Preliminary Bat Roost & Emergence Survey Report

Client:	**Mr & Mrs O'Gorman**
Site:	**Eaves House, West Bradford, BB7 3JD**
Report Issue Date:	**23/01/2025**
Report Author:	**Carol Edmondson MSc MRSB**

Guidelines

This assessment has been designed to meet:

- Bat Conservation Trust Bat Surveys for Professional Ecologists —Good Practice Guidelines, 4th edition (Collins, 2023)
- British Standard 42020 (2013) 'Biodiversity – Code of Practice for Planning and Development'.
- The Bat Conservation Trust publication *Bat Surveys for Professional Ecologists – Good Practice Guidelines* (Collins, J. (Ed) 2016).
- National Planning Policy Framework 2023 (NPPF, Para 158, 159, and Para 180)
- CIEEM, CIRIA, IEMA *Biodiversity net gain. Good practice principles for development. A practical guide*. CIRIA C776a. London, 2019.

Summary

This report presents the results of a daylight preliminary bat roost assessment (PRA) undertaken on 30st June 2024, at Eaves House, West Bradford and the follow up dusk emergence surveys. The work has been commissioned to support a proposed planning application to convert the barns on site.

The scope of the survey has primarily considered roosting and hibernating bats, breeding birds and barn owls.

- **The daytime survey** identified that there was high potential roosting habitat for bats in the two larger buildings (B1 & B3 on the survey map), and therefore further surveys were required. The site was also suitable for use by barn owls, but no evidence was found on the site nor recorded during dusk surveys. Evidence of breeding birds was present in the buildings, predominantly swallows.
- **The Bat Emergence/re-entry Surveys** (BERS) were carried out on the 15th of July, 9th August and 6th September 2024 by two Class 2 licenced bat surveyors, both with 11+ years' experience, and two assistant surveyors, with night vision aids focussing on high potential areas of buildings. No bats were recorded emerging from the buildings, with common and widespread species recorded foraging around the buildings and adjacent trees. A potential maternity roost of common pipistrelle bats was recorded in the open shippen barn to the north of the survey buildings.
- On the basis of the survey work carried out, under guidance provided in respect of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, and considering the plans for the site, it is considered that a Protected Species Mitigation Licence (PSML) for bats will not be required prior to works being carried out.
- A mitigation strategy has been prepared and should be followed in order to ensure that the welfare of the local bat population is maintained during, and following, the works.

Recommendations

- **Bats: A precautionary method of working should be adopted. If bats are found during any stage of the development, work should stop immediately, and a suitably qualified ecologist should be contacted to seek further advice.**
- **Lighting design should be low level (e.g downward facing wall lights) and avoid shining at any wildlife enhancement features installed.**
- **Birds: An appropriately qualified ecologist should conduct a thorough inspection of the buildings immediately before the commencement of works if these occur during the breeding season (March – September inc.). All active nests will need to be retained until the young have fledged.**
- **Full details of mitigation & enhancement recommendations see 4.0**

Contents

1.0 Introduction and Context

1.1 Background

Ark Ecology were commissioned to carry out a preliminary bat roost survey and follow up emergence surveys at Eaves House, West Bradford BB7 3JD to support a planning application for the proposed conversion of a redundant barn into a residential dwelling and conversion of outbuilding no.2 into garages and part of outbuilding no.1 into a home office.

1.2 Site Context

The site is located at central National Grid Reference SD 73282 44695, consisting of a barn and 2 outbuildings adjacent to the main house at Eaves House Farm, between the villages of Waddington and West Bradford, in a predominantly rural setting.

1.3 Scope of the report

The survey was carried out to determine bat roost potential of the buildings, current usage by bats and other protected species of the site and to establish the status of the bat species using the site prior to development work being carried out.

A survey plan is presented in Appendix 1.

2.0 Methodology

2.1 Desk Study methodology

A review of the following information sources has also been undertaken to inform the assessment:

- Landscape structure using aerial images from Google Earth and OS maps
- Designated sites, habitat and granted EPSL records held on Magic.gov.uk.

2.2 Site Survey methodology

The assessment is informed by the Bat Conservation Trust publication *Bat Surveys for Professional Ecologists – Good Practice Guidelines* (Collins, J. (Ed) 2023).

