

Bat Emergence and Re-Entry Survey

Survey Site

**37 London Road, Pulborough, West
Sussex
RH20 1AS**

Client

McHale Contractors Ltd

Report Date

22/07/2026

Project

This report is prepared to inform a planning application for the proposal described as "Demolition of existing buildings and erection of apartment building, together with associated access, car parking and landscaping".

This report is supplementary to the Preliminary Roost Assessment report completed by Arbtech Consulting Ltd (2025).

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

Kat Fasken-Wall, BA (Hons)

Assistant Ecologist

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Survey Author & Designer

Survey design and oversight were provided by Senior Ecologist Harley Stone BSc (Hons), (Natural England Bat License No. 2025-85748-CL17-BAT) at BCT Level 2 competence.

Executive Summary

This report is an addendum to and must be read in conjunction with the Preliminary Roost Assessment completed by Arbtech Consulting Limited (2025) 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.

No emergencies were recorded during the surveys. However, an existing record of a soprano pipistrelle maternity roost on site was identified within the PRA, based on data from NBN Atlas and Sussex Bat Group. The requirements arising from this finding are provided in Table 1.

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

Requirement	Details
Bat Licence	A Bat 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 licence is not submitted by 20/10/2026 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.
BRD	Due to the presence of bat roosts on site, local bat records will need to be obtained to inform the licence application.
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 will be required. The level of survey effort will depend on the specific circumstances of the site.

Site Context and Background

Background

A Preliminary Ecological Appraisal and Preliminary Roost Assessment was undertaken by Arbtech Consulting Ltd on 18 September 2025 in relation to the proposed demolition of buildings onsite and erection of two new buildings at 37 London Road, Pulborough.

The site comprises approximately 0.058ha and includes one dwelling, B1, an associated outbuilding, B2, modified grassland dominated by ruderal species, bramble scrub and hardstanding. The site is located within Pulborough village, with residential dwellings to the north, east and south, a railway line with a tree-lined boundary and arable fields to the west, and woodland approximately 10m northeast of the site. The surrounding woodland, railway line and arable field boundaries are likely to provide some suitable commuting and foraging opportunities for local bat populations.

The PRA assessed two buildings on site. B1 is a detached two-storey brick-built building with a flat bitumen felt roof and no loft space. B1 was assessed as having moderate habitat value for roosting bats due to the presence of suitable crevice features, including a raised soffit on the eastern elevation and raised lead flashing above the hanging tiles. The report also notes that, according to NBN Atlas and Sussex Bat Group, the site contains a soprano pipistrelle maternity roost. B2 is a detached single-storey brick-built outbuilding with a flat corrugated asbestos roof and was assessed as having negligible habitat value for roosting bats due to the absence of suitable roosting features, lack of loft space and exposure to temperature fluctuations.

The proposed development will result in the demolition of B1 and B2. Demolition of B1 could result in the disturbance, damage or destruction of bat roosts associated with the identified crevice features and recorded soprano pipistrelle maternity roost. Although B1 was assessed as having moderate habitat value for roosting bats, three bat emergence surveys were recommended due to the recorded soprano pipistrelle maternity roost at the site.

Context

Number of buildings on site

2

Number of buildings surveyed

1

Reason for omitting buildings

Building B2 was determined to have negligible bat roosting value.

Site Inspection

An updated external inspection was undertaken by Natalie Evans BA (Hons), MA, MRSB, Principal Consultant, Bat Licence Lead with Class 2 Bat Licence, on 20 May 2026. No evidence of bats was identified externally, with no notable changes to external structures recorded. Subsequent external inspections were undertaken by Kat Fasken-Wall, BA (Hons) Assistant Ecologist, on all site visits as part of the BERS survey. The inspections were completed on all elevations and looked for evidence of bats, including droppings and staining. No loft voids were present within B1, and therefore no internal loft inspection was required. No evidence of bats, material changes to the building, or changes to access points or roosting suitability were identified. The conclusions of the original Preliminary Roost Assessment (Arbtech Consulting Ltd, 18/09/2025) are therefore considered to remain valid.



Figure 1a: Hanging tiles and soffits on southeastern elevation of B1.

