate high suitability for bats (score all bats: 35.67).

Table 5-1: Irish bat species recorded in the BCI database

Species	Distance of record	Last record	Details	Designation	Potential connectivity with subject site (for
Natterers Bat	4.3km	06/08/2016	7 natterers and 5 brown long eared roosting while others recorded on bat detector (present).	Habitats Directive - Annex IV, Wildlife Act (1976) Wildlife (Amendment) Act (2000)	Outside the CSZ for each of these species.
Brown Long-eared					
Soprano Pipistrelle					
Leisler's bat					
Soprano Pipistrelle	5.6km	20/06/2019	Satellite roost Soprano Pipistrelle and whiskered roost. Located far side of Lough rea lake.		Outside the CSZ for each of these species.
Whiskered bat					

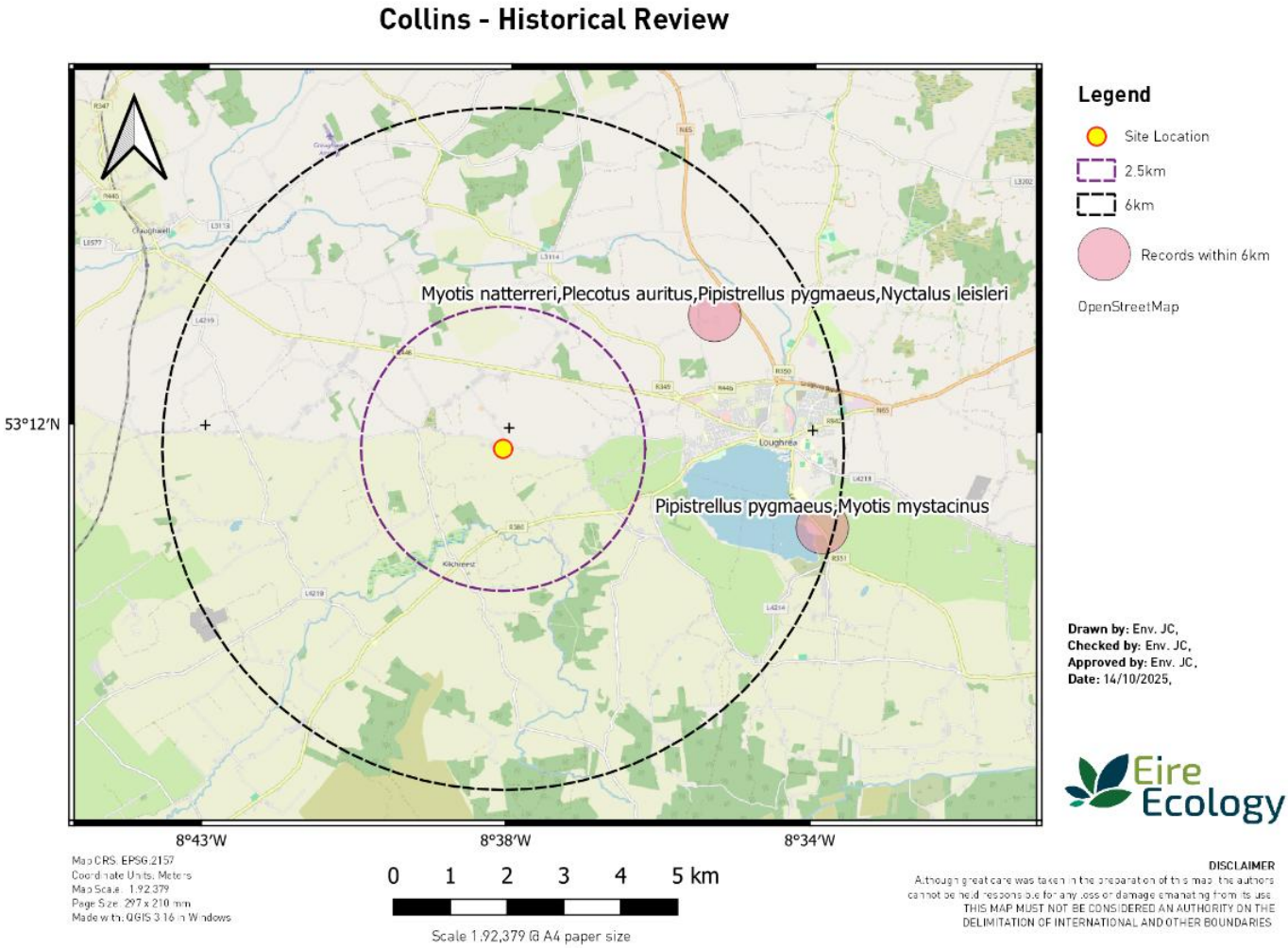

Figure 5-1: Location of proposed development to designated sites

5.2 STATUS OF THE SPECIES IN THE LOCAL/REGIONAL AREA

The NPWS Article 17 data (from 2019) was examined to define a status of bats within the environs of the subject site. Ranges and distributions of all Irish bat species were examined (https://www.npws.ie/maps-and-data/habitat-and-species-data/article-17/2019/species/mammals) with table 5-1 below showing the status of all bats within the locality is deemed favourable.

