

Bat Emergence and Re-Entry Survey



This report is supplementary to the Preliminary Roost Assessment report completed by Arbtech Consulting Ltd (2026).

BERS survey methodology and legislation can be found in the Appendices of this report.

Survey Site

**2 Sharcott Pennings, Sharcott,
Pewsey, Kennet, Wiltshire
SN9 5NJ**

Client

Tracy Richards

Report Date

28/09/2026

Project

This report is prepared to inform a planning application for the proposal described as the stables will be converted into a self-contained annex. The stable conversion work will include internal renovations as well as additional windows and fascia boards on the gable ends.

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Assistant Ecologist

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Survey Author & Designer

Survey design and oversight were provided by Consultant Ecologist Bethany Swain BSc (Hons) (Accredited Agent on Natural England Licence) and BCT competency level 2.

Executive Summary

This report is an addendum to and must be read in conjunction with the Preliminary Roost Assessment completed by Arbtech Consulting Limited (2026) for the same site address. This table may include further work you will need to commission (if any) to obtain planning permission or comply with legislation for other consent. All clients are expected to read and understand this section, or to contact the consultant for advice.

Five roosts were identified during the course of this survey. One common pipistrelle day roost, two soprano pipistrelle day roosts, one common pipistrelle night roost and one brown long-eared night/feeding roost. The requirements arising from the findings can be found in Table 1.

Table 1: Requirements arising as a result of this survey.

Requirement	Details
Bat Licence	A European Protected Species Licence is required to legally permit the works. This requirement exists independently of the planning system, and is required whether planning permission is needed or not, and whether this is listed as a condition of planning or not. If the EPSL is not submitted by 16/12/2026 a material changes check will be required. If the EPSL is not submitted by 01/05/2027 updated dusk surveys may be required. The EPSL can be applied for once planning permission has been granted (where required), and within 3 months of the start of works. Any pre-commencement wildlife related planning conditions that require sign off from the council will need to be discharged prior to licence submission.
Wildlife Sensitive Lighting Strategy	A low impact lighting strategy will be adopted for the site during and post-development.

Report Validity

This report is valid for up to 18 months for the purposes of planning/LBC applications. For the purposes of bat licensing, the report is considered 'up to date' and suitable for licence application until the start of the following bat activity season. After those timeframes, some level of updated surveys may be required. The level of survey effort will depend on the specific circumstances of the site.

Site Context and Background

Background

The site is centred at National Grid Reference SU 15137 60268 and has an area of approximately 0.34ha. It comprises the stable building (B1), situated within a rural setting, with another residential dwelling immediately to the west and agricultural land in all other directions. The wider landscape comprises a mixture of arable and pasture fields within a typical Ancient Countryside pattern, with well-developed hedgerow and tree networks providing connectivity to surrounding habitats. The proposed development involves the conversion of the stable into a self-contained annexe, including internal renovations and the installation of additional windows and fascia boards to the gable ends.

A Preliminary Roost Assessment (PRA) was undertaken by Arbtech on 25 May 2026. B1 is a single-storey stable with a double Roman clay-tiled roof, with missing mortar/verge gaps at the gable ends providing access between the tiles and lining. No evidence of bats was identified internally or externally during the PRA; however, B1 was assessed as having moderate suitability for roosting bats due to the presence of these suitable access points and roosting features. The amenity garden and surrounding hedgerow, tree and woodland network also provide suitable opportunities for bat foraging and commuting. Given the moderate suitability of B1, two bat emergence/re-entry surveys are required during the peak/optimal survey period to determine the presence or likely absence of roosting bats.

Context

Number of buildings on site

1

Number of buildings surveyed

1

Site Inspection

Site Inspection

An updated loft inspection was undertaken by Consultant Ecologist Inez Daly BA (Hons), (Accredited on Craig Williams's Natural England Bat License No. 2025-86119-CL18-BAT) at BCT Level 2 competence on 5th August 2026 as part of a BERS survey. The inspection identified approximately 20 scattered droppings in the building with evidence of feeding remains in the form of around 8 yellow underwing moth wings. The loft space was assessed for any material changes since the previous inspection, with no alterations to the structure, access points, or suitability for roosting bats identified.



Figure 1a: Interior loft space of B1.

Proposed Works

Proposed Development

Current use of building(s)

B1 is currently used as a stable.

Proposed use of building(s)

B1: Self-contained residential annexe.

Structural changes to building(s)

B1: The proposed works comprise the conversion of the stable, including internal renovations.

Cosmetic/repair work

B1: The addition of new windows and fascia boards to the gable ends.