All features that will be impacted by the project proposals were assessed for their bat roosting and/or commuting habitat. The surveyor systematically surveyed all features suitable and for signs of bat activity.

<u>For any surveyed buildings:</u>

A non-intrusive visual appraisal from the ground using binoculars, inspecting the external features of the building for potential access/egress points, and for signs of bat use. An internal inspection of the building was also made, including areas of derelict or abandoned buildings and the accessible roof spaces of all buildings, using an endoscope & torch. The surveyor paid particular attention to the floor and flat surfaces, window shutters and

frames, lintels above doors and windows, and carried out a detailed search of numerous features within the roof space taking into consideration:

- The availability of access to roosts for bats.
- The presence and suitability of cracks, crevices, tiles, soffits, hollows, ivy growth and other places as roosts.
- Signs of bat activity or presence, such as: bats themselves, droppings, bat grease marks, bat scratch marks, bat urine spatter and bat prey remains.

2.3 Dusk activity survey methodology

- Potential roost locations were identified during the initial survey and were all adequately covered during the emergence survey. There was either direct visual coverage, with appropriate overlap between surveyors, coverage by infrared video camera or areas with limited visual coverage were noted and surveyors were positioned such that any bats emerging from these areas could be distinguished from bats commuting into the site. The location of each surveyor during each survey is shown in Appendix 1.
- Bat commuting routes and activity in and around the site were observed and noted. The surveyors were either in visual and verbal contact or used 2-way radios to communicate bat activity over the site to each other. This reduced the potential for double counting or miss-recording bats which have flown into rather than emerged from the site or vice versa.
- Surveyors used Peersonic RPA3 (with full spectrum recording), Batbox duet bat detectors and Echo Meter Touch 2 pro detectors connected to an iPhone to record activity. Bat echolocation calls recorded during the surveys were analysed using Wildlife Acoustics sound analysis software Kaleidoscope V3.1.7.
- In line with current BCT interim guidance, Infrared night vision and thermal imaging cameras were also used to cover areas of high roost potential or areas of high activity. Cameras used were Nightfox Whisker IR x 2, 1 x unbranded night vision binocular, additional infrared lighting provided by 4 x Nightfox IR torches, generic infrared camcorder with added illumination by Nightfox IR torches, Thermal imaging night scope, 2 x FLIR thermal imaging cameras with footage recorded to data cards via tough pad.
- The resulting video was subsequently viewed **fully**, cross-checked with survey sheets and a summary of activity collated from each camera. The thermal imaging software uses a back tracking feature which makes exit points of any bats far easier to detect, and rule out false positives.
- These night vision aids improve the quality of data collected on each survey, providing a visual context where surveyors can no longer see features due to low light levels, or pick up non-echo locating bats early in the survey.
- The emergence surveys were spread across the bat activity period to capture the full roosting potential of the site.

- Static detectors were left for a period of 3–5 days following dusk emergence surveys, to pick up any echolocating bats within the buildings.

2.4 Breeding birds and other incidental observations

The surveyor also made note of any other ecological constraints observed during the survey, notably the likelihood of presence of breeding birds, and the suitability of the buildings for and presence of barn owls *Tyto alba*.

2.5 Suitability Assessment

To determine the survey effort required, all survey buildings on site were categorised according to the likelihood of bats being present, in line with best practice guidelines (Collins, J. (ed) 2023). The features that dictate the likelihood of roosting bats are summarised in Table 1 below. Roost suitability is classified as high, moderate, low and negligible and dictates any further surveys required before works can proceed.

***Table 1**: Features of a building that are correlated with use by bats*

Likelihood of bats being present	Feature of building and its context
Higher	Buildings/structures with features of particular significance for roosting bats e.g. mines, caves, tunnels, icehouses and cellars. Habitat on site and surrounding landscape of high quality for foraging bats e.g. broadleaved woodland, tree-lined watercourses and grazed parkland. Site is connected with the wider landscape by strong linear features that would be used by commuting bats e.g. river and or stream valleys and hedgerows. Site is proximate to known or likely roosts (based on historical data).
Lower	A small number of possible roost sites/features, used sporadically by more widespread species. Habitat suitable for foraging in close proximity, but isolated in the landscape. Or an isolated site not connected by prominent linear features. Few features suitable for roosting, minor foraging or commuting.

