Bat Survey Report

Date: 10.07.19

Site: Hall Road, Bramley

Client: Bramley Parish Council

Version: 001

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DOCUMENT HISTORY AND STATUS

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001	10.07.19	N/A	Issued to client.

Life Span of Survey Data and Report	
Report	This report remains valid for 12 months from date of issue. The report, conclusions and recommendations are valid for current development plans only. Should these change the report should be reviewed and, if necessary, further survey work and desk study review undertaken.
Survey Data	Survey data are valid for 12 months from the date the survey was undertaken.

The information which we have prepared and provided is true and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct.

Contents

1. Summary

Site Details
• The Stone Barn, Hall Road, Bramley, Surrey, GU5 0AX. • OS grid reference: TQ 009 449.
Scope of Works
• aLyne Ecology Ltd was commissioned to undertake dusk emergence and dawn re-entry surveys for bats of the Barn, as recommended in Acorn Ecology's Preliminary Bat Survey Report, December 2018.
Development Proposals
• Conversion into office space, over two floors. The upper floor will include the existing roof space. • Replacement of some roof tiles and weatherboarding. • Installation of roof lights in the upper floor. • Replacement of all windows and doors. • Wheelchair ramp and electric car charging point.
Key Ecological Constraints and Opportunities
• All British bat species and their roosts are fully protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017. • During the preliminary bat survey carried out by Acorn Ecology in December 2018, the Barn was found to contain approximately 25 bat droppings and was, therefore, assessed as a confirmed roost for summer roosting bats. DNA analysis of a sample of bat droppings collected from the Barn, identified the droppings to belong to brown long-eared bats. • During the dusk emergence survey carried out on 30th April 2019, bats were not seen to emerge from the Barn. Figure 1 provides the results of the survey. • During the dusk emergence survey carried out on 29th May 2019, bats were not seen to emerge from the Barn. Figure 2 provides the results of the survey • During the dawn re-entry survey carried out on 10th July 2019, bats were not seen to enter the Barn. • **Based on the surveys undertaken, the Barn is known to support a summer roost of local importance for brown long-eared bats.**

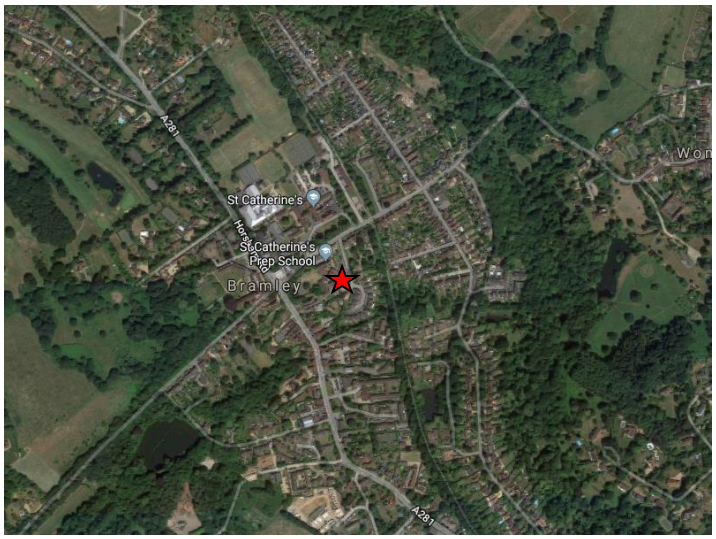
Further Survey Requirements
• **Based on the surveys undertaken, it is concluded that the Barn supports summer roosting brown long-eared bats**. A European Protected Species Licence (EPSL) or Bat Low Impact Class Licence (BLICL), in association with a mitigation and enhancement strategy (Method Statement) will be required, so that works to the Barn can be carried out legally.

2. Introduction

2.1 Site Description

The Stone Barn is located in Hall Road, Bramley, Surrey, GU5 0AX (OS grid reference: TQ 009 449) and is approximately 450 m^2 (area of ground floor).

The Stone Barn is situated in the centre of the village of Bramley and is surrounded by other buildings, gardens. There is a stream approximately 50 m to the south, a woodland approximately 350 m to the east and a golf course approximately 300 m to the west. An aerial plan showing the location of the Stone Barn is provided below.



Site Location (© Google Earth Pro, accessed 8th July 2019).