Type of permission required

Full planning application

Proposed Plan

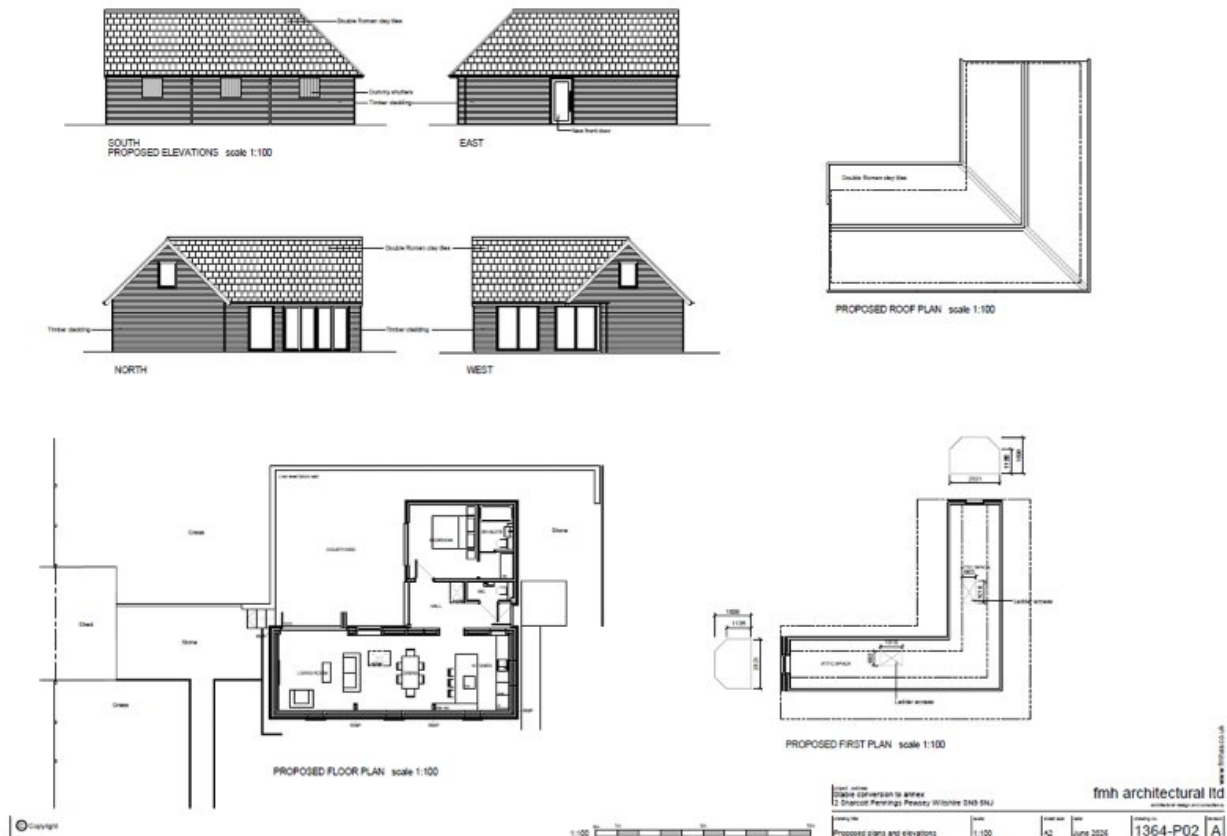


Figure 2: The proposed plans

Surveyors and Equipment

Surveyors

Table 2: Details of the surveyors involved in each of the surveys

Name	BERS Experience	Bat Licence	BCT Competency
Inez Daly	4 years	N/A	Level 2
Joelle Cattermole	1 years	N/A	Level 2
Anna Kenny	3 years	N/A	Level 1
Ruben FitzGerald	1 years	N/A	Level 1
Gemma Uniacke	2 years	N/A	Level 1
Rosie Wooldridge	1 years	N/A	Level 2

Equipment

Table 3: Details of the equipment used in each of the visits

Category	Equipment	Count		
		Visit 1	Visit 2	Visit 3
Night Vision Aid	Nightfox Whisker	4	3	3
Additional illumination	Nightfox XB5 PRO	3	3	1
Bat detector	Wildlife Acoustics Echo Meter Touch 2	2	2	3
Bat detector	Magenta Electronics Bat 4	2	1	-
Two-way radio	BAOFENG FV-880E two-way radio (or similar)	2	1	2
Bat detector	Titlley Chorus Static Bat Detector	1	1	-
Additional illumination	Nightfox Arc IR Floodlight	1	1	2

Surveyor Positions

Positions

Details of each surveyor position for each visit

A diagram of the positions on site can be found in Appendix 1 along with the position images.

Table 4: The surveyor positions and the surveyors associated with them on each visit. The initials LS indicate the lead surveyor for the site visit

Position	Elevation	Visit 1	Visit 2	Visit 3
B1-1	N	Joelle Cattermole (LS)	Joelle Cattermole (LS)	Rosie Wooldridge (LS)
B1-2	W (semi-manned)	Joelle Cattermole (LS)	-	-
B1-3	SE	Inez Daly	Anna Kenny	Gemma Uniacke
B1-4	W gable end (semi-manned)	Joelle Cattermole (LS)	Joelle Cattermole (LS)	Ruben FitzGerald

Survey Visit Details and Limitations

Visit 1 05/08/2026			Visit 2 26/08/2026			Visit 3 16/09/2026			Limitations There are no limitations associated with this survey.
Start time	Sunset	End time	Start time	Sunset	End time	Start time	Sunset	End time	
20:32	20:47	22:17	19:51	20:06	21:36	19:04	19:19	20:49	
Start Conditions			Start Conditions			Start Conditions			
Temperature(°C): 17.0			Temperature(°C): 22.0			Temperature(°C): 14.0			
Relative humidity (%): 59.0			Relative humidity (%): 67.0			Relative humidity (%): 76.0			
Wind (km/h): 22.0			Wind (km/h): 9.0			Wind (km/h): 16.0			
End Conditions			End Conditions			End Conditions			
Temperature(°C): 15.0			Temperature(°C): 20.0			Temperature(°C): 13.0			
Relative humidity (%): 68.0			Relative humidity (%): 76.0			Relative humidity (%): 80.0			
Wind (km/h): 17.0			Wind (km/h): 6.0			Wind (km/h): 13.0			
Rain			Rain			Rain			
None			None			None			
Buildings surveyed			Buildings surveyed			Buildings surveyed			
1			1			1			
Trees surveyed			Trees surveyed			Trees surveyed			
N/A			N/A			N/A			

Emergence Results

Findings

Summary of all recorded emergences

Emergences were recorded for building B1. Two distinct species were recorded emerging; Common pipistrelle and Soprano pipistrelle.

Full details of emergences, including times and species, can be found in Appendix 8.

Table 5: Number of emergences by species and visit for all buildings

			Number of Emergences			
Roost	Roost Location	Species	Visit 1	Visit 2	Visit 3	Peak Count
1 - B1	Northern Elevation to the west (facing into the courtyard)	Common pipistrelle	1	-	-	1
2 - B1	Between tiles and fascia on the gable end	Soprano pipistrelle	1	-	-	1
3 - B1	second doorway from west on northern elevation facing the courtyard area	Soprano pipistrelle	1	-	-	1

Roosts and Impacts

Findings & Impacts

Reports on the roosts identified

Table 6: The roosts identified during this survey

Roost	Location	Access Point	Type	Species	Peak Count	Impact Level	Impact Scale
1 - B1	Northern Elevation to the west (facing into the courtyard)	gap under the eaves	Day roost	Common pipistrelle	1	Effective destruction	Site
2 - B1	Between tiles and fascia on the gable end	Under tile	Day roost	Soprano pipistrelle	1	Effective destruction	Site
3 - B1	second doorway from west on northern elevation facing the courtyard area	open doorway	Day roost	Soprano pipistrelle	1	Effective destruction	Site
4 - B1	first doorway from west on northern elevation facing the courtyard area	open doorway	Night roost		-	Effective destruction	Site
5 - B1	Western end of B1 in second room from west	Presumably through open barn door	Feeding roost	Brown long-eared bat	-	Effective destruction	Site

Roost 5 (B1): No bat emergencies were observed from Roost 5. However, based on evidence identified during the updated internal inspection, the building is classified as a confirmed bat roost. Approximately 20 scattered droppings were recorded throughout all rooms of B1 and were subsequently confirmed through DNA analysis as originating from Brown Long-eared bats. In addition, feeding remains were identified in the form of around 8 Yellow Underwing

Roosts and Impacts (continued)

moth wings, which are typical prey of Brown Long-eared bats. The presence of both confirmed droppings and feeding remains provides evidence of Brown Long-eared bat use of the building as a night/feeding roost.

Roost 1 (B1): The roost has been characterised as a common pipistrelle (*Pipistrellus pipistrellus*) day roost, with one bat observed emerging from a gap beneath the soffit on the northern elevation at 21:31 during V1. The species could not be confirmed due to both common and soprano pipistrelle calls being recorded at the same time. For the purposes of the assessment, the record has been assigned to common pipistrelle, with subsequent undecided species roosts split evenly between common pipistrelle and soprano pipistrelle, to ensure that both species are appropriately accounted for at the licensing stage.

The proposed works are likely to result in the effective destruction of the roost through the installation of new soffits and fascia boards. Works immediately adjacent to the feature may also result in disturbance to bats. Appropriate mitigation and compensation measures will therefore be required.

Roost 2 (B1): The roost has been characterised as a soprano pipistrelle (*Pipistrellus pygmaeus*) day roost, with one bat observed emerging from between the tiles and fascia on the northern gable end during V1. A soprano pipistrelle call was recorded by the Titley Chorus at a similar time and from the direction of the emergence, supporting the species identification. The roost was only used during V1.

The proposed replacement of the fascia on the gable ends will effectively destroy the roost by removing the existing access point. The works therefore have the potential to directly affect bats using the feature and result in the loss of an established day roost.