2.6 Limitations

These surveys follow best practice guidance to confirm presence of roosting bats and where present characterise the roost. However, this information is collected at finite dates and times, and provides an indication of the conditions on site at that time only. Due to the transient nature of bats, the use of the building, and the site as a whole by bats at all times cannot be established based on this information i.e. whilst these surveys are used to determine presence of bats, they can only prove *likely* absence of bats due to their transient nature.

- There were no specific limitations to the surveys.

3.0 RESULTS AND EVALUATION

3.1 Desk Study Results

A summary of the desk study results is provided below.

3.1.1 Landscape

The site is located in a rural landscape on the outskirts of West Bradford village. The site is connected to the local woodlands and surrounding countryside by the hedge lined lanes and mature trees, which will provide suitable foraging and commuting habitat for most species of bats expected in this landscape.

Figure 1: Aerial photo of site, showing landscape structure.

3.1.2 Mitigation Licences

A search of the magic database for granted European Protected Species Mitigation Licences (EPSMLs) within a 2km radius returned one licenced site which include damage to a resting site and destruction of a breeding site for both common pipistrelle *Pipistrellus pipistrellus,* soprano pipistrelle *P.pygmeus*. This is evidence of the presence of these species within the proximity of the site but does not exclude the presence of other bat species. These species of bat are known to roost in residential areas and buildings, foraging along hedgerows and under trees around urban areas and parks.

3.5 Field Survey Results

Personnel: The surveys were undertaken by Carol Edmondson (Natural England bat licence number: 2015-12195 CLS-CLS), an MSc qualified ecologist with 11 years' experience in specific bat surveying and Catherine Wood

(Natural England Bat Licence Number: 2015-11257-CLS-CLS) 13 years of bat survey experience, and two further assistants, Sam Fishwick (2nd season surveyor) & Andrew Kibble (1st season surveyor but experience of thermal imaging scopes & cameras).

There were three survey buildings on the site, numbered B1, B2 & B3 & illustrated in the map in Appendix 1. The environmental variables recorded at the time of the surveys are shown in Table 2.

3.5.1 Survey Timings and weather conditions

***Table 2**: Survey timings and environmental data*

Daytime survey: Date 30/06/2024	
Temperature	18°C
Cloud Cover	10%
Wind	5km/h
Rain	none

Emergence Survey date	***Survey Start and End Times Sunset/sunrise time***	***Weather Conditions Start***	***Weather Conditions END***
18/07/2024	21:10 – 23.10 Sunset: 21:28	Temp: 18°C Cloud Cover: 80% Wind: 0 Rain: None	Temp: 17°C Cloud Cover: 80% Wind: 1 BS Rain: None
09/08/2024	20:30 – 22.30 Sunset: 20:50	Temp: 16°C Cloud Cover: 30% Wind: 3 Rain: None	Temp: 18°C Cloud Cover: 40% Wind: 3 BS Rain: None
06/09/2024	19:15 – 21:16 Sunset: 19:44	Temp: 19°C Cloud Cover: 20% Wind: 3 Rain: None	Temp: 17°C Cloud Cover: 10% Wind: 3 BS Rain: None

3.5.2 *Feature descriptions and photos*

Building description -B1

The property is a traditional barn constructed of solid stone walls with a dual pitched slate roof covering, with some parts corrugated sheets, over timber purlin and rafter construction with kingpost trusses.

To the west and north elevations was a single storey wrap around extension with a single pitch roof of slate tiles, forming a cat-slide pitch and block-built walls.

B2 – A single storey, stone-built former dairy with a single pitched slate roof. Roofing materials were in a good state of repair, with no cracks or gaps, and no access to the interior space. Stonework & pointing were also in a good state of repair with no visible gaps or cracks suitable for bat roosts.

B3 – A single storey, single pitched blue slate roof, with the southern elevation of stone walls, and the north elevation being block-built with render.

Figure 2: Aerial view of the site, outlined in red.

Figure 3: south end of the west elevation, showing part corrugated roof covering and single storey extension.

Potential bat roosting features:

B1 & B3 had multiple gaps in the pointing between the stonework, however the majority of these were too wide for crevice dwelling bats. Those that appeared more suitable were inspected by endoscope.

There were open gaps into the buildings, either windows, doors or missing materials on all elevations, allowing entry for wildlife.