Table 5-2: Status of bats found within environ of subject site

Common name	Latin Name	Within range?	Within distribution?	Status
Common pipistrelle	*Pipistrellus pipistrellus*	Yes	Yes	Favorable
Soprano pipistrelle	*Pipistrellus pygmaeus*	Yes	Yes	Favorable
Nathusius' pipistrelle	*Pipistrellus nathusii*	No	No	Favorable
Leisler's bat	*Nyctalus leisleri*	Yes	**Yes**	Favorable
Brown long-eared	*Plecotus auritus*	Yes	No	Favorable

Common name	Latin Name	Within range?	Within distribution?	Status
Daubenton's bat	*Myotis daubentonii*	Yes	**Yes**	Favorable
Whiskered bat	*Myotis mystacinus*	Yes	No	Favorable
Natterer's bat	*Myotis nattereri*	Yes	No	Favorable
Lesser horseshoe bat	*Rhinolophus hipposideros*	No	No	Favorable

5.3 OBJECTIVE(S) OF SURVEY

The objective of the survey is to determine if a bat roost is present within the site.

5.4 DESCRIPTION OF SURVEYS AREA

The subject site consists of rank grass with derelict dwelling and remains of a hay barn. Existing houses can be found to the north of the site along the L4224 road. The site is fairly open, particularly to the south, with few treelines or good bat friendly features. The roadside has hedges which increase bat favourability. Scrubby peatland habitat can be found to the north-east providing potential feeding habitat.

5.4.1 Lesser Horseshoe Bat Rhinolophus hipposideros

The subject site does not reside in a Lesser Horseshoe range, located to the east of the South Galway / Clare ranges.

5.5 METHODOLOGIES

5.5.1 Preliminary Ecological Appraisal (PEA)

A daylight PEA assessment was carried out on the 23rd of July 2025. The derelict house consists of mortared stone walls with a slate roof and sarking (wooden cladding inside the rafters). The western gable end of the house has partially collapsed exposing the building considerably. Many of the windows and doors are open providing multiple accerss points but alkos allowing considerably light exposure. The ground floor ceiling has exposed joists with first floor rafters visible. The roof lacks fascia. Overall the build9ing looks to have moderate high potential as a bat roost and the PEA assessment considers an emergence survey necessary.

The barn is mostly collapsed and has no potential to act as a bat roost (or for barn owl).

5.5.2 Night-time Surveys

Nighttime surveys were conducted on the 23rd of July and again on the 26th of August 2025. These surveys consisted of surveyors recording activity levels at two points within the site. The purpose of surveys was to examine for roosting bats that could be impacted by the development, observe bat interactions such as commuting routes and feeding areas .

The bat detectors used during the surveys were Wildlife Acoustics Inc. (Massachusetts, USA) EM touch pro 2s which are triggered to record when a bat call is emitted louder than 18dB for 1sec. These detectors use full spectrum sampling; detecting all frequencies simultaneously, meaning that multiple bat calls can be recorded at the same time. In addition, three NVA's (Night Vision Aids) were used to aid spotting emerging bats;