Roost 3 (B1): The roost has been characterised as a soprano pipistrelle (*Pipistrellus pygmaeus*) day roost, with one bat observed emerging from the second doorway from the west on the northern elevation at 21:33 during V1 and re-entering at 21:36. The species could not be confirmed as common or soprano pipistrelle, as calls attributed to both species were recorded simultaneously by the Titley Chorus. An additional bat was observed during the updated internal inspection within the timber framing of B1 at the westernmost gable end. Due to the distance, the species could not be confirmed, although its appearance and the absence of distinctive brown long-eared bat features indicated that it was likely a pipistrelle species. For the purposes of the assessment, the roost has been assigned to soprano pipistrelle, with Roost 1 accounting for potential common pipistrelle use.

The proposed works will effectively destroy the roost by blocking the existing access point as part of the conversion to a self-contained dwelling. The works therefore have the potential to directly affect bats using the feature and result in the loss of an established day roost. Appropriate mitigation and compensation measures will therefore be required.

Roost 4 (B1): The roost has been characterised as a common pipistrelle (*Pipistrellus pipistrellus*) night roost, with one bat observed entering the first doorway from the west on the northern elevation at 22:30 during V1. No corresponding emergence was observed. The species could not be confirmed, as both common and soprano pipistrelle calls were recorded around the same time. Based on the bat's appearance and flight behaviour, it was considered to be a pipistrelle species and has been assigned to common pipistrelle for the purposes of the assessment, with the potential use of B1 by soprano

Roosts and Impacts (continued)

pipistrelle accounted for separately.

The proposed works will effectively destroy the roost by blocking the existing access point as part of the conversion to a self-contained dwelling. The works therefore have the potential to directly affect bats using the feature and result in the loss of an established night roost. Appropriate mitigation and compensation measures will therefore be required.

Images of roosts 1, 2 and 3 are shown in figures 3a, 3b and 3c below, with the remaining images shown in Appendix 6.



Figure 3a: Roost 1 (B1)



Figure 3b: Roost 3 (B1)



Figure 3c: Roost 2 (B1) emergence direction

General Observations & Impacts

Findings & Impacts

Summary of all other observations and impacts

Key Foraging Areas

Foraging activity was recorded across the wider site and adjacent habitats during all three survey visits. During V1, one serotine was recorded within the fields to the north of B1. During V2, four common pipistrelles were recorded around the north-eastern side of B1 and northern gable end, with one Myotis sp. recorded moving from the southern to eastern elevations and towards the fields to the east. During V3, common pipistrelle activity was recorded around the western elevation and western trees, with one individual recorded, and within the garden to the north of B1, where two individuals were recorded. All recorded observations lasted no longer than one minute. The recorded activity indicates that the site and immediately surrounding habitats are used by a range of bat species for foraging, with common pipistrelle activity recorded across multiple areas and visits.

Key Commuting Paths

Commuting activity was recorded along three routes across the site during V1 and V3. During V1, one common pipistrelle was recorded commuting from northeast to south along the eastern elevation of B1, while one serotine was recorded moving east to west around the northern elevation. During V3, one common pipistrelle was recorded commuting from north to south between survey position B1-4 and the western elevation. The recorded activity indicates that the elevations of B1 and associated site features provide commuting routes for bats, with common pipistrelle using the site on two survey visits and serotine recorded on one visit.

Impacts on Foraging / Commuting Bats

The proposed development will not result in the loss of suitable foraging or commuting habitat, with the amenity garden, surrounding vegetation and wider landscape retained. The surveys confirmed use of the site by common pipistrelle, serotine and Myotis species for foraging and commuting, although all recorded observations were brief, lasting no longer than one minute. Construction activities and additional lighting have the potential to temporarily disturb bats and reduce the suitability of retained habitats, particularly where lighting spills onto building elevations, gardens and surrounding vegetation. Subject to the retention of existing habitats and the implementation of a sensitive lighting strategy to maintain dark corridors, significant impacts on foraging and commuting bats are not anticipated.

Hibernation suitability

B1 is considered to have low suitability for hibernating bats. Although gaps between the roof tiles and lining provide access to the building, the structure lacks the enclosed, stable and sheltered features typically associated with hibernation. The internal space is vaulted, well sealed and contains no suitable internal crevices. Therefore, no further hibernation surveys are considered necessary.

Requirements & Enhancements

Requirements & Enhancements

Requirements

Five roosts were identified during the course of this survey. One common pipistrelle day roost, two soprano pipistrelle day roosts, one common pipistrelle night roost and one brown long-eared night/feeding roost. The requirements arising from the findings can be found in Table 1.

Bat Licence

A European Protected Species Licence (EPSL) is required to legally permit the works. This requirement exists independently of the planning system, and is required whether planning permission is needed or not, and whether this is listed as a condition of planning or not.

If the licence is not submitted by 16/12/2026 a material changes check will be required.

If the licence is not submitted by 01/05/2027 updated dusk surveys may be required.

The licence can be applied for once planning permission has been granted (where required), and within 3 months of the start of works. Any pre-commencement wildlife related planning conditions that require sign off from the council will need to be discharged prior to licence submission.

DNA

The droppings collected during the PRA/internal inspection have been analysed and confirmed as Brown Long-eared. Please see Appendix 2 for full results.

BRD

BRD will be required. Has been purchased but not yet received. Will be incorporated into the report on receipt from WSBRC.

Mitigation

The licence application will detail any mitigation and compensation measures that will be required for the proposed development to comply with the standing advice and will be designed to reduce any impacts to an acceptably low level so as to maintain (or enhance) the Favourable Conservation Status (FCS) of the local bat population. The EPSL will include (but not be limited to) the following measures:

- The named ecologist will need to visit the site prior to preparation of the licence documents.
- The installation of bat boxes and/or replacement roosts appropriate for the species and roost types present prior to works commencing to form a receptor site for any bats found during the works. Boxes may be installed on buildings or trees or can be pole mounted but must be in an undisturbed location and will need to be maintained in this location post-development. Bat boxes should be positioned 3-5m above ground level

Requirements & Enhancements

Requirements Continued

Mitigation Continued

facing in a south or south-westerly direction with a clear flight path to and from the entrance, away from artificial light.

- Timing restrictions are required for maternity and hibernation roosts.
- The provision of a toolbox talk to contractors, by the Named Ecologist or an Accredited Agent, to inform them of the presence of bat roosts prior to the start of works.
- A pre-commencement inspection of any roost features by the Named Ecologist or an Accredited Agent using a torch and an endoscope (this may be via ladders, scaffolding or a mobile elevated platform).
- Soft demolition of bat roosts by hand under supervision of the named ecologist or accredited agent. The ecologist will move any bats found to the receptor site by gloved hand. If bats are found during periods of adverse weather conditions, these must be left undisturbed until weather conditions become more favourable to move bats to the receptor site.
- Roost replacement appropriate for the species and roost types present will be required on site.
- Post-development monitoring may be required dependent upon species present and roost replacement type.

The EPSL will only include the bat species, numbers and roost types listed above. EPSLs do not allow for the disturbance of hibernating bats. Therefore, if any bats are found during the hibernation period or if any unexpected bat species or roost types are identified works must cease and advice must be sought from the Named Ecologist regarding the possible requirement for timing restrictions for works, the completion of further bat surveys or a modification to the EPSL. If full specifications of mitigation and compensation measures are required for planning determination, these can be provided in a separate standalone document prepared by a suitably experienced ecologist for the species and roost types present.