Table 1 provides details of the Barn, including the category it was assessed as during the preliminary bat survey (Acorn Ecology, Preliminary Bat Survey Report, December 2018).

Table 1. Description and Categorisation of Barn

Reference Number	Description	Categorisation
Barn	The Stone Barn is a two-storey building consisting of a stone base, with decorative red brick accents. There are four timber framed windows, which are boarded up. On the north-western elevation there is a boarded timber door and on the north-eastern elevation there are modern metal double doors. The north-eastern and south-western elevations have timber weatherboarding. The roof is a pitched construction, with a half-hipped section on the gable ends. The roof consists of clay roof tiles nailed onto timber batons and is open at the eaves. On the north-western elevation there is a modern extension, which comprises a red brick base, with timber frames and corrugated metal walls and roof. The roof is a cross-hipped construction, comprising corrugated metal and ornate wooden bargeboards on the gable end. On the south-western elevation there is a timber lean-to, with a sloped corrugated metal roof and large timber double doors. As these	Confirmed roost

Reference Number	Description	Categorisation
	extensions are not part of the proposals, they are not assessed further in this report. Internally, the Stone Barn is spilt over two floors. The lower floor is used for storage and consists of stone walls and floor, with boarded windows. The upper floor, or roof void consists of a partly boarded floor, old timber joists and cross beams and a small timber doorway. Half of the upper floor is enclosed by timber-clad walls. Remnants of hay were visible, suggesting the barn was once used as a coach house and hay barn. The roof consists of original timber rafters and cross-beams, lined with recently installed bitumen felt. The gable ends comprise timber weatherboarding, where light was visible from the inside at several locations.	

2.2 Proposed Development

The development proposals are for the conversion of the barn into office space, over two floors. The proposals will involve replacing the existing roof tiles, weatherboarding and the installation of roof lights. Windows and doors will be replaced, and wheelchair access and an electric car charging point will also be added.

2.3 Brief and Objectives

The purpose of the dusk emergence and dawn re-entry surveys of the Barn was to:

- Confirm whether the Barn support roosting bats.
- Confirm the species of bats using the Barn, if present.
- Assess the level of bat activity around the site.

3. Relevant Legislation and Planning Policy

All UK bat species and their roosts are fully protected under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). All bats are also included in Schedule 2 of the Conservation of Habitats and Species Regulations 2017, which defines "European protected species of animals" and are afforded further protection through the Countryside and Rights of Way (CRoW) Act, 2000.

The combined legislation makes it illegal to:

- Intentionally kill, injure or capture bats.
- Deliberately disturb bats (whether in a roost or not).
- Damage, destroy or obstruct access to bat roosts.
- Possess or transport a bat or any part of a bat, unless acquired legally.
- Sell, barter or exchange bats, or parts of bats.

As a signatory to the Bonn Convention (Agreement of Bats in Europe), the UK is also required to protect their habitats, requiring the identification and protection from damage or disturbance of important feeding areas.

In this interpretation, a bat roost is "*any structure or place which any bat uses for shelter or protection*". Because bats tend to reuse the same roosts, legal opinion is that the protection of bat roosts are considered to apply regardless of whether bats are present or not. There is currently no guidance on when a roost ceases to be protected if it is not used by bats.

If planned works would constitute an offence, they may only be carried out under licence from Natural England. Works or mitigation activities involving interference with bats or bat shelters must be carried out by a licensed bat worker (with a Natural England Bat Licence).

Furthermore, the Natural Environment and Rural Communities Act (NERC Act) 2006, requires due consideration be given to biodiversity and its potential enhancement when considering proposed developments. Several bat species are listed as species of principal importance.

The National Planning Policy Framework, 2018 (NPPF) sets out government policy on biodiversity in planning decisions. Under the NPPF, the presence of a protected species is a material consideration when a planning authority is considering a development proposal.

4. Methods

4.1 Dusk Emergence and Dawn Re-entry Surveys

This report has been produced with reference to current survey guidelines for bats (Collins, 2016), although adapted to be appropriate for the conditions on site. Reference was also made to BS42020:2013: Biodiversity – Code of Practice for Planning and Development.

Dusk emergence surveys were carried out of the Barn on 30th April 2019 and 29th May 2019 and a dawn re-entry survey was carried out on 10th July, to provide additional information about how bat species use the Barn, taking into account guidance produced by the Bat Conservation Trust (Collins, 2016).