- Canon XA10 with two IR Nightfox torches
- Guidetrack Pro TK612 thermal scope

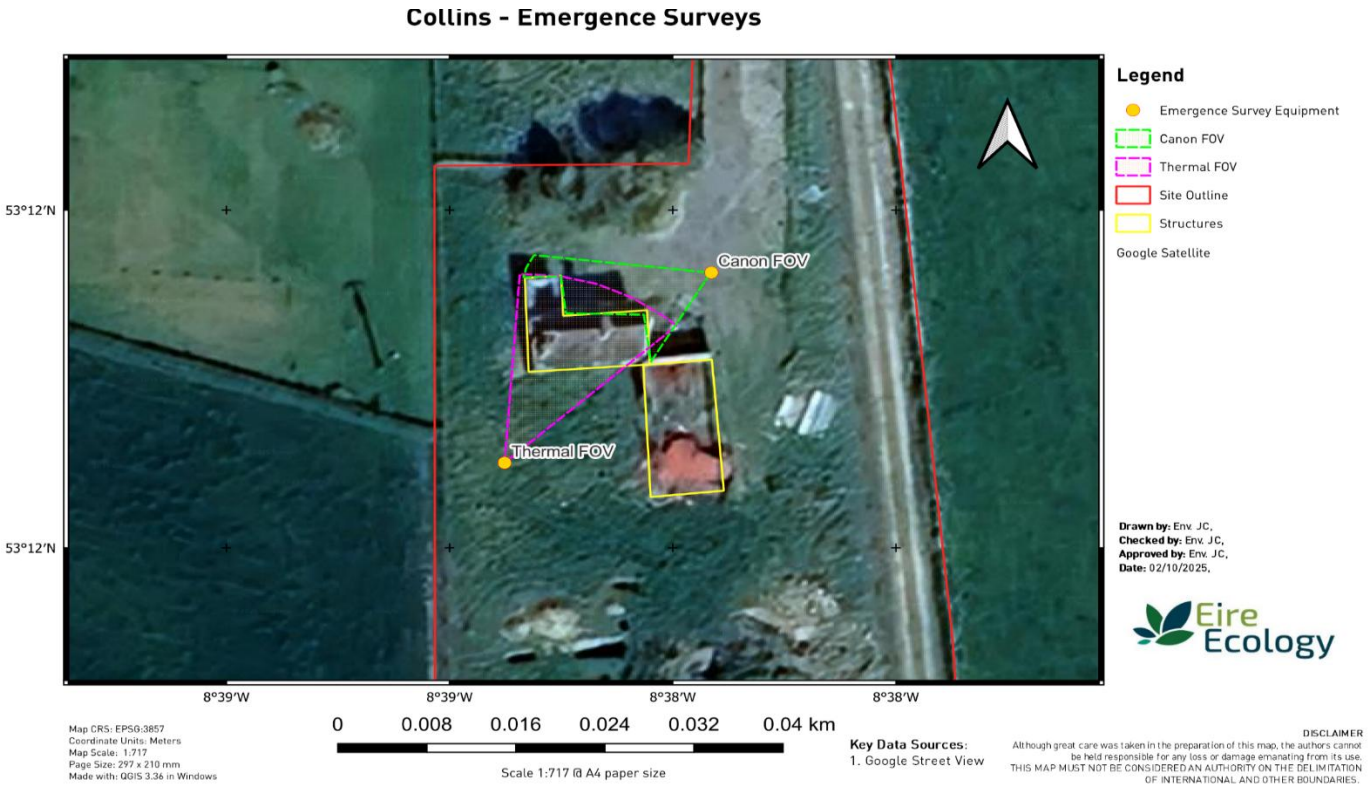

Figure 5-2: Site location map with location of subject building

5.6 SURVEY RESULTS

5.6.1 Emergence survey 23rd July 2025 (Sunset 21:33)

Surveys commenced at 21:00 (33 minutes before sunset) and ran until 23:45. Weather conditions were good with temperatures range from 16 to 11 degrees, with no wind or rain. The first recorded bat was a Soprano Pipistrelle recorded at 21:46. This bat was not found to emerge from the building. During the survey five Soprano Pipistrelle were recorded emerging from the cottage , all through the gable upper floor windows. During the survey, Common Pipistrelle and Leisler's bat were also recorded flying but not emerging. Low levels of Natterers, unidentified Myotis and Brown Long eared were also recorded (not emerging).

Table 5-3: Recordings – both detectors

Species	Recordings (both detectors)
Soprano Pipistrelle	121
Common Pipistrelle	65
Leisler's bat	10
Unidentified Myotis	2
Brown Long-eared	1
Natterers	1

Plate 5-1: Thermal TK view of derelict dwelling - Survey 1 (1a)

Plate 5-2: Canon Infrared view of derelict dwelling - Survey 1 (1b). Red circle shows emergence location.

5.6.2 Emergence survey 26th August 2025 (Sunset 20:26)

Surveys commenced at 19:56 and ran until 22:27. Weather conditions were acceptable with temperatures range from 16 to 12 degrees, with no rain however patchy drizzle occurred periodically. Bat activity did still., occur. The first recorded bat was an unseen Leisler's bat at 21:10, some 44 minutes after sunset. At 21:14 a Soprano Pipistrelle was noted flying around the yard foraging. While bats were recorded periodically hunting, no bats emerged from the site.

