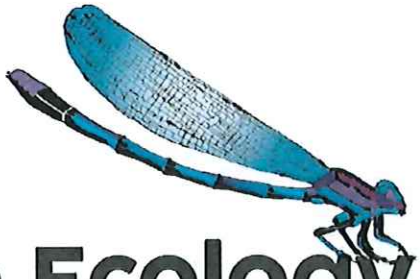

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Bat Emergence Survey Report

No. 2 Vine Cottages, Northchapel

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Report Summary

1. The Ecology Co-op undertook a bat scoping assessment of one semi-detached residential dwelling at No. 2 Vine Cottages, Northchapel on the 22nd August 2022. The building was assessed as having 'high' potential to support roosting bats, based on the presence of lifted roof tiles, lifted weatherboarding, gaps at the eaves and a small number of bat droppings located beneath weatherboarding on the southern elevation of the building.

2. Based on the above assessment and in line with Bat Conservation Trust Guidelines, three bat emergence survey visits were carried out between 10th May and 21st June 2023 to confirm the presence/likely absence of roosting bats and evaluate the conservation importance of the site for bats. The purpose of this survey work was to provide advice to inform a planning application to construct an extension and new porch on the south-eastern face of the property.

3. No bats were seen to emerge from the property during the emergence surveys. Low bat activity was recorded for common pipistrelle *Pipistrellus pipistrellus* and noctule *Nyctalus noctula,* which were heard and/or seen commuting and foraging around the dwelling and garden during each of the surveys.

4. As no bats have been identified emerging from or entering roosts during the survey, it is considered highly unlikely that the features identified in the bat scoping survey are regularly used by roosting bats. A European Protected Species (EPS) Mitigation Licence is not required for the proposed works to proceed.

5. Given the highly transitory nature of many bat species, it is not possible to completely dismiss this possibility of bat exploiting gaps, as the potentially suitable features may be used on an opportunistic and infrequent basis. As a precautionary measure, prior to demolition, a repeat internal and external inspection of the property for presence of bats should be carried out by a qualified ecologist. In addition, the removal all existing roof tiles and weatherboarding should be undertaken sensitively by hand only and under the supervision of a suitably qualified ecologist. Should bats be found at any time during the works, works should cease immediately, and an ecologist contacted for advice.

6. It is recommended that either two bat tiles or a bat box is installed upon the southern or eastern external faces of the building. These enhancements would provide an enhancement for bats, in accordance with the National Planning Policy Framework (NPPF).

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1 INTRODUCTION

1.1 Background

The owners of No. 2 Vine Cottages, Northchapel intend to submit a planning application for a proposed development that would see the construction of an extension and new porch on the south-eastern face of the property.

The full address for the site is No. 2 Vine Cottages, The Green, Northchapel, Petworth, West Sussex, GU28 9HU. The central National Grid Reference for this site is SU 95353 29586.

The Ecology Co-op undertook a bat scoping assessment of the existing buildings on 22nd August 2022, during which several features were identified that were suitable to support roosting bats[1].

Overall, the building was assessed as having 'high' potential to support roosting bats and in accordance with current best practice guidelines[2], a minimum of three emergence surveys were recommended to determine the presence of roosting bats and evaluate the conservation importance of the site for bats.

1.2 Purpose of the Report

In accordance with recommendations, bat emergence surveys were carried out by The Ecology Co-op between 10th May and 21st June 2023 led by Lynn Spencer, an Associate member of the Chartered Institute of Ecology and Environmental Management (ACIEEM) and licensed bat surveyor.

The purpose of this survey work was to determine the presence of roosting bats and where necessary prescribe further surveys and/or appropriate mitigation advice to inform the planning application for the proposed development at the site.

This survey and report were carried out at the request of the homeowners: Mr and Mrs Sochovsky.

2 LEGAL PROTECTION

Details of legislation and legal protection afforded to all species of British bats are given in Appendix 1.

The results of this survey will be used to determine the need for an appropriate mitigation strategy to ensure compliance with UK and EU wildlife legislation.

3 METHODOLOGY

Three emergence surveys were undertaken between 10th May 2023 and 21st June 2023, using the methodology set out in the best practice guidelines prepared by the Bat Conservation Trust.
The surveys focused upon the south-eastern elevations of the dwelling, using two surveyors and two infrared cameras positioned according to Figure 1. From these positions, surveyors could see all features potentially suitable for roosting bats that were identified during the initial bat scoping survey.

[1] The Ecology Co-op (2022) *Bat Scoping Report - No. 2 Vine Cottages, The Green, Northchapel, Petworth, West Sussex.*
[2] Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn).* Bat Conservation Trust, London.

The surveyors recorded any bat activity on or around the potential roosting entry/exit features identified during the scoping survey, using full spectrum handheld bat detectors to identify species through call frequencies. The bat calls were logged and recorded as sonograms for later confirmation of species where necessary.