Two surveyors were used for the surveys, both of which were equipped with Batbox duet/Elekon Bat Scanner and Anabat SD2/SD1/Anabat Express, Elekon Bat Logger A+/M bat detectors. Infra-red cameras were also used, which included Sony FDR-AX700 and Sony HDRCX11E cameras and IR Infrared 140 LED illuminator lights. Flight paths of foraging bats were mapped onto a plan of the site (see Figures 1 to 3).

The dusk surveys commenced 15 minutes before sunset and continued for 90 minutes after sunset. The dawn survey commenced 90 minutes before sunrise and continued for 15 minutes after sunrise. The surveys were undertaken when the weather was considered suitable for bat activity.

Activity surveys using bat detectors are techniques used for locating roosts and gauging general bat activity in the area, and in this instance, to determine whether the building supports bat roosts. The technique is based on the following principles:

- The closer a bat is observed to sunrise or sunset, then the closer the roost (species dependent) is likely to be in relation to the surveyor's location.
- Bats fly away from their roost around sunset and return to their roost around sunrise. During the dusk emergence survey, the building in question will be observed for emerging bats. During the dawn re-entry survey, the building in question will be observed for bats entering the building.

Bat echolocation calls were analysed using Analook software and bat species identified by comparison of sonograms with a known reference of echolocation call parameters and library of echolocation calls. Echolocation calls were assigned to species level, where possible. Where this was not deemed possible, identification to genus level was made. Details of the surveys are provided in Table 2.

Table 2. Dusk Emergence and Dawn Re-entry Survey Details.

	Dusk Emergence Survey Visit 1	Dusk Emergence Survey Visit 2	Dawn Re-entry Survey Visit 2
Date:	30th April 2019	29th May 2019	14th June 2019
Surveyors:	NG, JB, MB	DB, NG, SL	SL, JB
Weather conditions:	14°C, dry, 5% cloud cover, wind force 0-1	16°C, dry, 100% cloud cover, wind force 1	18°C, dry, 100% cloud cover, wind force 0
Sunset/Sunrise:	20:22	21:04	04:46
Start time:	20:07	20:49	03:16
Finish time	21:52	22:34	04:51

Surveyor codes: DB – Daniel Banks BSc (Hons) (volunteer), JB – Josh Brown BSc (Hons), MB – Matthew Blee BSc (Hons) (volunteer), NG – Nick Gray BSc (Hons), SL – Sarah Lyne CEnv BSc (Hons) MCIEEM.

4.2 Evaluation

Table 3 details how population size for each species rarity group has been categorised. Numbers have been assigned to each group (individual bats, small number of bats and large number of bats, taken from Valuing Bats in Ecological Impact Assessment, CIEEM, 2010), broadly based on numbers of roosting bats (common, rarer and rarest) identified during dusk emergence and dawn re-entry surveys in the London and south east area, over the previous five years by aLyne Ecology and Acorn Ecology.

The number of roosting bats identified during dusk emergence and dawn re-entry surveys, is then used to determine category of population size, to be evaluated against roost type to give a value with a geographic frame of reference (see Section 6).

Table 3. The categorisation of population size for each species rarity

		Categorisation of Population Size		
		Individual Bats	Small Number of Bats	Large Number of Bats
Species Rarity within Range	Common	1-2	3-20	>20
	Rarer	1-2	3-10	>10
	Rarest	1-2	3-5	>5

4.3 DNA Analysis

DNA analysis was performed on a sample of bat droppings from the Barn, for which the species was not known. A sample containing approximately 10 droppings was sent to Professor Robin Allaby of EcoWarwicker, at The University of Warwick. Sample reference code 13652.

4.4 Survey Limitations

There were no limitations considered to negatively influence the outcome of the bat surveys in relation to the following:

- Personal competence, i.e. qualifications, training, skills, understanding, experience.
- Resources (equipment and personnel).
- Time spent surveying.
- Data (e.g. arising from incomplete or inappropriate surveys).
- Timing or seasonal constraints and suboptimal survey periods.

Bat surveys undertaken using bat detectors are inherently biased as bats with louder calls (such as the *Nyctalus* species) will be recorded at a greater distance (and therefore more frequently) than species which use quiet calls such as *Plecotus* sp.