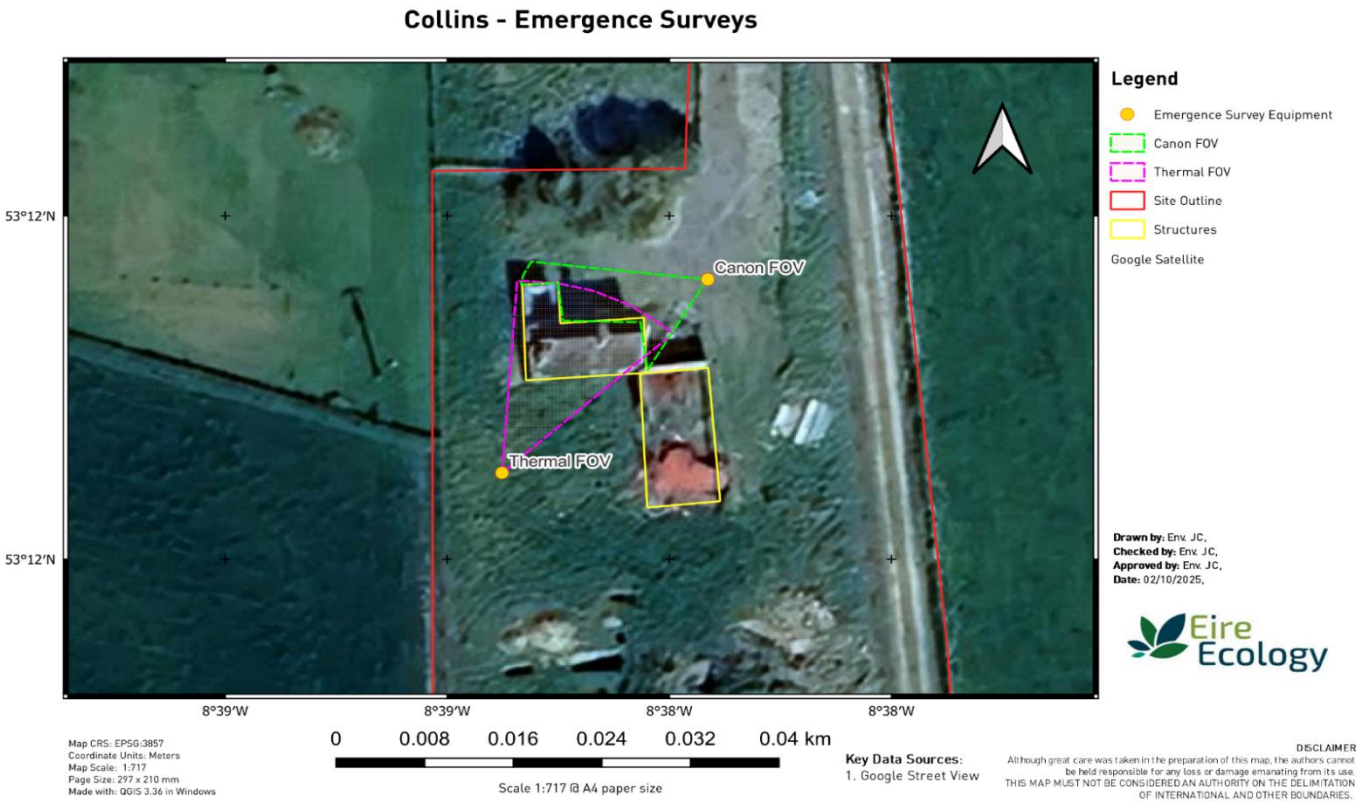

Figure 5-3: Positioning of NVA's

Plate 5-3: Canon Infrared view of derelict dwelling - Survey 1 (1b)

Plate 5-4: Canon IR view of dwelling - survey 2 (2b)

Table 5-4: Recordings – both detectors

Species	Count of recordings
Soprano Pipistrelle	17
Common Pipistrelle	4
Leisler's	1

5.7 POPULATION SIZE CLASS ASSESSMENT

The subject site contains a satellite roost of soprano pipistrelle. Figure 20 of (Marnell, 2022) provides information on the conservation significance of a roost. *Small numbers of common species. Not a maternity site* lies towards the lower end of conservation significance. (Roche, 2024) states there is a soprano pipistrelle population of approximately 1.2-2.7million in the Republic of Ireland. Over the past 20 years there has been an estimated increase of 278.5% in the population, thus the population status can be considered favorable.

No evidence of barn owl was found.

6 EVIDENCE TO SUPPORT THE DEROGATION TESTS

6.1 TEST 1 – REASON FOR DEROGATION:

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

The proposed development is necessary to allow for a long-term housing need for a family and, thus, is of public interest of a social and economic nature. The provision of a family home supports social and economic development and, as such, outweighs the conservation interest of the bat species, particularly as the roost is minor and of low to moderate conservation importance (in accordance with Marnell et al, 2022).