Two Sony AX33 cameras were used throughout each of the three surveys and supported by a range of infrared lights, including camera-mounted torches.

Figure 1. An aerial image of the site, showing the positions of surveyors (red dots) and night-vision cameras (orange dots). The extent of the proposed development is show by the white square. Images produced courtesy of Google maps (map data ©2023 Google).

3.1 Limitations to Emergence Surveys

In accordance with best practice guidelines, each survey visit was undertaken during the peak period in bat activity and during good weather conditions. The results presented here are therefore considered to be an accurate representation of the general use of the property by roosting bats.

Bats can use roosting features intermittently throughout the year and may be present in larger or smaller numbers depending on their breeding cycle, weather conditions, and in response to disturbance. These surveys record the emergence of bats at the time of the survey visits and therefore only provide a snapshot of bat roosting activity at the site at that time. Bats may be present at other times and the results should therefore be viewed with caution.

4 RESULTS

4.1 Bat Emergence Surveys

4.1.1 Survey Conditions

The dates, times, weather conditions, temperatures and personnel for each survey visit are presented in Table 1 below:

Table 1: Details of surveys undertaken, timings weather conditions and personnel.

Date	Survey start time/ end time	Temp. (°C), weather conditions throughout survey	Surveyors
10/05/2023	Start time: 20:07 Sunset: 20:37 End time: 22:07	Max/min temp: 12–11. 10% cloud cover and light air (Beaufort Scale - BF1), dry.	Lynn Spencer Aidan Bird
31/05/2023	Start time: 20:34 Sunset: 21:04 End time: 22:34	Max/min temp: 14–12°C. 10% cloud cover and light breeze (BF2), dry.	Lynn Spencer Libby Morris
21/06/2023	Start time: 20:49 Sunset: 20:19 End time: 22:49	Max/min temp: 18–16°C. 20% cloud cover and light air (BF1), dry.	Lynn Spencer Kate Ellis

4.1.2 Bat Emergence Results

The following descriptions summarise bat activity and emergence from the building for each survey visit.

- 10th May 2023

  General bat activity was low. No bat emergences were seen. The first bat detected was a common pipistrelle *Pipistrellus pipistrellus* at 21:01. Common pipistrelles were intermittently seen and heard foraging and commuting around the property from that point onwards until the end of the survey. At 21:17 a noctule bat *Nyctalus noctula* was heard making several passes foraging in the field east of the house.

- 31st May 2023

  General bat activity was low. No bat emergences were seen. The first bat detected was a noctule bat at 21:33. The noctule bat made several passes in the field south-west of the house. At 21:41, a common pipistrelle was heard and seen foraging around the property – common pipistrelle continued to make intermittent passes around the property for the rest of the survey.

- 21st June 2023

  General bat activity was low. No bat emergences were seen. The first bat detected was a common pipistrelle at 21:55. Common pipistrelles were intermittently seen and heard foraging and commuting around the property from that point onwards until the end of the survey.

5 IMPACT ASSESSMENT AND MITIGATION RECOMMENDATIONS

5.1 Precautionary Approach

As no bats have been identified emerging from or entering roosts on any of the surveys, it is considered highly unlikely that the features identified in the bat scoping survey are regularly used by roosting bats. A European Protected Species (EPS) Mitigation Licence is not required for the proposed works to proceed.

However, the highly transitory nature of many bat species means that it is not possible to completely dismiss this possibility as the potentially suitable features may be used infrequently. As a precautionary measure, the following mitigation should be put in place:

- in advance of demolition/building works, the feature should be inspected by a qualified ecologist for the presence of bats. In the unlikely event that bats or evidence of bats are found at this stage, the potential for impacts and need for EPS licencing will be reassessed; and
- the identified potential roost features shall be subject to hand stripping prior to demolition under the supervision of a suitably qualified ecologist.

As common and soprano pipistrelles and noctule bats were recorded commuting and foraging at the site, the proposed development must incorporate a sensitive lighting scheme in line with Bat Conservation Trust guidelines (see Appendix 2).

5.2 Biodiversity Enhancement Opportunities

To provide a net gain for biodiversity within the proposed development, as outlined by the National Planning Policy Framework (NPPF), it is proposed that two purpose designed bat tiles should be incorporated into the southern roof pitch of the dwelling. Alternatively, a bat box, such as a Schwegler 2F or 2FN, could be installed upon the eastern external face of the building, close to the eaves.. Examples of bespoke bat roosting features for new buildings are provided in Appendix 2.

5.3 Conclusions

As no bats have been identified emerging from or entering roosts during the survey, it is considered highly unlikely that the features identified in the bat scoping survey are regularly used by roosting bats. However, prior to demolition and as a precautionary measure, the building should be inspected by a qualified ecologist for the presence of bats and any field tiles with suitable crevices shall be subject to supervised hand stripping.