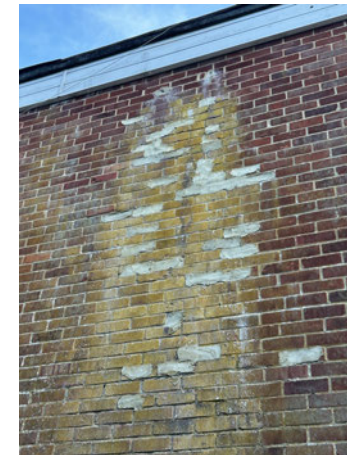


Figure 1b: Concrete infill of brick work on northeastern elevation of B1.

Proposed Works

Proposed Development

Current use of building(s)

B1 is currently used as a dwelling.

Proposed use of building(s)

B1 and B2 are set to be demolished.

Structural changes to building(s)

B1 and B2 are set to be demolished.

Cosmetic/repair work

N/A.

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
Abigail Louise Dodge	6 years	N/A	Level 1
Kat Fasken-Wall	2 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	2	2	2
Additional illumination	Nightfox XB5 PRO	2	2	2
Two-way radio	BAOFENG FV-880E two-way radio (or similar)	2	2	2
Bat detector	Anabat scout	1	1	1
Additional illumination	Nightfox Arc IR Floodlight	1	1	1
Bat detector	Wildlife Acoustics Echo Meter Touch 2	1	1	1
Bat detector	Magenta Electronics Bat 4	1	1	1

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	Southern	Kat Fasken-Wall	Kat Fasken-Wall (LS)	Kat Fasken-Wall
B1-2	Northern	Abigail Louise Dodge	Abigail Louise Dodge	Abigail Louise Dodge

Survey Visit Details and Limitations

Visit 1 08/06/2026			Visit 2 29/06/2026			Visit 3 20/07/2026			Limitations There are no limitations associated with this survey.
Start time	Sunset	End time	Start time	Sunset	End time	Start time	Sunset	End time	
20:58	21:13	22:43	21:04	21:19	22:49	20:49	21:04	22:34	
Start Conditions			Start Conditions			Start Conditions			
Temperature(°C): 13.8			Temperature(°C): 17.7			Temperature(°C): 18.8			
Relative humidity (%): 63.0			Relative humidity (%): 68.0			Relative humidity (%): 59.0			
Wind (km/h): 8.1			Wind (km/h): 15.7			Wind (km/h): 9.4			
End Conditions			End Conditions			End Conditions			
Temperature(°C): 10.9			Temperature(°C): 15.7			Temperature(°C): 15.8			
Relative humidity (%): 71.0			Relative humidity (%): 76.0			Relative humidity (%): 72.0			
Wind (km/h): 6.4			Wind (km/h): 3.2			Wind (km/h): 5.7			
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			

Roosts and Impacts

Findings & Impacts

Reports on the roosts identified

Table 5: The roosts identified during this survey

Roost	Location	Access Point	Type	Species	Count	Impact Level	Impact Scale
1 - B1	B1	-	Maternity roost	Soprano pipistrelle	-	Destruction	Site

Roost 1 (B1): No soprano pipistrelle emergences were recorded from Roost 1 during the BERS surveys, therefore no access points were identified. However, Roost 1 has been classified as a soprano pipistrelle maternity roost based on the existing roost record identified within the Preliminary Roost Assessment, which states that the site contains a soprano pipistrelle maternity roost according to NBN Atlas and Sussex Bat Group.

General Observations & Impacts

Findings & Impacts

Summary of all other observations and impacts

Key Foraging Areas

Foraging activity was observed by a soprano pipistrelle around a spruce tree in the northeastern garden of B1; by a common pipistrelle around the northwestern front garden of a neighbouring dwelling; by soprano pipistrelles in the northwestern neighbouring garden into the northeastern garden of B1; and by a soprano and common pipistrelle from northwest to southeast and vice versa down the driveway east of B1.

Key Commuting Paths

Key commuting activity was observed by soprano pipistrelles and a non-echolocating pipistrelle species from west to east and vice versa across the northeastern rear garden of B1; and by soprano pipistrelles from southwest to northeast down the driveway west of B1.

Impacts on Foraging / Commuting Bats

No significant impacts on foraging or commuting bats are anticipated, provided a low impact lighting strategy is adopted during and post-development.

Hibernation suitability

The site offers limited suitable hibernating habitat for bats in the form of external crevice features associated with B1, including the raised soffit on the eastern elevation and raised lead flashing above the hanging tiles. However, no loft voids are present within B1, and the building is unlikely to provide stable, cool and undisturbed conditions suitable for hibernating bats. Although a soprano pipistrelle maternity roost record is associated with the site, this relates to active-season roost use and does not indicate hibernation use. B2 was assessed as having negligible habitat value for roosting bats due to the absence of suitable roosting features. The hibernation value of the site is therefore considered to be low, and no additional hibernation surveys are required.