Wildlife Sensitive Lighting Strategy

Foraging and commuting bats could be impacted by additional lighting on site which can affect resources for the local population. Only common and widespread species were identified on site, therefore no impacts at population level are anticipated. Impacts are at site level only.

A low impact lighting strategy will be adopted for the site during and post-development, and this should be designed in accordance with Guidance Note GN08/23 Bats and Artificial Lighting at Night (Institution of Lighting Professionals, 2023). Parameters can be found on the Bat Conservation Trust website: <https://www.bats.org.uk/news/2023/08/bats-and-artificial-lighting-at-night-ilp-guidance-note-update-released>

Requirements & Enhancements

Enhancements

The creation of additional habitat for bats is recommended in line with the local authorities' duty to request enhancements under the NPPF (2026).

Bat Boxes

The installation of one bat box at the site will provide additional roosting habitat for bats. Bat boxes should be positioned 3-5m above ground level (at the eaves of buildings), facing in a south or south-westerly direction, with a clear flight path to and from the entrance, away from and unlit by artificial light, and not above any windows. The bat boxes will be a specification suitable for crevice dwelling species.

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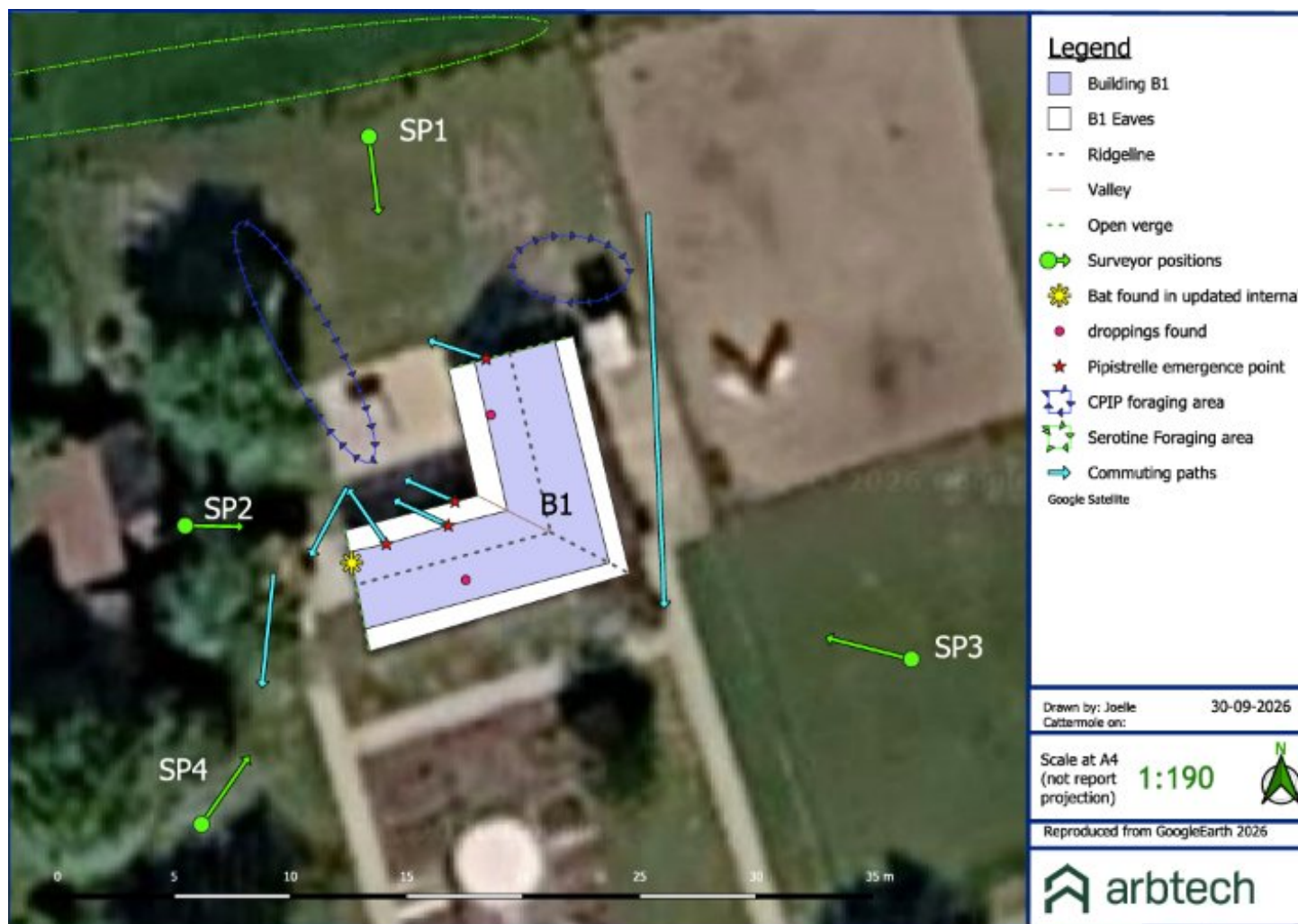
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Version Control

Status	Issue	Name	Date
Draft	0.1	Joelle Cattermole, BSc, Assistant Ecologist	28/09/2026
Review	0.2	Bethany Swain, BSc (Hons) [Accredited Agent on Natural England Licence] and BCT competency level 2, Consultant Ecologist	30/09/2026
Review	0.3	Harley Stone, BSc (Hons), Senior Ecologist	30/09/2026
Final	1.0	Joelle Cattermole, BSc, Assistant Ecologist	30/09/2026

Appendix 1: BERS plan



Plan 1: BERS plan with key activity

Appendix 2: DNA Results



LABORATORY REPORT

Species Identification from Biological Samples

CUSTOMER

Joelle Cattermole
Arbtech
Unit 3, Well House Barns, Chester Road, Chester CH4 0DH,
United Kingdom

ORDER DETAILS

Order Number: EG3924
Order Date: 07/09/2026

Sample Information

Sample ID	EG3924-1
Sample Type	Faecal
Suspected Species	Soprano Pipistrelle
Site Location	2 Sharcott Pennings, Sharcott, Pewsey, Kennet, Wiltshire, SN9 5NJ
Comments	Building 1 - B1
Date Collected	05/08/2026
Date Arrived at Lab	08/09/2026
Results Date	09/09/2026

Laboratory Information

DNA Extraction Code	EG-2026-2669
Identification Method	qPCR
Analysis Procedure Notes	All UK bat species tested for - only a single species detected in this sample.
Laboratory Comments	None

Species Identified

Species	Ct Value
Plecotus auritus (Brown long-eared bat)	23

Appendix 3: Biological Record Details

BRD

Licence required - BRD already obtained

BRD will be required. Has been purchased but not yet received. Will be incorporated into the report on receipt from WSBRC.

Appendix 4: Additional Site Inspection Images



Internal space of B1. Bat identified inside B1 at the westernmost end between timber framing.



Feeding remains identified inside B1.