Long-eared bat (*Plecotus* spp.) is a genus that generally only emerges in full darkness and which has a very quiet echolocation call, generally not detectable in the open if more than 3-5 m from the bat detector. As a result, long-eared bats are difficult to detect during activity surveys and it is likely this genus is under-recorded during such surveys.

Species identification by sonogram is limited (to a certain extent) by similarities in call structure. In addition, all bats can modulate their calls according to the habitats they are navigating, their behaviour and the information they require at the time. This imposes limitations on reliable analysis particularly between species in the genera *Plecotus*, *Myotis* and *Nyctalus*.

The above survey limitations are unavoidable, and it is considered that they have not affected the robustness of the survey results for the purposes of this study. Therefore, it is considered that there were no limitations to the survey works.

5. Results

5.1 Dusk Emergence and Dawn Re-entry Surveys

During the dusk emergence survey carried out on 30th April 2019, no bats were recorded to emerge from the Barn. Seven bat passes were recorded in total. Figure 1 provides the results of the dusk emergence survey carried out on the 30th April 2019.

During the dusk emergence survey carried out on 29th May 2019, no bats were recorded to emerge from the Barn. Eleven bat passes were recorded in total. Figure 2 provides the results of the dusk emergence survey on the 29th May 2019.

During the dawn re-entry survey carried out on 10th July 2019, no bats were recorded to re-enter the Barn. Bats were not seen during the survey.

Tables 4 and 5 provide further details on the results of the surveys. A bat pass is defined as a recording of a bat foraging/commuting during the survey. Bat passes are an indication of bat activity, not the number of bats. The time provided in brackets is the time the bat species was first recorded during the survey. Figures 1 and 2 provide the results of the bat surveys, including an indication of bat activity recorded during the surveys. Bat passes which were heard but not seen are not shown on

Figures 1 and 2. As bats were not seen during the dawn re-entry survey on 10th July 2019, a figure has not been provided for this survey.

Table 4. Results of Dusk Emergence Survey, 30th April 2019 (Sunset: 20:22).

Species	Number of Bat Emergences (time of emergence)	Number of Bat Passes (time of first bat)
Common pipistrelle (*Pipistrellus pipistrellus*)	0	2 (2 heard not seen) (20:35)
Soprano pipistrelle (*Pipstrellus pygmaeus*)	0	1 (1 heard not seen) (21:22)
Brown long-eared bat (*Plecotus auritus*)	0	3 (3 heard not seen) (21:14)
Serotine (*Eptesicus serotinus*)	0	1 (21:22)
Total	**0**	**7 (6 heard not seen)**

Table 5. Results of Dusk Emergence Survey, 29th May 2019 (Sunset: 21:04).

Species	Number of Bat Emergences (time of emergence)	Number of Bat Passes (time of first bat)
Common pipistrelle	0	3 (21:44) (3 heard not seen)
Noctule (*Nyctalus noctula)*	0	8 (21:36) (7 heard not seen)
Total	**0**	**11 (10 heard not seen)**

Table 6. Results of Dawn Re-entry Survey, 10th July 2019 (Sunrise: 04:46).

Species	Number of Bat Entries (time of entry)	Number of Bat Passes (time of first bat)
Common pipistrelle	0	1 (heard not seen) 03.36
Total	**0**	**1 (heard not seen)**

5.2 DNA Analysis

The results of the DNA analysis confirmed that the sample of bat droppings collected from the Barn belong to brown long-eared bats (report reference: 13652, confirmed maximum likelihood, maximum parsimony, bootstrap 100%, 23rd April 2019). A copy of the report can be provided on request.

6. Evaluation

During the dusk emergence and dawn re-entry surveys, bats were not recorded to emerge or enter the Barn. **However, the Barn is a known roost for brown long-eared bats, owing to the presence of a small quantity (25) of droppings found in both the lower and upper levels of the Barn. As only a small quantity of droppings was found, it is likely that the Barn supports small numbers of brown long-eared bats.**

Table 6 details the categorisation of the value of the bat roost at the Barn, Bramley (taken from Valuing Bats in Ecological Impact Assessment, CIEEM, 2010), which provides a geographical framework for valuing bat roosts, based on the species and roost type (see Appendix 1).