Requirements & Enhancements

Requirements & Enhancements

Requirements

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 20/10/2026 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.

BRD

Due to the presence of bat roosts on site, local bat records will need to be obtained to inform the licence application.

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 are not limited to) the following measures:

- Timing of works to avoid the maternity season (May to September)
- The installation of bat boxes or replacement bat roosts 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 facing in a south or south-westerly direction with a clear flight path to and from the entrance, away from artificial light.
- 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.
- 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).
- The removal of all hanging tiles and fascia boards by hand under the supervision of the Named Ecologist or an Accredited Agent. The roof

Requirements & Enhancements

Requirements Continued

Mitigation Continued

will also require soft demolition but this does not necessarily need to be supervised.

- Avoiding the use of unnecessary lighting, particularly at night, or implementing a low impact lighting strategy to avoid illumination of retained or newly created roosts or roost features.
- Avoiding excessive noise or vibration disturbance e.g. from power tools or radios, within close proximity of retained or newly created roosts or roost features.
- Like for like roost replacement is required on site – details TBC by the Named Ecologist once appointed.
- Post development monitoring will be required in years 2 and 4 post development. This will involve a dusk emergence survey to cover all replaced roosts, and inspection of any bat roosts where possible.

You must include a certificate that proves the roofing membrane has passed a 'snagging propensity test' if you're using a non-bitumen coated roofing membrane. A snagging propensity test checks that the membrane can stand the repeated snagging actions of roosting bats. To pass, a membrane must show no change in the average number of loops per cm² as rotations are increased from 0 to 1000. You do not need a certificate for bitumen 1F felt that has a non-woven, short fibre construction.

If a BRM is being used instead of a type 1f bitumen, the installation of the membrane will need to be supervised by the ecologist to ensure everything is installed as per manufacturers specifications and no damage occurs. This is because if any damage occurs or if it is not installed correctly, the BRM is no longer 'bat safe' and therefore would no longer be permitted under the terms and conditions of the EPSL.

Should timber treatment be required in bat roosts, this should follow guidance set out at the below link:

<https://www.gov.uk/government/publications/bat-roosts-insecticides-and-timber-treatments/timber-treatment-products-suitable-for-use-in-or-near-bat-roosts>.

The EPSL will only include the bat species, numbers and roost types listed above. 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 bat box.

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.

Requirements & Enhancements

Requirements Continued

Wildlife Sensitive Lighting Strategy

The proposed development is not expected to result in a significant loss of bat foraging or commuting habitat. Given the availability of more extensive habitat in the surrounding area, including the railway line with a tree-lined boundary to the west and woodland approximately 10m northeast of the site, the loss of small areas of modified grassland and bramble scrub is considered negligible.

Potential impacts from increased artificial lighting will be minimised through a low impact lighting strategy during construction and post-development. This will be designed in accordance with Guidance Note GN08/23: Bats and Artificial Lighting at Night (Institution of Lighting Professionals, 2023), and should avoid illumination of confirmed or potential roosting features, retained boundary habitats, the railway corridor and nearby woodland. 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>

Enhancements

The creation of additional habitat for bats is recommended in line with the local authorities' duty to request enhancements under the NPPF (2024).