Appendix 5: Surveyor Photos



V1 B1-1 surveyor photo



V2 B1-1 surveyor photo



V3 B1-1 surveyor photo



V1 B1-1 darkest point image



V2 B1-1 darkest point image



V3 B1-1 darkest point image



V1 B1-2 surveyor photo



V1 B1-3 surveyor photo



V2 B1-3 surveyor photo



V1 B1-2 darkest point image



V1 B1-3 darkest point image



V2 B1-3 darkest point image



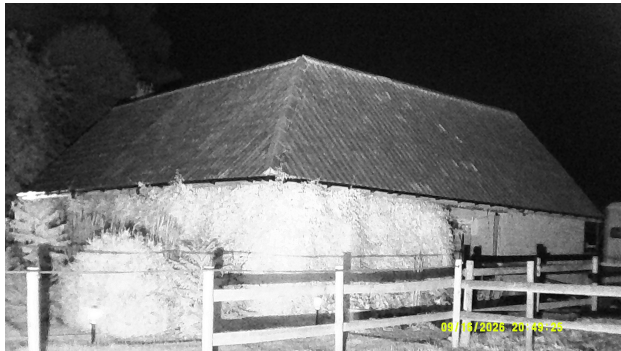
V3 B1-3 surveyor photo



V1 B1-4 surveyor photo



V2 B1-4 surveyor photo



V3 B1-3 darkest point image



V1 B1-4 darkest point image



V2 B1-4 darkest point image



V3 B1-4 surveyor photo

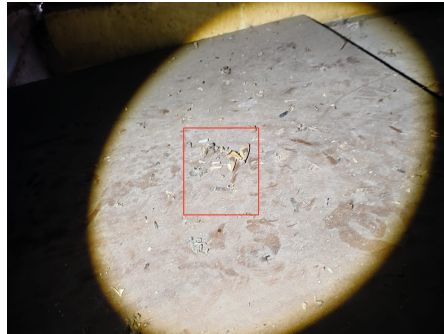


V3 B1-4 darkest point image

Appendix 6: Additional Roost Images



Roost 4 (B1)



Roost 0 (B1) feeding remains



Roost 2 (B1) - bat found internally during updated inspection



Roost 0 (B1) - droppings

Appendix 7: Summary of Call Data

Species	Visit 1	Visit 2	Visit 3	Total
Common pipistrelle	38	14	16	68
Soprano pipistrelle	38	23	4	65
Brown long-eared bat	13	4	-	17
Nyctalus sp.	1	12	-	13
Serotine	5	-	5	10
Myotis sp.	2	3	4	9
Barbastelle	5	3	-	8
Natterer's bat	-	4	-	4
Common noctule	-	1	2	3
Daubenton's bat	-	2	-	2

Appendix 8: Raw Survey Data Log

Pos - Position **Spp** - Species **Act** - Activity **Emer** - Emergence **Fora** - Foraging **Comm** - Commuting **PSR** - Post-survey result **Re-ent** - Re-entry **CPIP** - Common pipistrelle **SPIP** - Soprano pipistrelle **PIPSP** - Pipistrelle sp. **BLE** - Brown long-eared bat **PLECSP** - Plecotus sp. **NOC** - Common noctule **DAUB** - Daubenton's bat **NAT** - Natterer's bat **WHI** - Whiskered bat **WHI/BRAN** - Whiskered/Brandt's bat **MYOSP** - Myotis sp. **SERO** - Serotine **NYCSP** - Nyctalus sp. **LEI** - Leisler's noctule **NPIP** - Nathusius pipistrelle **LHO** - Lesser horseshoe bat **BARB** - Barbastelle **GHO** - Greater horseshoe bat **GLE** - Grey long-eared bat **ALCA** - Alcathoe **BECK** - Bechstein's bat **GME** - Greater mouse-eared bat

Visit 1

Time	Pos	Spp	Act	Notes	PSR
21:00	B1-2	CPIP	Call		PSR
21:02	B1-2	SPIP	Call		PSR
21:03	B1-1	CPIP	Call	Derived from emergence observations	
21:03	B1-1	SPIP	Emer	west (Roost 2)	
21:12	B1-2	BARB	Call		PSR
21:16	B1-3	CPIP	Call		
21:16	B1-2	SPIP	Call		PSR
21:16	B1-2	SPIP	Call		PSR
21:21	B1-2	SPIP	Call		PSR
21:22	B1-2	SPIP	Call		PSR
21:22	B1-2	CPIP	Call		PSR
21:22	B1-1	CPIP	Call		
21:23	B1-2	SPIP	Call		PSR
21:23	B1-2	SPIP	Call		PSR
21:24	B1-2	CPIP	Call		PSR
21:26	B1-2	CPIP	Call		PSR
21:26	B1-2	SPIP	Call		PSR
21:27	B1-2	CPIP	Call		PSR
21:28	B1-2	CPIP	Call		PSR

Visit 1 - ctd

Time	Pos	Spp	Act	Notes	PSR
21:28	B1-2	CPIP	Call		PSR
21:28	B1-2	CPIP	Call		PSR
21:29	B1-2	CPIP	Call		PSR
21:29	B1-1	CPIP	Call		
21:31	B1-2	CPIP	Call	Derived from emergence observations	PSR
21:31	B1-2	CPIP	Emer	west (Roost 1)	PSR
21:32	B1-2	SPIP	Call		PSR
21:32	B1-2	SPIP	Call		PSR
21:32	B1-2	CPIP	Call		PSR
21:32	B1-2	CPIP	Call		PSR
21:32	B1-2	SPIP	Call		PSR
21:32	B1-2	CPIP	Call		PSR
21:32	B1-2	CPIP	Call	Derived from emergence observations	PSR
21:33	B1-2	CPIP	Call		PSR
21:33	B1-2	SPIP	Call		PSR
21:33	B1-1	SPIP	Call		
21:33	B1-1	SPIP	Call		
21:33	B1-2	SPIP	Emer	west (Roost 3)	PSR
21:34	B1-3	CPIP	Call		

Visit 1 - ctd

Time	Pos	Spp	Act	Notes	PSR
21:34	B1-1	SERO	Call		
21:35	B1-3	CPIP	Call		
21:35	B1-2	SPIP	Call		PSR
21:35	B1-2	CPIP	Call		PSR
21:35	B1-2	SPIP	Call		PSR
21:35	B1-2	SPIP	Call		PSR
21:35	B1-1	SERO	Call		
21:36	B1-2	CPIP	Call	Derived from re-entry observations	PSR
21:36	B1-2	CPIP	Call		PSR
21:36	B1-2	CPIP	Call		PSR
21:36	B1-2	CPIP	Call		PSR
21:36	B1-2	CPIP	Call		PSR
21:36	B1-2	CPIP	Call		PSR
21:36	B1-1	SPIP	Call		
21:36	B1-2	SPIP	Re-ent	west (Roost 3)	PSR
21:37	B1-2	CPIP	Call		PSR
21:37	B1-1	CPIP	Call		
21:38	B1-2	BARB	Call		PSR
21:39	B1-2	BLE	Call		PSR