The roofing materials were in a poor state of repair in some areas, leaving gaps under slipped or missing slates, and missing ridge tiles giving access to the ridge, and suitable roosting gaps for crevice dwelling bats.

B2 – no bat roosting potential.

There was no evidence of bats found externally.

Figure 4: South facing roof pitch of B3, and front fascia of B2. Gaps can be seen in the roof materials at the ridge of B3.

Figure 5: B1 east elevation, main entrance.

To the rear (north elevation) of B3 there were gaps at the wall tops which could afford entry to the buildings by birds or bats.

Similarly at the apex of B1 on the north gable end.

Figure 6: B1 & B3: North elevations with openings marked by arrows.

Internally

All buildings were open to the roof materials, with only B1 having any lining materials.

The roof structure of B1 formed suitable roosting gaps for crevice dwelling bats in the joints, and behind purlins.

The beams & joists also formed suitable perching and feeding sites for both bats and barn owls.

The walls were well pointed with not many gaps.

No evidence of either was found during any of the surveys.

Figure 7: Example of exposed timbers and roof lining of B1.

The floor and surfaces had a reasonable layer of dust and debris (i.e. not recently swept). There were mice and swallow droppings evident but no bat droppings.

Some of the windows were open spaces with no glass or frames present, allowing wildlife entry to the interior.

B1 & B3 linked open access between them internally.

The buildings were light and airy.

Figure 8: Showing the roof open to the underside of the tiles in places in B1.

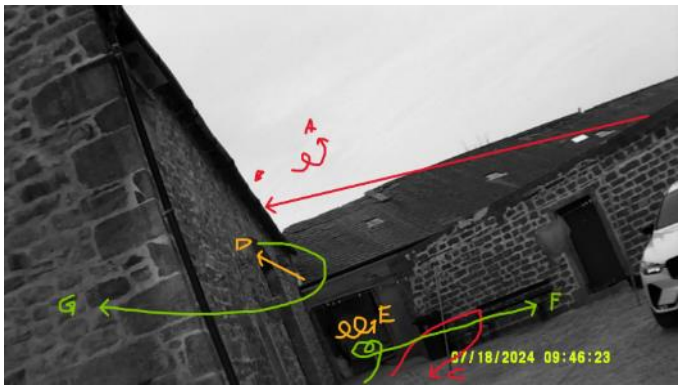
Evidence of bats

There was no evidence found of bats having used the structure as a resting or breeding site. No droppings, grease marks or urine stains were recorded during the thorough inspection.

Breeding birds and other incidental observations.

There was some evidence of nesting/roosting birds inside the buildings (feathers and some nesting material) with some nesting material present in the rafters, and swallows' nests in buildings B1 & B3. Swallows observed foraging around the buildings.

3.6 Emergence Surveys Summary of Results

Camera Position 1 & Surveyor P1 **Nightfox Whisker survey 1 & 2, Flir thermal Survey 3.** *Observing the courtyard formed by B2, B1, the entrance to B3 & the farmhouse.* Moderate level of foraging by several common pipistrelle bats in the courtyard and flying over the buildings, including entering and exiting the open barn door to B3 (E on image). On survey #1 a single bat landed above the large barn door to B1 (D on image below), rested for 1 minute then flew off again (G). Occasional forage of small myotis & BLE heard on all 3 surveys. No additional activity recorded on Whisker. Survey#3: FLIR thermal camera footage showed bats flying and foraging in the doorway of B3, either from the courtyard, or within, consistent with the Nightfox Whisker footage on survey #1 and surveyor notes. Frequent social calls recorded throughout all surveys. No bat emergences recorded on any of the surveys that didn't correspond with bats seen entering to forage (from P2).	 

Camera Position 2 & surveyor P2
Nightfox Whisker
Observing the east and north elevations of B3

High levels of foraging by common & occasional soprano pipistrelle bats (passing surveyor from the shippen to the north on all 3 surveys), foraging in the yard, passing over B3 and circling the site.
Estimate of 15-20 bats.
Survey 1 & 2: Single C. pipistrelle bat seen entering the open doorway early in the survey (arrow on image upper right), corresponding with timing of bats seen foraging in the doorway at P1.

Occasional myotis sp. forage heard only.

Frequent social calls recorded throughout all surveys.