Bat Boxes

The installation of two bat boxes at the site will provide additional roosting habitat for bats. The bat boxes will be integrated within the new build dwellings. 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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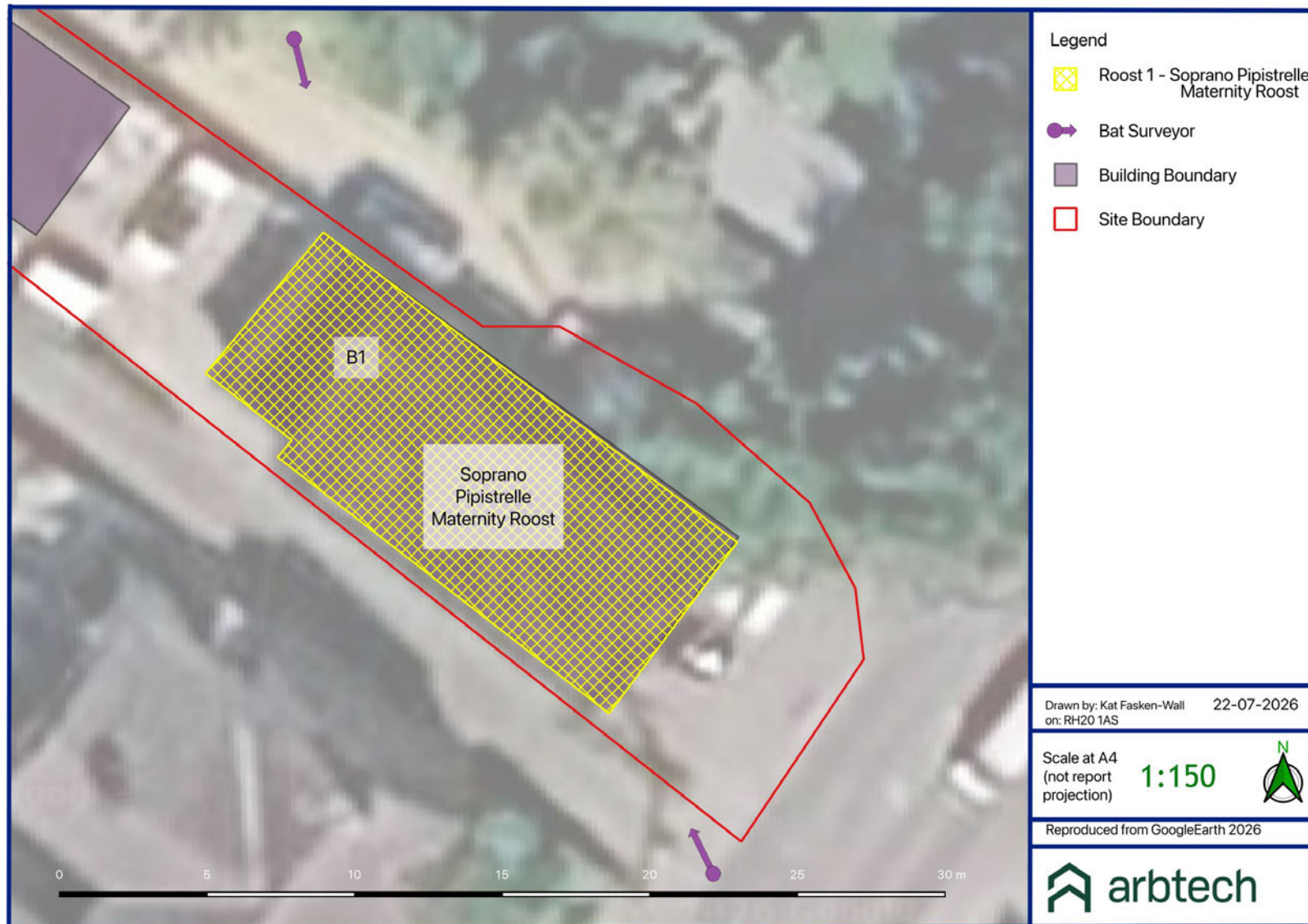
Version Control

Status	Issue	Name	Date
Draft	0.1	Kat Fasken-Wall, BA (Hons), Assistant Ecologist	22/07/2026
Review	0.2	Natalie Evans, MA, MRSB, Principal Consultant	26/07/2026
Final	1.0	Kat Fasken-Wall, BA (Hons), Assistant Ecologist	27/07/2026
Review	1.1	Kat Fasken-Wall, BA (Hons), Assistant Ecologist	28/07/2026
Final	2.0	Kat Fasken-Wall, BA (Hons), Assistant Ecologist	28/07/2026

Appendix 1: BERS plan



Plan 1: BERS Plan with Activity.

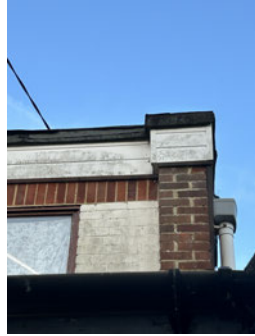


Plan 2: Roost Location

Appendix 2: Additional Site Inspection Images



Concrete infill in brick work on northeastern elevation of B1.



Close up of soffits on northwestern elevation of B1.