Visit 1 - ctd

Time	Pos	Spp	Act	Notes	PSR
21:40	B1-2	BLE	Call		PSR
21:40	B1-2	BLE	Call		PSR
21:40	B1-2	SPIP	Call		PSR
21:40	B1-2	CPIP	Call		PSR
21:40	B1-3	CPIP	Comm	Northeast to south	
21:41	B1-2	BLE	Call		PSR
21:41	B1-2	BLE	Call		PSR
21:41	B1-2	BLE	Call		PSR
21:41	B1-2	BLE	Call		PSR
21:42	B1-2	SPIP	Call		PSR
21:42	B1-1	SPIP	Call		
21:45	B1-3	SERO	Call	Derived from commuting observations	
21:45	B1-3	SERO	Call	Derived from foraging observations	
21:45	B1-3	SERO	Fora	Off site fields to the north of B1	
21:45	B1-3	SERO	Comm	East to West around north elevation	
21:47	B1-2	NYCSP	Call		PSR
21:47	B1-2	CPIP	Call		PSR
21:48	B1-1	SERO	Call		
21:51	B1-2	SPIP	Call		PSR
21:51	B1-1	SPIP	Call		
21:52	B1-2	SPIP	Call		PSR

Visit 1 - ctd

Time	Pos	Spp	Act	Notes	PSR
21:52	B1-1	SPIP	Call		
21:53	B1-2	SPIP	Call		PSR
21:55	B1-3	CPIP	Call		
21:55	B1-2	SPIP	Call		PSR
21:55	B1-2	BARB	Call		PSR
21:55	B1-2	SPIP	Call		PSR
21:59	B1-2	SPIP	Call		PSR
21:59	B1-1	MYOSP	Call		
22:00	B1-3	BLE	Call		
22:00	B1-2	SPIP	Call		PSR
22:00	B1-1	SPIP	Call		
22:01	B1-2	BARB	Call		PSR
22:05	B1-2	SPIP	Call		PSR
22:05	B1-2	SPIP	Call		PSR
22:06	B1-1	SPIP	Call		
22:07	B1-3	BLE	Call		
22:07	B1-2	SPIP	Call		PSR
22:08	B1-3	CPIP	Call	Derived from commuting observations	
22:08	B1-2	SPIP	Call		PSR
22:09	B1-3	BLE	Call		
22:09	B1-3	CPIP	Call		
22:10	B1-3	BLE	Call		
22:15	B1-3	BLE	Call		
22:18	B1-2	BARB	Call		PSR

Visit 1 - ctd

Time	Pos	Spp	Act	Notes	PSR
22:21	B1-3	SPIP	Call		
22:21	B1-3	MYOSP	Call		
22:22	B1-2	CPIP	Call		PSR
22:23	B1-3	BLE	Call		
22:30	B1-2	CPIP	Call	Derived from re-entry observations	PSR
22:30	B1-2	CPIP	Re-ent	west (Roost 4)	PSR
22:32	B1-2	CPIP	Call		PSR
22:32	B1-2	SPIP	Call		PSR

Visit 2

Time	Pos	Spp	Act	Notes	PSR
19:46	B1-4	NYCSP	Call		PSR
19:47	B1-4	NYCSP	Call		PSR
19:47	B1-4	NYCSP	Call		PSR
19:53	B1-4	NYCSP	Call		PSR
19:55	B1-4	NYCSP	Call		PSR
20:23	B1-4	CPIP	Call		PSR
20:26	B1-4	NYCSP	Call		PSR
20:32	B1-4	CPIP	Call		PSR
20:32	B1-4	SPIP	Call		PSR
20:33	B1-4	SPIP	Call		PSR
20:33	B1-4	SPIP	Call		PSR
20:35	B1-4	CPIP	Call		PSR
20:35	B1-4	CPIP	Call		PSR
20:36	B1-1	SPIP	Call		
20:37	B1-1	SPIP	Call		
20:38	B1-1	SPIP	Call		
20:38	B1-4	SPIP	Call		PSR
20:39	B1-4	SPIP	Call		PSR
20:39	B1-4	CPIP	Call		PSR
20:40	B1-3	CPIP	Call	Derived from foraging observations	
20:40	B1-4	CPIP	Call		PSR

Visit 2 - ctd

Time	Pos	Spp	Act	Notes	PSR
20:40	B1-3	CPIP	Fora	NE side of building around northern gable end	
20:42	B1-1	SPIP	Call		
20:42	B1-3	CPIP	Call	Derived from foraging observations	
20:42	B1-3	CPIP	Fora	NE side of building around northern gable end	
20:44	B1-1	SPIP	Call		
20:44	B1-1	SPIP	Call		
20:45	B1-1	SPIP	Call		
20:46	B1-3	BARB	Call	HNS	
20:47	B1-1	SPIP	Call		
20:47	B1-1	SPIP	Call		
20:48	B1-1	SPIP	Call		
20:52	B1-4	SPIP	Call		PSR
20:54	B1-1	SPIP	Call		
20:56	B1-1	SPIP	Call		
20:59	B1-4	NYCSP	Call		PSR
20:59	B1-4	NYCSP	Call		PSR
21:00	B1-3	NYCSP	Call	Hns	
21:00	B1-4	NAT	Call		PSR
21:01	B1-3	NAT	Call	Heard and seen flying on south side from west to east	
21:01	B1-3	CPIP	Call	Derived from foraging observations	
21:01	B1-3	CPIP	Fora	NE side of building around northern gable end	
21:02	B1-3	CPIP	Call	Derived from foraging observations	

Visit 2 - ctd

Time	Pos	Spp	Act	Notes	PSR
21:02	B1-3	CPIP	Fora	NE side of building around northern gable end	
21:04	B1-1	MYOSP	Call		
21:07	B1-3	NAT	Call	Derived from foraging observations	
21:07	B1-3	MYOSP	Fora	From south to east following the southern building elevation round to the eastern elevation and out to the fields to the east	
21:10	B1-3	DAUB	Call	Hns	
21:10	B1-4	DAUB	Call		PSR
21:11	B1-1	MYOSP	Call		
21:11	B1-1	SPIP	Call		
21:11	B1-3	NAT	Call	Seen flying from eastern side of building and heading east. Check Ur.	
21:11	B1-4	SPIP	Call		PSR
21:13	B1-1	MYOSP	Call		
21:28	B1-1	BLE	Call		
21:28	B1-4	BARB	Call		PSR
21:29	B1-3	BARB	Call	Hns	
21:31	B1-1	CPIP	Call		
21:31	B1-3	CPIP	Call	Hns	
21:34	B1-1	BLE	Call		
21:34	B1-3	NYCSP	Call	Hns	
21:34	B1-4	NYCSP	Call		PSR
21:35	B1-1	NOC	Call		
21:37	B1-1	SPIP	Call		

Visit 2 - ctd

Time	Pos	Spp	Act	Notes	PSR
21:40	B1-3	NYCSP	Call	HNS	
21:41	B1-1	BLE	Call		
21:43	B1-1	BLE	Call		
21:43	B1-1	SPIP	Call		
21:43	B1-3	SPIP	Call	HNS	
21:49	B1-3	CPIP	Call	Hns	
21:52	B1-3	CPIP	Call	Hns	