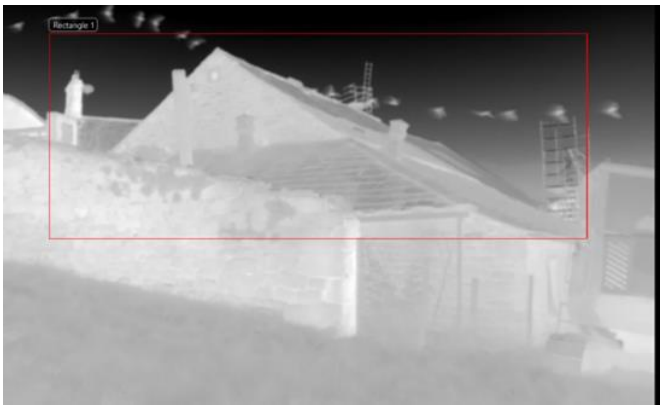
No bat emergences recorded on any of the surveys that didn't correspond with bats seen entering to forage.

No additional activity recorded on NVA.

Camera Position 3 & surveyor P3
IR camcorder, and thermal scope survey #1 & #2, FliR thermal camera #3.
Observing the west gable of B3 & north/west elevations of B1.

A high number of common and occasional soprano pipistrelle bats were observed foraging around the building, passing from the east behind the surveyor's position. There were also occasional passes over the buildings (example shown in thermal image still, below right). Myotis species were seen foraging around mature trees to the west. Social calls were frequently recorded throughout all surveys.

No bats were seen entering or emerging from this area of the buildings.



Camera Position 4 & surveyor P4 **IR camcorder.** *Observing the south gable of B1; camera focused on small annex on the southwest.* There was minimal foraging activity observed along the access lane, beneath the tree line, by common pipistrelle species across all surveys. Occasional and brief myotis foraging heard later in the surveys. **No bats were seen entering or emerging from this area of the buildings.**	
Static detector recordings: (Peersonic RPA4 + external microphone)	B1: No bat calls recorded B3: Occasional common pipistrelle foraging from 30 -40 mins after emergence time. 1-3 individuals.

4.0 Conclusions, Impacts and Recommendations

4.1 Summary

The surveys undertaken to date following current guidelines provide sufficient information to conclude that these buildings are not currently being used by bats for roosting.

- The emergence survey recorded high numbers (15-20) of common pipistrelle (*Pipistrellus pipistrellus*) bats, occasional soprano pipistrelle (*P. pygmeus*) and myotis sp. (including natterers bats *M. nattereri)* commuting and foraging from the surrounding area.
- The likely location of a maternity roost for common pipistrelle bats and a day roost for soprano pipistrelle bats has been identified in the large barn/shippen to the north of the site.
- No emerging or roosting bats were recorded either by surveyors or recorded on any camera in the survey buildings.
- Low number of *P. pipistrellus (1-3)* occasionally using B3 for foraging, one bat cutting through from the roost in the open shippen offsite to the north.
- The site contained active bird nests at the time of survey.

4.2 Evaluation

There is some foraging habitat present on site, and along the access track under the mature trees. This area will be retained under the current plans, and with the correct lighting, will continue to be suitable for foraging bats.

Without mitigation, there is considered to be only a low potential for the alteration or loss of occasional, unconfirmed roost sites for bats at the site and this is unlikely to have a significant impact on their local distribution.

Survey assessment conclusions:

- The survey did not find any evidence of current or past bat roosts at the site.
- We consider that the buildings are unlikely to be used by significant numbers of bats for roosting. It is highly unlikely the buildings are essential for species survival. Precautionary mitigation would be appropriate.
- Evidence showed that swallows had active nests at the time of surveys.
- No evidence of the presence of barn owls was recorded during the surveys.