Appendix 3: 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



V2 B1-2 surveyor photo



V3 B1-2 surveyor photo



V1 B1-2 darkest point image



V2 B1-2 darkest point image



V3 B1-2 darkest point image

Appendix 4: Summary of Call Data

Species	Visit 1	Visit 2	Visit 3	Total
Soprano pipistrelle	7	9	11	27
Pipistrelle sp.	1	1	7	9
Common pipistrelle	3	1	4	8
Common noctule	-	2	1	3
Serotine	-	2	-	2

Appendix 5: 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** - Alcahoo **BECK** - Bechstein's bat **GME** - Greater mouse-eared bat

Visit 1

Time	Pos	Spp	Act	Notes	PSR
21:09	B1-2	SPIP	Call	Derived from foraging observations	
21:09	B1-2	SPIP	Fora	Foraging seen around spruce tree in rear garden, to then pass in a north easterly direction towards neighbouring property.	
21:28	B1-2	SPIP	Call	Derived from commuting observations	
21:28	B1-2	SPIP	Comm	Pass west to east through the rear garden from the direction of the shed in the western corner, across neighbouring driveway and garden, flying in an easterly direction.	
21:29	B1-1	SPIP	Call	Derived from commuting observations	
21:29	B1-1	SPIP	Comm	West to East down corridor between buildings	
21:32	B1-2	SPIP	Call	Derived from commuting observations	
21:32	B1-2	SPIP	Comm	Pass west to east through the rear garden from the direction of the shed in the western corner, across neighbouring driveway and garden, flying in an easterly direction.	
21:33	B1-2	SPIP	Call	Derived from commuting observations	

Visit 1 - ctd

Time	Pos	Spp	Act	Notes	PSR
21:33	B1-2	SPIP	Comm	Pass west to east through the rear garden from the direction of the shed in the western corner, across neighbouring driveway and garden, flying in an easterly direction.	
21:36	B1-1	SPIP	Call	HNS	
21:55	B1-2	SPIP	Call	Derived from commuting observations	
21:55	B1-2	SPIP	Comm	Passing north east to southwest, from direction of northeast neighbouring property to pass in front of B1's northwest facing elevation.	
22:09	B1-2	CPIP	Call	Derived from foraging observations	
22:09	B1-2	CPIP	Call	Foraging heard not seen	
22:09	B1-2	CPIP	Fora	A common pipistrelle seen passing in front of B1 north west facing elevation to then forage in circular motions amongst foliage at southeastern end of northeast facing elevation, and then left site via neighbouring northeast front garden.	
22:10	B1-1	CPIP	Call	HNS	
22:15	B1-2	PIPSP	Call	Derived from commuting observations	

Visit 1 - ctd

Time	Pos	Spp	Act	Notes	PSR
22:15	B1-2	PIPSP	Comm	Pass west to east through the rear garden from the direction of the shed in the western corner, across neighbouring driveway and garden, flying in an easterly direction.	

Visit 2

Time	Pos	Spp	Act	Notes	PSR
21:19	B1-2	SPIP	Call	Derived from commuting observations	
21:19	B1-2	SPIP	Comm	Flight line 1: a pass from neighbouring easterly garden, passing over driveway into B1 rear garden in a westerly direction.	
21:27	B1-2	SPIP	Call	Derived from commuting observations	
21:27	B1-2	SPIP	Comm	Pass west to east through the rear garden from the direction of the shed in the western corner, across neighbouring driveway and garden, flying in an easterly direction.	
21:29	B1-2	SPIP	Call	Derived from commuting observations	
21:29	B1-2	SPIP	Comm	Flight line 1: a pass from neighbouring easterly garden, passing over driveway into B1 rear garden in a westerly direction.	
21:31	B1-2	SPIP	Call	Derived from commuting observations	
21:31	B1-2	SPIP	Comm	Flight line 3: Passing through laurel at southeast (entrance) end of neighbours driveway, looping round tp the north in a half circle motion over neighbouring northeast garden and over driveway to then fly in a westerly direction over B1's rear gatden.	
21:33	B1-2	SPIP	Call	Derived from commuting observations	
21:33	B1-2	SPIP	Comm	Flight line 1: a pass from neighbouring easterly garden, passing over driveway into B1 rear garden in a westerly direction.	