Should you need any further advice on the information provided above, please do not hesitate to contact The Ecology Co-op.

APPENDIX 1 – LEGISLATION AND POLICY

All species of British bat are fully protected under the Wildlife and Countryside Act 1981 as amended through inclusion in Schedule V. All bat species in the UK are also included in Schedule II of the Habitats Regulations 2010 which transpose Annex II of the Council Directive 92/43/EEC 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora ("EC Habitats Directive") which defines European protected species of animals.

Bat species are afforded further protection by the Natural Environment and Rural Communities Act 2006.

Under the above legislation it is an offence to:

- kill, injure or take an individual;
- possess any part of an individual either alive or dead;
- intentionally or recklessly damage, destroy or obstruct access to any place or structure used by these species for shelter, rest, protection or breeding;
- intentionally or recklessly disturb these species whilst using any place of shelter or protection; or
- deliberate disturbance in such a way as to be likely to impair their ability to:
    - survive, to breed or reproduce, or to rear or nurture their young; or
    - in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
    - to affect significantly the local distribution or abundance of the species to which they belong;
- keep (possess), transport, sell or exchange, or offer for sale or exchange, any live or dead bat, or any part of, or anything derived from a bat.

It is also an offence to set and use articles capable of catching, injuring or killing bats (for example a trap or poison), or knowingly cause or permit such an action. In the case all species of British bat there is also protection under Schedule 6 of The Wildlife and Countryside Act 1981 (as amended) relating specifically to trapping and direct pursuit of these species.

The Habitats Directive and Habitats Regulations provide for the derogation from these prohibitions for specific reasons provided certain conditions are met. An EPS licensing regime allows operations that would otherwise be unlawful acts to be carried out lawfully. In England, Natural England is the licensing Authority and, in order to grant a license, ensures that three statutory conditions (sometimes referred to as the 'three derogation tests') are met:

- a licence can be granted for the purposes of "preserving public health or safety or for other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment" (Regulation 53 (2) (e);
- a licence can only be granted if "there are no satisfactory alternatives" to the proposed action;
- a licence shall not be granted unless the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

A bat roost is defined as "any structure or place, which any wild bat uses for shelter or protection." Bats tend to re-use the same roosts; therefore, legal opinion is guided by recent case law precedents, that a roost is protected whether or not the bats are present at the time. This can include all summer roosts, used for breeding, resting or sheltering and all winter roosts used for hibernating.

APPENDIX 2 – EXAMPLES OF BESPOKE BAT ROOSTING FEATURES FOR NEW BUILDINGS

Figure 1. Left to right, the 2F, 2FN and the 1FS bat boxes produced by Schwegler. These and other brands are available at many on-line wildlife stores. These are constructed of 'woodcrete' (a mixture of cement and woodchip) and are designed to be durable and replicate the stable thermal properties of trees and buildings. They may be attached to trees or buildings.

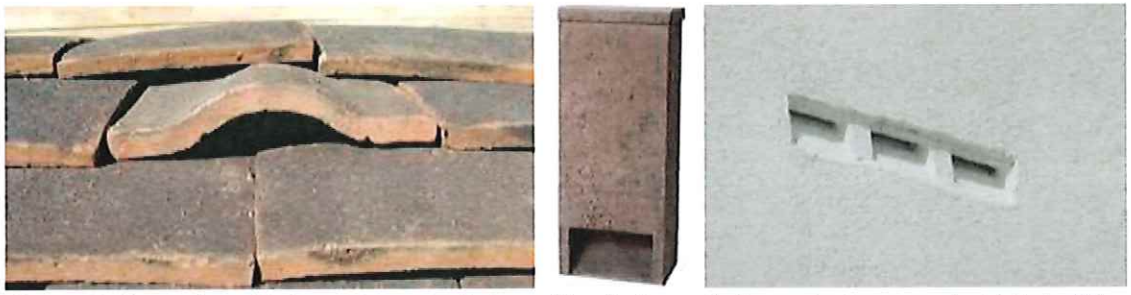

Figure 2. Examples of integral bespoke bat roosting features that may be incorporated into buildings during construction/renovation. From left to right: an example of bat access tile into loft space; the 2FR bat tube; and an example of 2FR bat tubes installed into a house wall in a series of three. Other brands and designs are available.

APPENDIX 3 – REDUCING IMPACTS OF ARTIFICIAL LIGHT

Bright external lighting can have a detrimental impact upon foraging and commuting bat flight paths, but more importantly can also cause bats to remain in their roosts for longer. Artificial lighting can also cause significant impacts to other nocturnal species, most notably moths and other nocturnal insects. It can also result in disruption of the circadian rhythms of birds, reducing their fitness.