4.3 Mitigation & Recommendations

Due to the transient nature of bats, their presence can never be entirely ruled out, particularly when a building has roost potential. Therefore, a precautionary method of working should be adopted, and the following guidelines adhered to:

1. All contractors on the site will be made aware of the possible presence of bats prior to the commencement of work.
2. Contractors will be provided with the contact details of an appropriately qualified individual who can provide advice in relation to bats at any time during work. In the event that bats are found during work, unless the action has already been cleared by a suitably qualified individual, **all work will cease,** and an appropriately qualified individual will be contacted for further advice.
3. Contractors will be observant during demolition work for bats which may use the buildings if new areas of the roof are exposed and left open overnight. Bats are opportunistic and may make use of gaps opened up during work overnight.
4. If it is necessary to remove a bat to avoid it being harmed, gloves should be worn. It should be carefully caught in a cardboard box and kept in the dark in a quiet place until it can be released at dusk near to where it was found, or moved to an undisturbed part of the building, with outside access, and placed in a location safe from predators (e.g. previously installed bat box).
5. Remove all roof coverings by hand only.
6. Retain/include at least eight gaps along the eave's lines of the buildings which allow access to the wall tops under the eaves during any re-roofing which is undertaken. A plan for this type of roost is shown on Figure 9.
7. Lighting**:** Lighting design should be low level (e.g downward facing wall lights) and avoid shining at any wildlife enhancement features installed. Existing dark corridors to be maintained where possible.
8. Institution of Lighting Professionals & BCT's publication: Guidance note 08/23 *Bats and Artificial Lighting at Night* gives in-depth and useful guidance on avoiding disturbance to wildlife by artificial lighting.
9. Mitigation and enhancement for each building will be designed individually and included in the early stages of design.

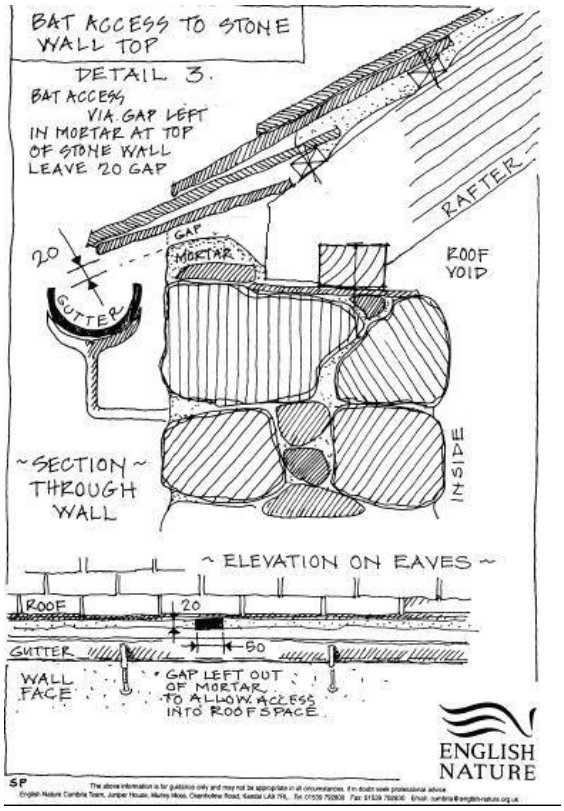


Fig 9. Creating bat roost access to the wall tops *(English Nature, 2004).*

- **Birds:** An appropriately qualified ecologist should conduct a thorough inspection of the buildings immediately before the commencement of works if these occur during the breeding season (March – September inc.). All active nests will need to be retained until the young have fledged**.**
- A suitable provision for nesting swallows will be required for mitigation of nesting areas lost. At least one provision on each building including: Either an overhang over a row of nesting cups or a purpose-built addition in keeping with the building e.g Fig 10. below:

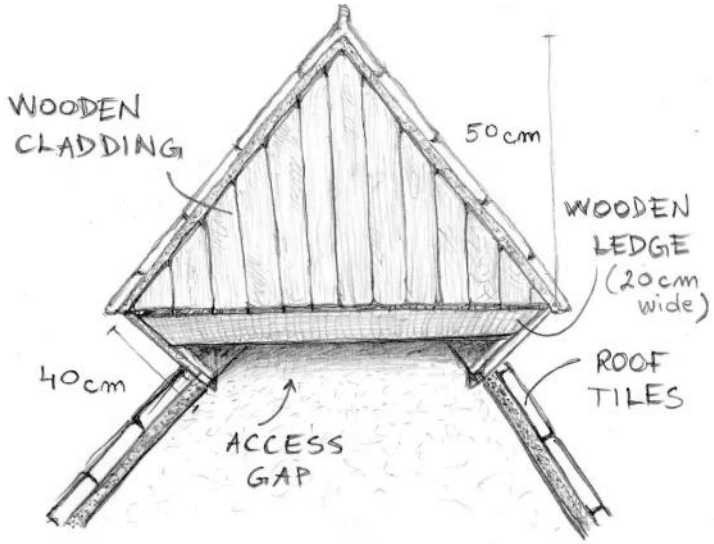


Fig 10: Example of swallow nesting provision *Acer ecology 2024*

Mitigation cont:

- **If bats are found during any stage of development, work should stop immediately, and a suitably qualified ecologist should be contacted to seek further advice.**
- **On the basis of survey information, specialist knowledge of bat species and the mitigation that has been proposed, it is considered that on balance the proposed activity is reasonably unlikely to result in an offence under regulation 39 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. We do not consider there to be a need for a Natural England licence at this time. If bats are found prior to or during work a licence application will be required.**

4.4 Enhancements

Enhancements : Bats *The Local Planning Authority has a duty to ask for enhancements under the NPPF and circular 06/2023: Biodiversity and Geological Conservation. Para.99*	The installation of a minimum of 3 bat boxes on adjacent trees and existing unaffected buildings, prior to the commencement of works, and a further box on each building once work is complete will provide additional roosting habitat for bats in the area e.g. • Greenwoods Ecohabitats • https://www.greenwoodsecohabitats.co.uk/bats • Kent Bat Box (timber). Bat boxes should be positioned 3-5m above ground level facing in a south/south-westerly direction with a clear flight path to and from the entrance.

Enhancements birds	Install 4 bird boxes on adjacent trees/buildings e.g. • National Trust Green WoodStone 32mm Nest Box • Schwegler 1B nest boxes • Schwegler 2H Robin Boxes Nest boxes should be positioned approximately 3m above ground level where they will be sheltered from prevailing wind, rain and strong sunlight. House martin/swallow boxes should be placed under the eaves with clear entrance/exit paths.

5.0 References

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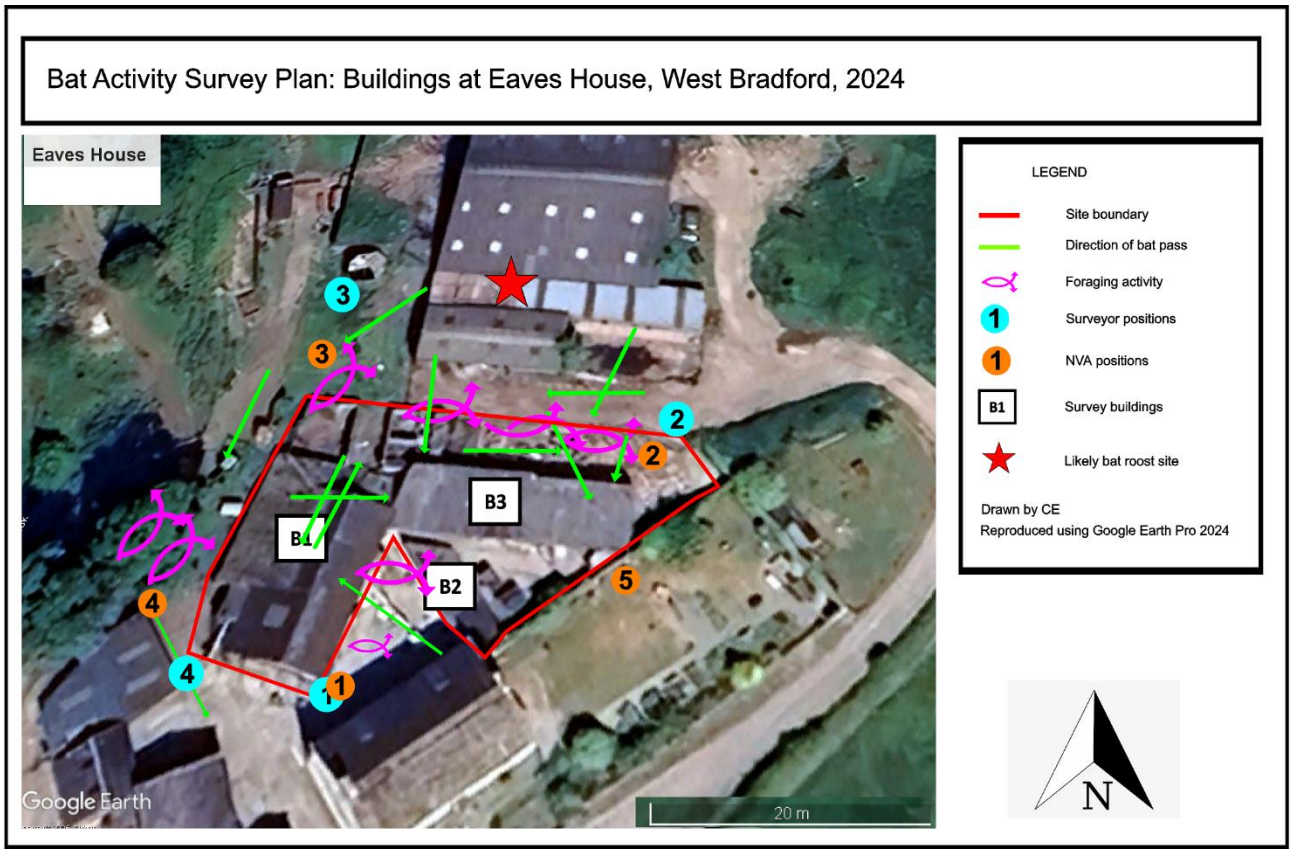
Appendix 1: Survey Plan