Table 7. Valuation of Bat Roost

Species	Rarity within Region*	Roost Type	Geographic Frame of Reference
Brown long-eared	Common	Small numbers	Local

*Common species: common pipistrelle, soprano pipistrelle, brown long-eared; Rarer: Daubenton's, Natterer's, whiskered, Brandt's, noctule, serotine, Leisler's, lesser horseshoe, Nathusius' pipistrelle' Rarest: greater horseshoe, Bechstein's, Alcathoe, grey long-eared, barbastelle and greater mouse-eared.

Without mitigation, the works will result in the permanent loss of a known bat roost of local importance for brown long-eared bats. Recommendations for mitigation are provided in Section 7.

7. Recommendations

A European Protected Species Licence (EPSL) or Bat Low Impact Class Licence (BLICL) will be required prior to demolition. The project will need full planning permission.

The EPSL/BLICL application would be accompanied by a Method Statement, which would detail mitigation measures for bats, as outlined below:

- A pre-works inspection of the Barn should be undertaken by a licensed bat ecologist.
- Works should ideally take place when bats are least vulnerable to disturbance, which is April and May and September and October.
- Construction workers should be provided with a working method statement and briefing by an ecologist prior to works commencing, to ensure that works are carried out sensitively.
- Hand removal of roof materials and other features known to be used by roosting bats should be undertaken under a watching brief by a licensed bat ecologist.

- In advance of the commencement of the works, one 2FN Schwegler Bat Box for brown long-eared bats, should be erected on an adjacent tree/building, to act as a temporary bat roost, whilst works are being undertaken.
- If a roosting bat is discovered, the licensed bat ecologist will carefully move the bat to one of the bat boxes.
- Access points for bats should be replaced on a like-for-like basis, incorporated into the final design. The access points can be created by cutting 30 x 100 mm slots in the roofing felt, so that bats can access the underside of the ridge tiles.
- If possible, part of the upper level should be retained as a dedicated bat loft (panel-style roost or eaves roost).
- **Modern breathable roofing membranes should not be used**.
- External lighting should be low UV and on a short timer and not located within 1 m of any existing and new roost entrances, access points and known bat flight paths.

8. References

Collins, J. (2016). *Bat Surveys for Professional Ecologists. Good Practice Guidelines (3rd edition).* Bat Conservation Trust, London.

HM Government (2018) *National Planning Policy Framework*. Department for Communities and Local Government. HMSO.

HM Government (2005) *ODPM Circular 06/05 Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System.* HMSO.

HM Government (1981) *Wildlife and Countryside Act, as amended.* HMSO.

HM Government (2017) *Conservation of Habitats and Species Regulations*. HMSO.

Mitchell-Jones, A. J. (2004). *Bat Mitigation Guidelines*. English Nature (now Natural England), Peterborough.

Wray, S., Wells, D., Long, E. and Mitchell-Jones, T. (2010) *Valuing Bats in Ecological Impact Assessment*, CIEEM In Practice.