Visit 2 - ctd

Time	Pos	Spp	Act	Notes	PSR
21:35	B1-2	SPIP	Call	foraging heard not seen until 21.36	
21:40	B1-2	SERO	Call	briefly heard not seen	
21:41	B1-2	PIPSP	Call	Derived from commuting observations	
21:41	B1-2	PIPSP	Comm	Flight line 4: passing from the southeast from neighbouring easterly garden and over driveway, to fly in a westerly direction infront of B1's north, north westerly facing elevation	
21:44	B1-1	CPIP	Call	Derived from commuting observations	
21:44	B1-1	CPIP	Comm	Behind me to in front, following alley	
21:48	B1-2	SPIP	Call	Derived from foraging observations	
21:48	B1-2	SPIP	Fora	Flight line 5: Passing from the northern end of the the easterly neighbouring garden to forage in circular motions over northern end of neighbours driveway before passing in a westerly direction over the northern end of B1's rear garden.	
21:50	B1-2	SPIP	Call	Derived from foraging observations	
21:50	B1-2	SPIP	Fora	Flight line 5: Passing from the northern end of the the easterly neighbouring garden to forage in circular motions over northern end of neighbours driveway before passing in a westerly direction over the northern end of B1's rear garden.	
22:26	B1-2	NOC	Call	heard not seen	
22:27	B1-1	SPIP	Call		
22:27	B1-1	SERO	Call		

Visit 2 - ctd

Time	Pos	Spp	Act	Notes	PSR
22:39	B1-2	NOC	Call	heard not seen	

Visit 3

Time	Pos	Spp	Act	Notes	PSR
21:15	B1-2	PIPSP	Call	Derived from commuting observations	
21:15	B1-2	PIPSP	Comm	Pass west to east through the rear garden from the direction of the shed in the western corner, across neighbouring driveway and garden, flying in an easterly direction.	
21:26	B1-2	PIPSP	Call	Derived from commuting observations	
21:26	B1-2	SPIP	Comm	Pass west to east through the rear garden from the direction of the shed in the western corner, across neighbouring driveway and garden, flying in an easterly direction.	
21:32	B1-2	PIPSP	Call	distant, heard not seen	
21:34	B1-2	PIPSP	Call	Derived from commuting observations	
21:34	B1-2	SPIP	Comm	Flight line 1a: foraging from east to west, from rear garden of northerly neighbouring garden, over driveway and into B1's rear garden.	
21:37	B1-2	SPIP	Call	Derived from foraging observations	
21:37	B1-2	SPIP	Fora	Flight line 3: foraging from northwest to southeast down neighbouring driveway.	
21:40	B1-2	PIPSP	Call	heard not seen, foraging	
21:44	B1-1	SPIP	Call		
21:46	B1-2	SPIP	Call	heard not seen, social calls	
21:49	B1-2	CPIP	Call	Derived from foraging observations	
21:49	B1-2	CPIP	Fora	Flight line 3: foraging from northwest to southeast down neighbouring driveway.	

Visit 3 - ctd

Time	Pos	Spp	Act	Notes	PSR
21:50	B1-1	SPIP	Call		
21:53	B1-2	NOC	Call	heard not seen, foraging	
22:02	B1-1	SPIP	Call		
22:04	B1-2	SPIP	Call	heard not seen, pass	
22:05	B1-1	SPIP	Call	Derived from commuting observations	
22:05	B1-2	PIPSP	Call	heard not seen, social calls	
22:05	B1-1	SPIP	Comm	South from neighbouring house,into garden od b1	
22:08	B1-1	SPIP	Call	Faint	
22:09	B1-1	SPIP	Call	Faint	
22:09	B1-2	PIPSP	Call	Derived from commuting observations	
22:09	B1-2	PIPSP	Comm	Flight line 4: silent, passing southwest to northeast from B1's rear garden to northerly neighbouring garden's eucalyptus tree.	
22:12	B1-1	CPIP	Call		
22:13	B1-1	CPIP	Call	Faint	
22:15	B1-2	SPIP	Call	heard not seen, foraging	
22:24	B1-2	SPIP	Call	heard not seen, brief pass	
22:34	B1-2	CPIP	Call	heard not seen, pass	

Appendix 6: 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 Senior Ecologist Harley Stone BSc (Hons), (Natural England Bat License No. 2025-85748-CL17-BAT) at BCT Level 2 competence. On-site survey work was led by Kat Fasken-Wall, BA (Hons) at BCT Level 2 competence, supported by 1 additional Bat Surveyor(s) and/or Assistant(s). 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 3 (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 5 (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 7: 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 Senior Ecologist Harley Stone BSc (Hons), (Natural England Bat License No. 2025-85748-CL17-BAT) at BCT Level 2 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 3 (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 site complexity 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.