Visit 3

Time	Pos	Spp	Act	Notes	PSR
19:33	B1-4	CPIP	Call	HNS	
19:41	B1-3	CPIP	Call	HNS	
19:42	B1-4	CPIP	Call	Derived from commuting observations	
19:42	B1-4	CPIP	Comm	North to South between position B1-4 and the western elevation	
19:45	B1-1	SPIP	Call		
19:48	B1-4	SERO	Call	HNS	
19:48	B1-3	SERO	Call	HNS	
19:48	B1-1	SERO	Call		
19:49	B1-1	CPIP	Call		
19:50	B1-4	CPIP	Call	Derived from foraging observations	
19:50	B1-4	CPIP	Fora	Looping around the western elevation of B1 and around the western trees	
19:51	B1-3	CPIP	Call	Pass west to east across elevation	PSR
19:52	B1-1	SPIP	Call		
19:52	B1-1	CPIP	Call	Derived from foraging observations	
19:52	B1-1	CPIP	Fora	Looping around garden to the northern elevation	
19:55	B1-4	CPIP	Call	HNS	
19:56	B1-1	CPIP	Call	Derived from foraging observations	
19:56	B1-1	CPIP	Fora	Looping around garden to the northern elevation	
19:57	B1-1	CPIP	Call		
20:01	B1-3	CPIP	Call	Pass from south to north over position	PSR
20:07	B1-4	CPIP	Call	HNS	
20:07	B1-3	CPIP	Call	HNS	
20:08	B1-3	SERO	Call	HNS	
20:09	B1-1	SPIP	Call		

Visit 3 - ctd

Time	Pos	Spp	Act	Notes	PSR
20:21	B1-3	CPIP	Call	HNS	
20:23	B1-4	MYOSP	Call	HNS	
20:23	B1-3	MYOSP	Call	Pass west to east over elevation	PSR
20:24	B1-1	MYOSP	Call		
20:29	B1-3	SERO	Call	Pass east to west across elevation	PSR
20:32	B1-4	MYOSP	Call	HNS	
20:35	B1-1	CPIP	Call		
20:42	B1-3	SPIP	Call	HNS	
20:42	B1-1	CPIP	Call		
20:43	B1-4	NOC	Call	HNS	
20:43	B1-1	NOC	Call		

Appendix 9: General Methodology

BAT EMERGENCE AND RE-ENTRY SURVEY METHODOLOGY — GENERAL

1. Survey Aims and Approach

Dusk bat emergence surveys (and, where justified, dawn re-entry surveys) were undertaken to determine the presence or likely absence of roosting bats and, where present, to characterise roosts by species, numbers, access points, roost type and how bats use the site. Survey design follows an iterative approach: results and audit data are reviewed after each visit so that subsequent survey effort, positioning, equipment deployment and objectives can be refined as needed (BCT 7.2.17; 10.1.1).

2. Guidance and Standards

All surveys were designed and delivered with reference to Bat Surveys for Professional Ecologists — Good Practice Guidelines (4th ed.) (Collins, 2023), the CIEEM Guidelines for Ecological Report Writing (2nd ed.) (CIEEM, 2017a), and other relevant guidance including Natural England standing advice for bats (updated April 2025) and BS 42020:2013. Where departures from published good practice were made, the report identifies what changed, why, how survey robustness was maintained, and the competence of the ecologist(s) making that judgement (BCT 1.1.4–1.1.5; 2.2.32–2.2.33).

3. Competence and Roles

Survey design and oversight were provided by Consultant Ecologist Bethany Swain BSc (Hons) (Accredited Agent on Natural England Licence) and BCT competency level 2. On-site survey work was led by Joelle Cattermole, BSc at BCT Level 2 competence, supported by 1 additional Bat Surveyor. Bat Surveyors (minimum BCT Level 1, trained to internal standard) worked under the supervision of the Project Surveyor and were responsible for data collection at their manned positions, including real-time species identification and operating IR camera/acoustic equipment. Training records and competency sign-offs are maintained in line with CIEEM Code of Professional Conduct. Full surveyor details are provided in Table 2.

4. Survey Timing, Effort and Seasonal Windows

Survey effort was set in line with BCT Tables 7.1 and 7.2 and reviewed as results emerged. Dusk emergence surveys commenced with surveyors and equipment in place 15 minutes before sunset and continued for 1.5–2 hours after sunset (BCT 7.2.31). Survey visits were spaced a minimum of three weeks apart and timed within the core May–August survey window wherever feasible. Where September surveys were required, the report details the justification, how robustness was maintained, and any residual uncertainty.

Survey dates, start/end times, and sunset/sunrise times are provided in the survey visit details section of the report.

5. Weather Conditions

Surveys were undertaken only when conditions were likely to support typical bat emergence and flight behaviour. Conditions were assessed using forecasts and confirmed on arrival. Minimum thresholds: temperature >7°C at survey start; wind ≤ Beaufort Scale 3 (~5 m/s); no persistent heavy rain. Where suboptimal but permissible conditions occurred (e.g. intermittent light drizzle), these are recorded and interpretation reflects this. Weather data recorded during each survey are provided in the survey visit details section of the report.

6. Survey Area and Position Design

The survey area comprised 1 building, selected on the basis of the PRA findings and/or tree assessment results. Justification for the extent of survey coverage is provided in the Site Context and Background section.

The arrangement of surveyors and equipment was informed by the Preliminary Roost Assessment (structures) and/or tree assessment (PRFs/GLTA) so that identified roosting features and likely access points were the focus of coverage, while recognising that bats may emerge from unexpected locations (BCT 7.2.12). Where NVAs were deployed, a still image or screenshot was captured from the darkest point of the survey from each NVA to demonstrate field of view and adequacy of illumination; these are provided in 5 (BCT 7.2.10). Surveyor and equipment positions for each survey visit are shown on Appendix 1.

7. Equipment Standards

All electronic survey equipment (detectors, recorders and NVAs) was tested prior to deployment (function check, storage capacity, battery health, time synchronisation) and calibrated/tested in line with manufacturer guidance, typically at least annually, with evidence retained and available on request (BCT 2.5.14). Microphone sensitivity was verified prior to the survey season, as sensitivity can decline over time (BCT 2.5.16). Equipment was selected as suitable for the target species and site conditions (BCT 2.5.13; 2.5.17). Detector settings and deployment metadata were documented consistently, including gain/sensitivity, trigger parameters, recording format, sample rate, firmware/app version, time settings and any filters applied (BCT 2.5.15; 2.5.20). Equipment details and settings are provided in Table 3.

8. Data Capture and Acoustic Analysis

All results were recorded using a standardised digital survey form, including surveyor positions, start/end times, weather at intervals, equipment identifiers, detector settings, observed emergences/returns, bat passes, flight direction, behaviour notes and confidence/uncertainty notes (BCT 7.2.19). Raw audio/video recordings and metadata were retained as an auditable record. Negative survey results were also recorded (BCT 2.5.19).

A bat pass was defined as a sequence of two or more echolocation pulses produced by an individual bat, with a new pass recorded when a gap of one second or more occurred between successive calls. Where sustained activity was recorded (e.g. circling bats), this was noted as sustained activity rather than counted as individual passes.

At manned positions, species identification was carried out in real-time by the ecologist using a heterodyne detector for live listening and an Echo Meter Touch (built-in MEMS microphone) for full-spectrum recording. All recordings were retained as an auditable record. Post-survey acoustic review was undertaken only where specific calls could not be confidently identified on site; these were reviewed using Wildlife Acoustics Kaleidoscope Pro with reference to Russ (2012)

British Bat Calls: A Guide to Species Identification.