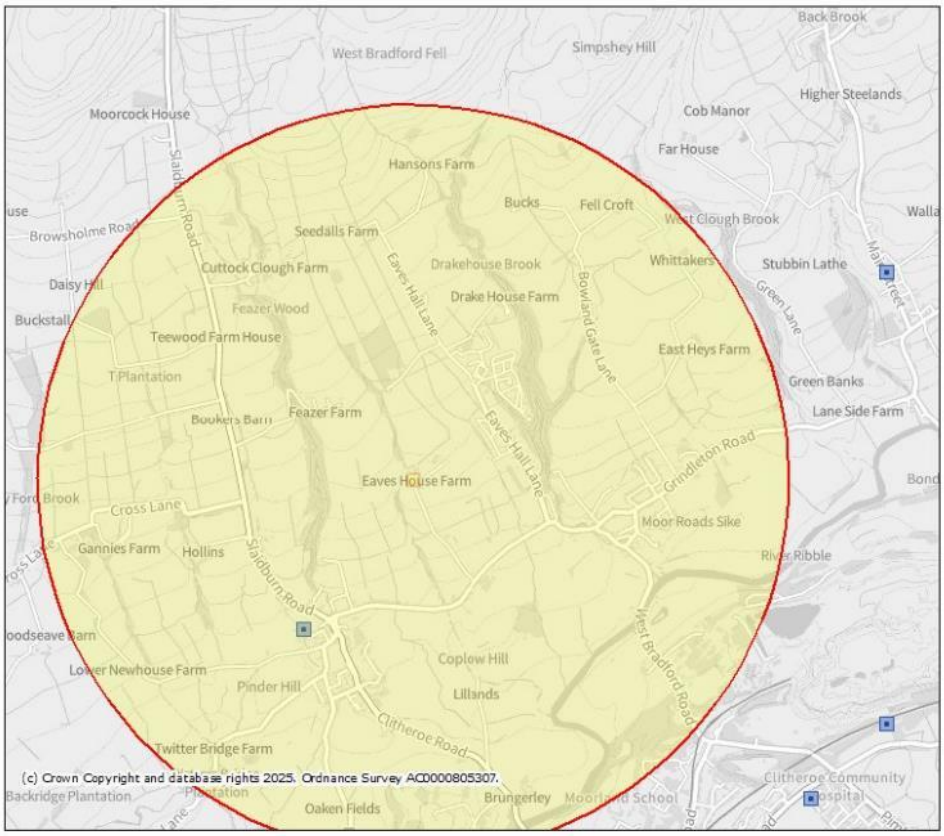


Appendix 2: Proposed Site Plan

Not supplied

Appendix 3: Desk Study Information

MAGIC **EPSML locations Eaves House Farm**



Legend

Granted European Protected Species Applications (England)

- Amphibian
- Bat
- Cetacean
- Invertebrate
- Other Mammal
- Plant
- Reptile

Projection = OSGB36
xmin = 368600
ymin = 442700
xmax = 378600
ymax = 447400
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