6.2 TEST 2 – ABSENCE OF ALTERNATIVE SOLUTIONS

6.2.1 Do-nothing Solution

This cottage is a precarious state. One gable has caved in and the structure is in danger of collapse unless remedial works are conducted. A structural report accompanies the application.

6.2.2 Remedial works on the structure without works to roost area.

It may be possible to repair aspects of the building without impacting the roost located under sarking however this works would still require a derogation licence for disturbance. The structural report states "*the roof is structurally weak due to part of the west gable wall missing. There is substantial portion of roof damage at the West gable location, but the main roof and Bangor slates are still keeping the elements out. The roof will require total replacement and safe disposal of all materials. It maybe possible to use some of the old slates to front elevation on refurbish*". Leaving the structure in a half refurbished state would not enable the use of the building as a family home thus would not comply with test 1.

6.3 IMPACTS OF A DEROGATION LICENCE ON CONSERVATION STATUS

6.3.1 Details of the population at the appropriate geographic scale and an evaluation of how the proposed activity will affect the conservation status both before and after mitigation measures have been applied.

As stated in section 5-7, the estimated soprano pipistrelle population is 1.2-2.7million in the Republic of Ireland with a substantial increase in population over the previous 20 years. The number of Soprano Pipistrelle using the building was 5, with a second survey showing no roosting bats. As such the roost state is noted as a satellite roost.

Without mitigation, the demolition of the building could result in the mortality of a small number of non-breeding Soprano Pipistrelle bat, if timed inappropriately. This would result in an adverse effect on the conservation status of the local population of Soprano Pipistrelle bat but would not be significant on a national or regional scale. With the implementation of the mitigation measures outlined in section 6.3.1.1 below, using established guidelines (e.g. Marnell, 2022) the proposed development will not be detrimental to the maintenance of populations of bat species at favourable conservation status in their natural range (as required under Section 54(2) of the European Communities (Birds and Natural Habitats) Regulations, either locally or nationally. Indeed, the provision of a dedicated roost following established guidelines may potentially result in a positive effect on the population of Soprano Pipistrelle bat locally.

6.3.1.1 Loss of Roosting Habitat

Assessment of Potential Impacts on Roosting Bats	A bat roost was found within the dwelling located between slates and timber boards. The proposed development will see the disturbance and destruction of the roost.
Characterisation of unmitigated effect	The reconstruction of the dwelling could see the destruction of the roost and potentially mortality of any roosting bats.
Assessment of Importance prior to mitigation	This has the potential to have a low effect on a receptor of Local Importance (High Value). The loss of a satellite roost, even without mitigation would have a low impact on the local bat population given the amount of other available roosting sites. As stated above the roost is deemed towards the low conservation significance based on (Marnell, 2022). Construction and demolition works on the roost while a bat was in-situ however could lead to injury or death to the bat. While this is unlikely to have a significant impact on the local Soprano Pipistrelle local population, it would be an unacceptable loss of life.
Mitigation	Regarding mitigation / compensation Figure 20 states the roost status measures lies between "Flexibility over provision of bat boxes, access to new buildings etc. No conditions about timing or monitoring" and "*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*". Based on the above it is proposed to;

	▪ Apply for a derogation licence for the destruction of a roost. ▪ Remove sarking and slates between the 01st of February and the 30th of March 2026 under the supervision of an ECoW with a bat handling licence (Note at this time of year it is unlikely any bats are present). Should bats be found the bat worker will move bats to a pre erected temporary bat box. ▪ Proceed with development. ▪ Install two integrated two Schwegler bat wall system 3FE bat boxes. These will be fitted into the garage wall (see figure 6-1 below). Boxes should be erected at a minimum of 3.5m height facing south & south east.
Residual Effect following Mitigation	With the implementation of the prescribed mitigation measures, no significant residual effects are predicted as a result of the construction works.

6.3.1.2 Loss of Foraging and Commuting Habitat

Describing the Significance of Effects	No foraging or commuting impacts are expected.
Characterisation of unmitigated effect	None
Assessment of Importance prior to mitigation	Neutral
Mitigation	Currently, the site is fairly open with little connective landscape features. It is proposed to create new and enhanced hedgerows and scattered native trees to create better commuting and feeding habitat from the bat boxes, north to the road. See figure 6-1. GSI states the soil is derived from Limestone so species such as Yew, Irish whitebeam, pedunculate oak, hawthorn, hazel, guelder rose, holly are all suitable. Species will be native Irish and of Irish provenance.
Residual Effect following Mitigation	Positive