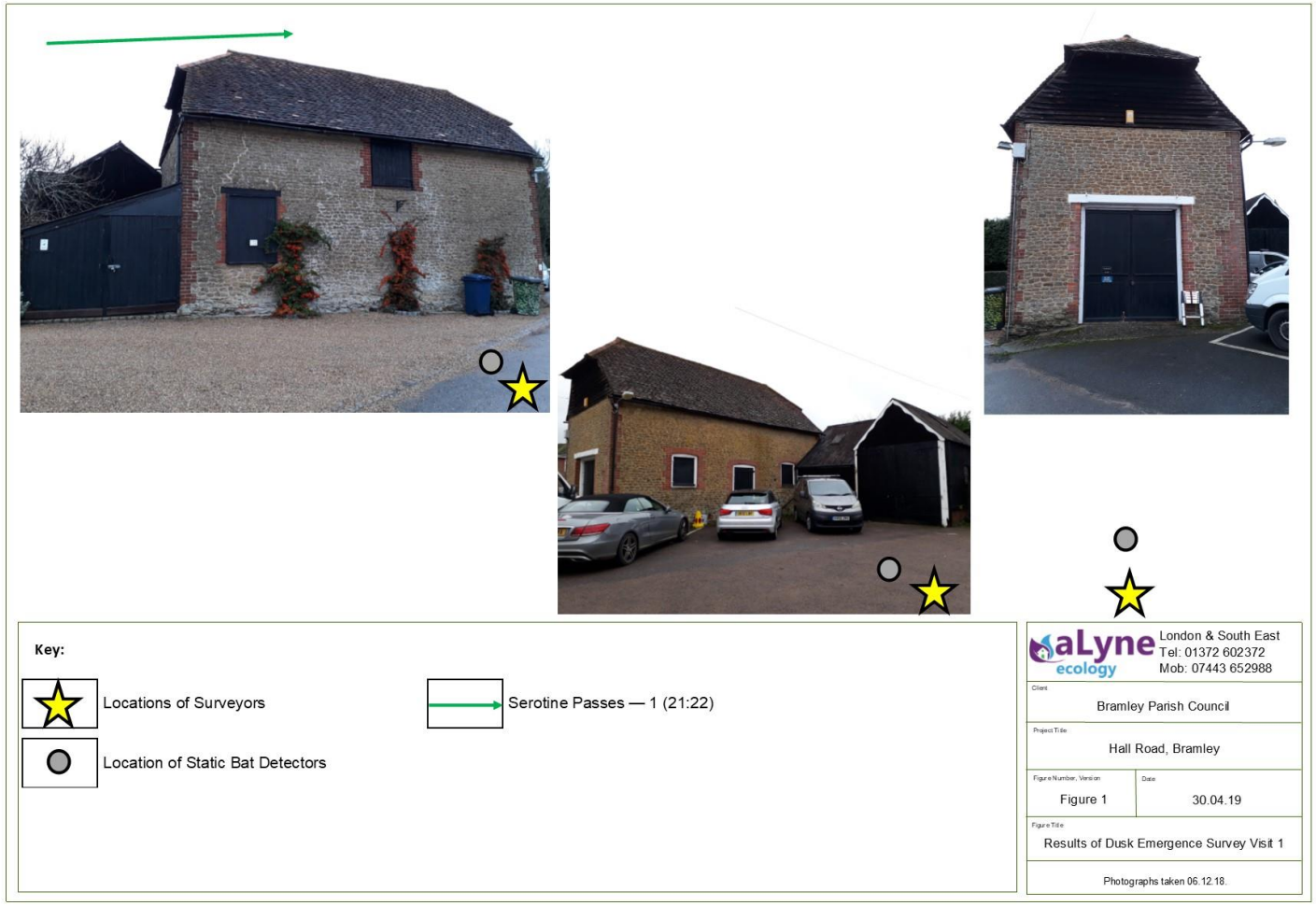
9. Appendix 1 – Valuing Bat Roosts

The table below provides geographic valuations for different roost types, for bats in each rarity category, as used in the evaluation section (see Section 6).

The table is taken from Valuing Bats in Ecological Impact Assessment, CIEEM, 2010.

Geographic Frame of Reference	Roost Types
District, Local or Parish	Feeding perches (common species) Individual bats (common species) Small numbers of non-breeding bats (common species) Mating sites (common species)
County	Maternity sites (common species) Small numbers of hibernating bats (common and rarer species) Feeding perches (rarer and rarest species) Individual bats (rarer and rarest species) Small numbers of non-breeding bats (rarer and rarest species)
Regional	Mating sites (rarer and rarest species), including well-used swarming sites Maternity sites (rarer species) Hibernation sites (rarest species) Significant hibernation sites for rarer and rarest species or all species assemblages
National/UK	Maternity sites (rarest species) Sites meeting Sites of Special Scientific Interest (SSSI) guidelines
International	Special Areas of Conservation (SACs)

10. Figures


Key:
Locations of Surveyors
Location of Static Bat Detectors
Serotine Passes — 1 (21:22)
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Project Title
Hall Road, Bramley
Figure Number, Version
Figure 1
Date
30.04.19
Figure Title
Results of Dusk Emergence Survey Visit 1
Photographs taken 06.12.18.


Key:
Locations of Surveyors
Location of Static Bat Detectors
Noctule Passes — 1 (21:38)
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Bramley Parish Council
Project Title
Hall Road, Bramley
Figure Number, Version
Figure 2
Date
29.05.19
Figure Title
Results of Dusk Emergence Survey Visit 2
Photographs taken 06.12.18