Guidelines issued by the Bat Conservation Trust[3] should be referred to when designing the lighting scheme. Note that lighting designs in very sensitive areas should be created with consultation from an ecologist and using up-to-date bat activity data where possible. The guidance contains techniques that can be used on all sites, whether a small domestic project or larger mixed-use, commercial or infrastructure development. This includes the following measures:

Avoid lighting key habitats and features altogether

There is no legal duty requiring any place to be lit. British Standards and other policy documents allow for deviation from their own guidance where there are significant ecological/environmental reasons for doing so. It is acknowledged that in certain situations lighting is critical in maintaining safety, such as some industrial sites with 24-hour operation; however, in the public realm, while lighting can increase the perception of safety and security, measurable benefits can be subjective. Consequently, lighting design should be flexible and be able to fully consider the presence of protected species.

Apply mitigation methods to reduce lighting to agreed limits in other sensitive locations – lighting design considerations

Where bat habitats and features are considered to be of lower importance or sensitivity to illumination, the need to provide lighting may outweigh the needs of bats. Consequently, a balance between a reduced lighting level appropriate to the ecological importance of each feature and species, and the lighting objectives for that area will need to be achieved. The following are techniques which have been successfully used on projects and are often used in combination for best results:

- dark buffers, illuminance limits and zonation;
- sensitive site configuration, whereby the location, orientation and height of newly built structures and hard standing can have a considerable impact on light spill;
- consideration of the design of the light and fittings, whereby the spread of light is minimised ensuring that only the task area is lit. Flat cut-off lanterns or accessories should be used to shield or direct light to where it is required. Consideration should be given to the height of lighting columns. It should be noted that a lower mounting height is not always better. A lower mounting height can create more light-spill or require more columns. Column height should be carefully considered to balance task and mitigation measures. Consider no lighting solutions where possible such as white lining, good signage, and LED cats eyes. For example, light only high-risk stretches of roads, such as crossings and junctions, allowing headlights to provide any necessary illumination at other times;
- screening, whereby light spill can be successfully screened through soft landscaping and the installation of walls, fences and bunding;
- glazing treatments, whereby glazing should be restricted or redesigned wherever the ecologist and lighting professional determine there is a likely significant effect upon key bat habitat and features;

[3] Bat Conservation Trust and Institute for Lighting Professionals (2018) Guidance note 8. Bats and Artificial Lighting. https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/

- creation of alternative valuable bat habitat on site, whereby additional or alternative bat flightpaths, commuting habitat or foraging habitat could result in appropriate compensation for any such habitat being lost to the development;
- dimming and part-night lighting. Depending on the pattern of bat activity across the key features identified on site it may be appropriate for an element of on-site lighting to be controlled either diurnally, seasonally or according to human activity. A control management system can be used to dim (typically to 25% or less) or turn off groups of lights when not in use.

Demonstrate compliance with illuminance limits and buffers

- *Design and pre-planning phase*; it may be necessary to demonstrate that the proposed lighting will comply with any agreed light-limitation or screening measures set as a result of your ecologist's recommendations and evaluation. This is especially likely to be requested if planning permission is required.
- *Baseline and post-completion light monitoring surveys*; baseline, pre-development lighting surveys may be useful where existing on or off-site lighting is suspected to be acting on key habitats and features and so may prevent the agreed or modelled illuminance limits being achieved.
- *Post-construction/operational phase compliance-checking;* as a condition of planning, post-completion lighting surveys by a suitably qualified person should be undertaken and a report produced for the local planning authority to confirm compliance. Any form of non-compliance must be clearly reported, and remedial measures outlined. Ongoing monitoring may be necessary, especially for systems with automated lighting/dimming or physical screening solutions.

Lighting Fixture Specifications

The Bat Conservation Trust recommends the following specifications for lighting on developments to prevent disturbance:

- Lighting spectra: peak wavelength >550nm
- Colour temperature: <2700K (warm)
- Reduction in light intensity
- Minimal UV emitted
- Upward light ratio of 0% and good optical control

Further reading:

Buglife (2011) A review of the impact of artificial light on invertebrates.

Royal Commission on Environmental Pollution (2009) Artificial light in the environment. HMSO, London. Available at: https://www.gov.uk/government/publications/artificial-light-in-the-environment

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CPRE (2014) Shedding Light: A survey of local authority approaches to lighting in England. Available at: http://www.cpre.org.uk/resources/countryside/dark-skies/item/3608-shedding-light

Planning Practice Guidance guidance (2014) When is light pollution relevant to planning? Available at: https://www.gov.uk/guidance/light-pollution

Institution of Lighting Professionals (2021) Guidance Notes for the Reduction of Obtrusive Light GN01:2011. Available at: https://www.theilp.org.uk/resources/free-resources/

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