6.3.1.3 Disturbance.

Describing the Significance of Effects	**Lighting effects on feeding and commuting bats.** Guidance on lighting has been based on Bats and artificial lighting in the UK, Guidance Note 08/18 (BCT, 2018), EUROBATS; *Guidelines for consideration of bats in lighting projects.* (Voigt, 2018) and BCI; Bats & Lighting document; (BCI, 2010). Lighting can alter the behaviour of bats and the insects they prey on. Night flying insects can be attracted to lights particularly sources that emit an ultraviolet component or have a high blue spectral content. Whilst some species of bat such as Leisler's and Pipistrelle species can take advantage of this occurrence, other species such as Daubenton's bat and brown long-eared avoid such areas. Lighting can create barriers for bat species both entering roosts and using commuting routes such as rivers, treelined roads and woodland edges.
Characterisation of unmitigated effect	An increase of outdoor lighting could reduce the range of foraging behaviour within the site.

Assessment of Importance prior to mitigation	This is assessed as a long-term Significant effect on both a receptor of Local Importance (Lower Value).
Mitigation	**Construction** Where lighting is unavoidable during construction, low-intensity lighting and motion sensors will be used to limit illumination. Exterior lighting, during construction, will be designed to minimize light spillage, thus reducing the effect on areas outside the proposed development, and consequently on bats i.e. Lighting will be directed away from mature trees/treelines around the periphery of the site boundary and woodland areas to minimize disturbance to bats. Directional accessories will be used to direct light away from these features, e.g. through the use of light shields (Stone, 2013). The luminaries will be of the type that prevent upward spillage of light and minimize horizontal spillage away from the intended lands. **Operation** *Lighting* A single outdoor light will be installed above the front door. ▪ This light will have a colour temperature of 2700K thus less attractive to invertebrates. ▪ This light will be directional, facing down and have no upwards tilt. ▪ The light will have a motion sensor thus only on for the minimum required time
Residual Effect following Mitigation	No significant residual effects on are expected at a county, national or international level.

Following guidance outlined in (Marnell, 2022), the proposed mitigation is appropriate based on the conservation status of the roost.

Collins

Map CRS: EPSG:29900
Coordinate Units: Meters
Map Scale: 1:558
Page Size: 210 x 297 mm
Made with: QGIS 3.16 in Windows

Drawn by: Env. JC,
Checked by: Env. JC,
Approved by: Env. JC,
Date: 20/10/2025,

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Figure 6-1: Bat Box locations

7 MONITORING THE IMPACTS OF THE DEROGATIONS

Mitigation measures will involve the presence of a licensed bat worker during demolition (until such time as the building is deemed unsuitable to act as a bat roost). The surveyor will come back after the integrated bat boxes have been installed, planting has occurred and that only one outdoor light has been installed and that it functions as stated in 6.3.1.3.and photograph evidence of compliance with a final report submitted to the NPWS at this point.

APPENDIX A – TABLES, FIGURES & PHOTOS

SUMMARY OF EMERGENCE

Contact number	Date	Time	Species	Details	NVA	Location
1	23/07/2025	21:43	Unknown	Bat flying past derelict house	Thermal TK612	1a
2	23/07/2025	22:24	Soprano Pipsitrelle	Bat flying from over right hand wall entering site from north.		
3	23/07/2025	22:36	Soprano Pipsitrelle	Bat flies past fascia behind collapsed gable. Does not appear to be emerging from building.		
4	23/07/2025	23:21	Common Pipistrelle	Flying over Building		
No Bats emerging						
1	23/07/2025	22:22	Soprano Pipistrelle	5 Bats emerge over 10 minutes, all exiting from top windows in intact gable	Canon IR	1b
2	23/07/2025	22:27	Soprano Pipistrelle	Flies up to gable window (from outside), flies away		
3	23/07/2025	22:29	Leisler's	Heard not seen		
5 Soprano Pipistrelle Emerge						
	26/08/2025	19:56	Canon IR Start Time		Canon IR	2b
1	26/08/2025	21:14	Soprano Pipistrelle	Passes in front of Canon		
2	26/08/2025	21:18	Soprano Pipistrelle	Same bat as last contact, flies around yard foraging		
No Bats emerging						
	26/08/2025	19:56	Guide track tk612	Starts recording	Thermal TK612	2a
1	26/08/2025	21:29	Soprano Pipsitrelle	Bat circling over dwelling		
No Bats emerging						