Where semi-manned positions were deployed (Titley Chorus with ultrasonic microphone), recordings were processed through Titley Scientific Anabat Insight (BatClassify UK plug-in) to provide automated species identification. Auto-ID outputs were subject to targeted manual verification by an experienced ecologist using Kaleidoscope Pro. Manual verification was applied to: uncertain or low-confidence classifications; any classifications of conservation-significant, locally uncommon or Annex II species regardless of confidence score (BCT 10.2.19); and any records detected at unusual times. Manual verification involved visual inspection of spectrograms and examination of call parameters including peak frequency (kHz), start and end frequency (kHz), call duration (ms), inter-pulse interval (ms), bandwidth (kHz), and call shape/structure (e.g. FM, FM-QCF, QCF). Where calls could not be confidently assigned to species level (e.g. *Myotis* species group), they were recorded at the most reliable taxonomic level.

It is acknowledged that automated classification software is not infallible; false positives and false negatives may occur. Different species can produce similar calls, and recording quality, environmental conditions and bat behaviour can affect call characteristics. Some species groups (e.g. *Myotis* spp., *Nyctalus/Eptesicus*) cannot be reliably separated by echolocation alone (Russ, 2012). Where auto-ID was used, the system and version, validation steps, thresholds and manual verification criteria are documented in Appendix 9 (BCT 10.2.21).

Acoustic data were reviewed promptly after each survey to inform subsequent survey design (BCT 2.2.16; 10.1.1).

9. Health and Safety

A site-specific risk assessment was prepared addressing both site and generic survey hazards (night working, slips/trips, lone working, antisocial behaviour risk). The risk assessment was reviewed on arrival at each visit, and new hazards identified on site were recorded for subsequent visits (BCT 2.7.3).

10. Report Quality Assurance

This report has been written by, or reviewed by, a senior member of staff to confirm technical adequacy, clarity and that recommendations are justified (BCT 11.4.1). Survey effort has been checked as part of project quality assurance (BCT 7.2.13).

11. Limitations and Survey Validity

Survey data in this report were collected during the 2026 survey season. In accordance with CIEEM (2019) Advice Note on the Lifespan of Ecological Reports and Surveys, survey data are generally considered valid for up to 12 months / state period from the date of the last survey visit. Where this report is relied upon beyond that period, an update assessment may be required.

References

References relevant to this methodology.

- BCT (2023, amended 27.03.2024) Bat Surveys for Professional Ecologists — Good Practice Guidelines (4th ed.). Bat Conservation Trust, London.

- BCT / Fawcett-Williams, J. (2021) Thermal Imaging: Bat Survey Guidelines. Bat Conservation Trust, London.
- CIEEM (2017a) Guidelines for Ecological Report Writing (2nd ed.). CIEEM, Winchester.
- CIEEM (2019) Advice Note on the Lifespan of Ecological Reports and Surveys. CIEEM, Winchester.
- BSI (2013) BS 42020:2013 Biodiversity — Code of practice for planning and development. British Standards Institution, London.
- Natural England (2025) Bats: advice for making planning decisions. Updated April 2025.
- Russ, J. (2012) British Bat Calls: A Guide to Species Identification. Pelagic Publishing, Exeter.

Appendix 10: Survey Methodology

BAT EMERGENCE SURVEY METHODOLOGY — HYBRID NVA/ECOLOGIST SURVEY

1. Survey Method

This survey used a hybrid approach combining manned positions (ecologist with NVA, live detector and recording) and semi-manned automatic recording positions (NVA with dedicated static audio detector). Semi-manned positions were deployed to maintain coverage of roosting features while reducing the number of human positions required, consistent with BCT guidance that NVAs can reduce the number of surveyors where appropriately deployed with a detector soundtrack and evidence of efficacy (BCT 7.2.8; 7.2.11).

2. Position Design

The arrangement of manned and semi-manned positions was determined from the PRA and/or tree PRF assessment, with coverage designed so that all elevations and identified roosting features were monitored (BCT 7.2.12). Survey design and oversight were provided by Consultant Ecologist Bethany Swain BSc (Hons) (Accredited Agent on Natural England Licence) and BCT competency level 2. at BCT Level 3 competence (BCT 7.2.6). Manned positions were staffed with either Project Surveyors or Bat Surveyors, who were responsible for data collection, including real-time species identification and recording all bat activity, including peripheral activity across the wider site (BCT 7.2.13). Semi-manned positions were monitored by either the Project Surveyor or Bat Surveyors, which were allocated by the Project Surveyor. Where required, additional assistants were present to monitor semi-manned positions to provide additional equipment security. Surveyor and equipment positions are shown on Appendix 1.

3. Equipment

Manned positions: IR camera (Nightfox Whisker) with tripod; true IR illumination source (Nightfox XB5 Pro 850 nm); tablet for digital data capture; full-spectrum detector (Echo Meter Touch, built-in MEMS microphone) with recording enabled, supplemented by heterodyne detector for real-time species identification; radio communication; red-light head torch; weather meter/anemometer.

Semi-manned positions: IR camera with true IR illumination source; full-spectrum static bat detector/recorder (Titley Chorus with ultrasonic microphone, unique identifier) deployed on a tripod at approximately 1.5–2 m above ground level, with the microphone oriented horizontally and directed towards the building features under observation — height and orientation were adjusted on site as necessary to maximise acoustic coverage of identified roosting features; tripod/clamp system for stable alignment and security.

Staffing and equipment deployment were designed to ensure survey effort was not diluted across the site, with sufficient coverage of all relevant elevations and features (BCT 7.2.15).

All equipment was tested and calibrated in line with manufacturer guidance, with evidence retained and available on request (BCT 2.5.14). Detector settings

(gain/sensitivity, trigger parameters, recording format, sample rate, firmware version, time settings) were documented (BCT 2.5.15; 2.5.20). Equipment details and settings are provided in Table 3, along with any deviations from this kit list.

4. Survey Operation

All equipment was deployed and operational before the 15-minute pre-sunset survey start. Each NVA was checked for focus, field of view and adequacy of true IR illumination (BCT 7.2.10). NVAs and audio recorders were turned on before the survey window and remained running until after completion (BCT 7.2.11). During the survey, each surveyor monitored their allocated NVAs and carried out operational checks (recording status, IR illumination timing, lamp alignment). Surveyors maintained constant radio contact. A still image was captured from the darkest point of the survey from each NVA to demonstrate field of view and illumination adequacy; these are provided in Appendix 5 (BCT 7.2.10).

5. Post-Survey Review

NVA footage was reviewed promptly (typically the following day) while the survey remained fresh in surveyors' minds (BCT 7.2.16). Acoustic files were processed promptly to inform subsequent survey design (BCT 2.2.16; 10.1.1). Results from each visit were used to refine positioning, equipment deployment and objectives for subsequent visits where required (BCT 7.2.17). Where overlap between independent observer and NVA detections was noted, this was recorded to support internal quality assurance (BCT 7.2.14). Where bats were observed emerging, survey interpretation recognised that the roosting location may differ from the emergence point, and follow-up survey design was adjusted accordingly (BCT 7.2.17).

6. Justification for Method

This hybrid approach was selected as appropriate for the site based on the site complexity, the number of roosting features and safe deployment conditions for equipment. The method maintains full auditable NVA and acoustic coverage of all identified roosting features while providing direct ecologist observation at key positions.

7. Limitations

All limitations are listed, along with their impact level, in the Limitations section of the main report.