Detector recordings July Survey

Guide TK - Location 1a - Survey 1			Canon IR - Location 1b- Survey 1		
No.	Time	Species	No.	Time	Species
1	22:23	PIPY	1	22:22	PIPY
2	22:23	PIPY	2	22:22	PIPY
3	22:23	PIPY	3	22:22	PIPY
4	22:23	NYLE	4	22:22	PIPY
5	22:24	PIPY	5	22:22	PIPY
6	22:24	PIPY	6	22:23	PIPY
7	22:26	PIPY	7	22:23	PIPY
8	22:26	PIPY	8	22:23	PIPY
9	22:27	PIPY	9	22:23	PIPY
10	22:29	NYLE PIPY	10	22:23	PIPY
11	22:29	PIPY	11	22:23	PIPY
12	22:29	PIPY	12	22:24	PIPY
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14	22:30	PIPY	14	22:24	PIPY
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36	22:39	PIPY	36	22:29	PIPY
37	22:55	PIPY	37	22:29	PIPY
38	22:56	PIPI	38	22:29	PIPY
39	22:58	PIPI	39	22:30	PIPI PIPY
40	22:58	NYLE PIPY	40	22:30	PIPY
41	22:59	PIPI	41	22:30	PIPY
42	22:59	PIPI	42	22:30	PIPY
43	23:04	PIPI	43	22:30	PIPY
44	23:04	PIPY	44	22:30	PIPY
45	23:09	PIPPIP	45	22:31	PIPY
46	23:09	NYLE	46	22:31	PIPY
47	23:10	PIPI PIPY	47	22:31	PIPY
48	23:11	PIPI	48	22:31	PIPY

Guide TK - Location 1a - Survey 1			Canon IR - Location 1b- Survey 1		
No.	Time	Species	No.	Time	Species
49	23:11	PIPI	49	22:31	PIPY
50	23:12	PIPY	50	22:32	PIPY
51	23:15	PIPI	51	22:32	PIPY
52	23:17	PIPI	52	22:32	PIPY
53	23:20	PIPI	53	22:32	PIPY
54	23:27	PIPI	54	22:34	PIPY
55	23:29	PIPI	55	22:34	PIPY
56	23:30	PIPI	56	22:35	PIPY
57	23:31	PIPI	57	22:35	PIPY
58	23:32	PIPI	58	22:35	PIPY
59	23:32	PIPI	59	22:35	PIPY
60	23:33	PIPI	60	22:36	PIPY
61	23:33	PIPI	61	22:36	PIPY
62	23:33	MYNA	62	22:36	PIPY
63	23:34	PIPI	63	22:36	PIPI PIPY
64	23:34	PIPI	64	22:36	PIPY
65	23:34	PLAUR	65	22:37	PIPY
66	23:34	PIPI X2 PIPY; FEEDING BUZZ	66	22:37	PIPY
67	23:34	NYLE PIPI	67	22:46	PIPY
68	23:35	NYLE	68	22:55	PIPY
69	23:35	PIPI	69	22:56	PIPI
70	23:35	PIPI	70	22:59	PIPI
71	23:39	MYUN	71	23:00	PIPI
72	23:39	PIPY	72	23:04	PIPY
			73	23:08	PIPI
			74	23:09	NYCLEI
			75	23:10	NYLE PIPY
			76	23:10	PIPI
			77	23:12	PIPI
			78	23:15	PIPI
			79	23:17	PIPY
			80	23:17	PIPI
			81	23:20	PIPI
			82	23:24	PIPI
			83	23:28	PIPY
			84	23:29	PIPI
			85	23:32	PIPI
			86	23:32	PIPI
			87	23:32	PIPY
			88	23:32	PIPI
			89	23:32	PIPI
			90	23:33	PIPI
			91	23:33	PIPI
			92	23:33	PIPI
			93	23:33	PIPI
			94	23:33	PIPI
			95	23:34	PIPI
			96	23:34	PIPY
			97	23:34	PIPI X2 PIPY

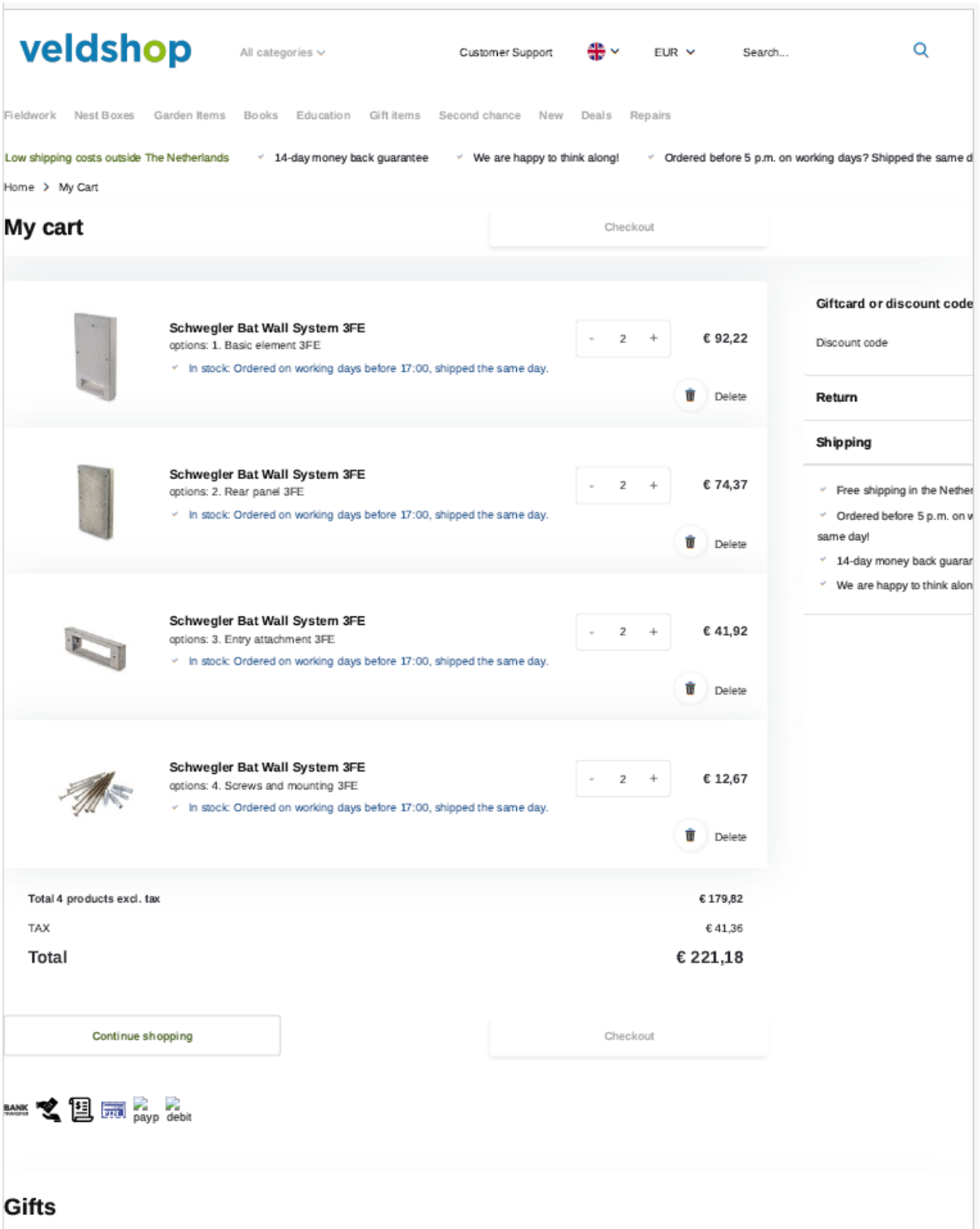
Guide TK - Location 1a - Survey 1			Canon IR - Location 1b- Survey 1		
No.	Time	Species	No.	Time	Species
			98	23:34	NYLE PIPI
			99	23:35	PIPI
			100	23:35	PIPI
			101	23:39	MYUN
			102	23:39	PIPY
			103	23:39	PIPY
			104	23:39	PIPY
			105	23:43	PIPI
			106	23:43	PIPI
			107	23:44	PIPI
			108	23:44	PIPI
			109	23:44	PIPI
			110	23:44	PIPI
			111	23:45	PIPI
			112	23:45	PIPI
			113	23:45	PIPI
			114	23:47	PIPY
			115	23:47	PIPI
			116	23:48	PIPI

PIPI; Common Pipistrelle., PIPY; Soprano Pipistrelle., NYLE; Leisler's bat., MYNA; Natterers bat., MYUN; Unidentified Myotis., PLAUR; Brown Long-eared bat

Detector recordings August Survey – no bats recorded by location 1a

Tablet Audio - Location 1b; Survey 2		
No.	Time	Species
1	21:10	NYLE
2	21:18	PIPY
3	21:18	PIPY
4	21:19	PIPY
5	21:19	PIPY
6	21:24	PIPY
7	21:25	PIPY
8	21:25	PIPI PIPY
9	21:25	PIPY
10	21:25	PIPY
11	21:26	PIPY
12	21:26	PIPY
13	21:27	PIPY
14	21:27	PIPY
15	21:28	PIPY
16	21:30	PIPY
17	21:34	PIPI
18	22:19	PIPY
19	22:24	PIPI
20	22:25	PIPI
21	22:27	PIPY

PROPOSED BAT BOXES



Photos