

Bat emergence surveys
Foxlea, Cadleigh, Tiverton, Devon
August / September 2021

A report by

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(Natural England licence no: 2016-24281-CLS-CLS)

Report details

Site address: Foxlea, Cadleigh, Tiverton, Devon, EX16 8RU
Grid reference: SS915062
Report date: 6th July 2022
Report Author: Michael Sanders BSc (Hons)
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Report no: WOR 2457

Declaration of compliance

BS 42020:2013

This study has been undertaken in accordance with British Standard 42020:2013 Biodiversity, Code of practice for planning and development.

Code of Professional Conduct

The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

Validity of survey data and report

The findings of this report are valid for 12 months from the date of survey. If a European Protected Species Licence application has not been made within this period, updated surveys by a suitably qualified ecologist are likely to be required to support a licence application.

Non-technical summary

Western Ecology has been commissioned to complete a preliminary visual assessment for bats and breeding birds of Foxlea, Cadleigh, Tiverton, Devon, EX16 8RU. The building will have an extension added to the south aspect at the west end (plan 2b).

The preliminary assessment found the following:

“Evidence of roosting bats was found. In the main void, bat droppings (>500 total) were visible scattered on insulation material under the ridge timbers, together with a few aggregations at the west end. Externally, occasional gaps are visible in roof tiles and at the verges.”

Further surveys were recommended.

Emergence surveys were carried out in August / September 2021 during which time it was found that:

- At least 1 long-eared and 3 common pipistrelle bats are day roosting in association with the building.

Without mitigation, the proposed works on the building have the potential to disturb, injure or kill day roosting long-eared and common pipistrelle bats.

In the long term, development may lead to the damage or destruction of the following roosts:

- Day roosts used by 1 long-eared and 3 common pipistrelle bats.

To proceed legally, these activities would require a Mitigation licence for European Protected Species with a supporting method statement to protect bats during the process.

This licence will be supported by a detailed mitigation strategy to ensure that bats are not killed or injured during the works, and to make sure alternative roosting opportunities are provided during the works and created within the completed structure. Full mitigation methods are described below. This will include the provision of new roost facilities that will be based on the species requirements.

A suitable method statement is provided within this report and includes:

- Alternative temporary roosting provision;
- New roosting provision within the finished development;
- Lighting;
- Ecological Watching Brief (EcoW);

Table of contents

1. Introduction	5
1.1. Background.....	5
1.2. Site description	5
1.3. Proposed works	6
1.4. Survey aims	6
2. Methods.....	7
2.1. Dusk emergence surveys.....	7
2.2. Remote monitoring.....	8
2.3. Desktop search	8
3. Results.....	9
3.1. Bat emergence surveys	9
3.2. Remote Monitoring.....	9
3.3. Summary of bat survey results, interpretation and evaluation	9
4. Assessment	13
4.1. Survey constraints.....	13
4.2. Assessment of potential impact on bats	13
4.3. Legislation.....	13
5. Recommendation and mitigation	15
5.1. Timings of works	15
5.2. Alternative temporary roosting provision	15
5.3. New roosting provision within the finished development.....	16
5.4. Lighting	17
5.5. Ecological Watching Brief (EcoW).....	17
5.6. Post development monitoring.....	18
References	19

1. Introduction

1.1. Background

Western Ecology has been commissioned to complete a preliminary visual assessment for bats and breeding birds of Foxlea, Cadleigh, Tiverton, Devon, EX16 8RU. The preliminary assessment found the following:

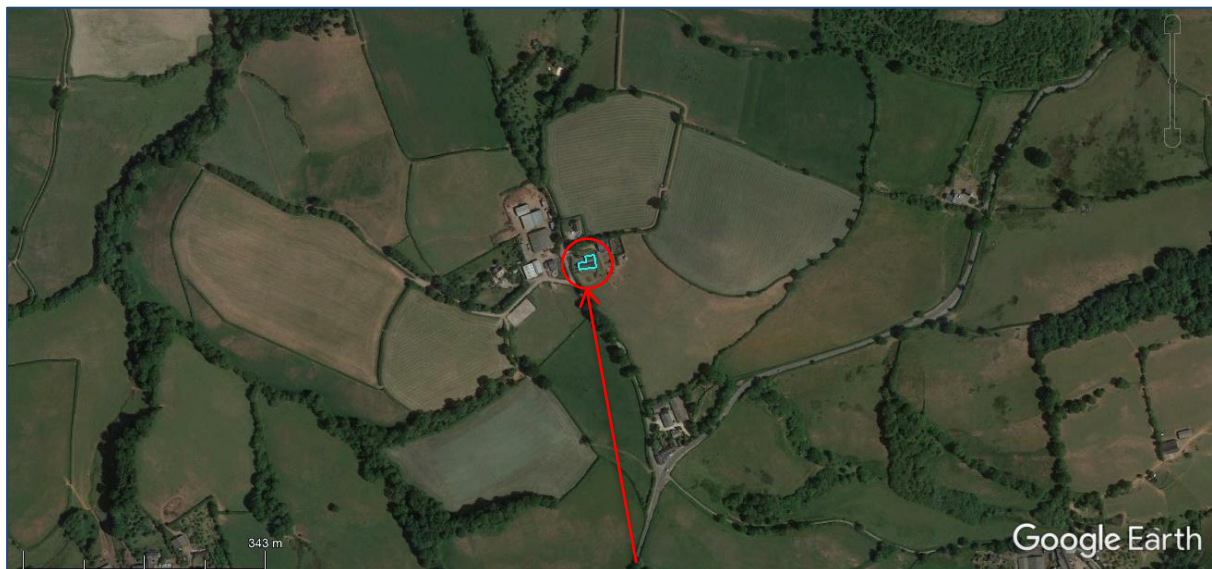
“Evidence of roosting bats was found. In the main void, bat droppings (>500 total) were visible scattered on insulation material under the ridge timbers, together with a few aggregations at the west end. Externally, occasional gaps are visible in roof tiles and at the verges.”

Further surveys were recommended. This report documents this further survey work and provides a full assessment of roosting bats. This report also provides an outline of the required mitigation to allow development associated with this structure to proceed in a lawful manner.

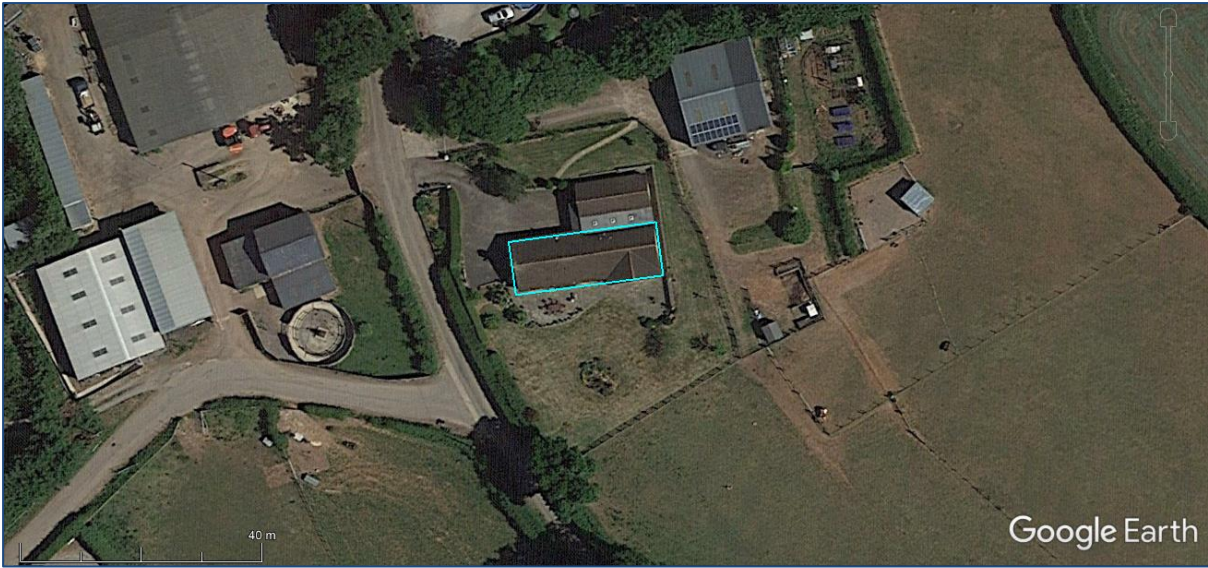
This survey has been prepared in accordance with the Bat Conservation Trust’s “Bat Surveys Good Practice Guidelines” (Collins, 2016).

1.2. Site description

The building is set in a rural location 6.5km to the south-west of Tiverton in Devon (Plan 1). The site is surrounded by farmland with close managed hedgerow, and hedgerow with trees, which provides connectivity out to the wider landscape. A small water course is present 200 metres to the south west. Small wooded areas are scattered throughout the surrounding countryside. The surrounding semi-natural habitat is largely unlit at night and likely to provide good potential for foraging and commuting bats in the area.



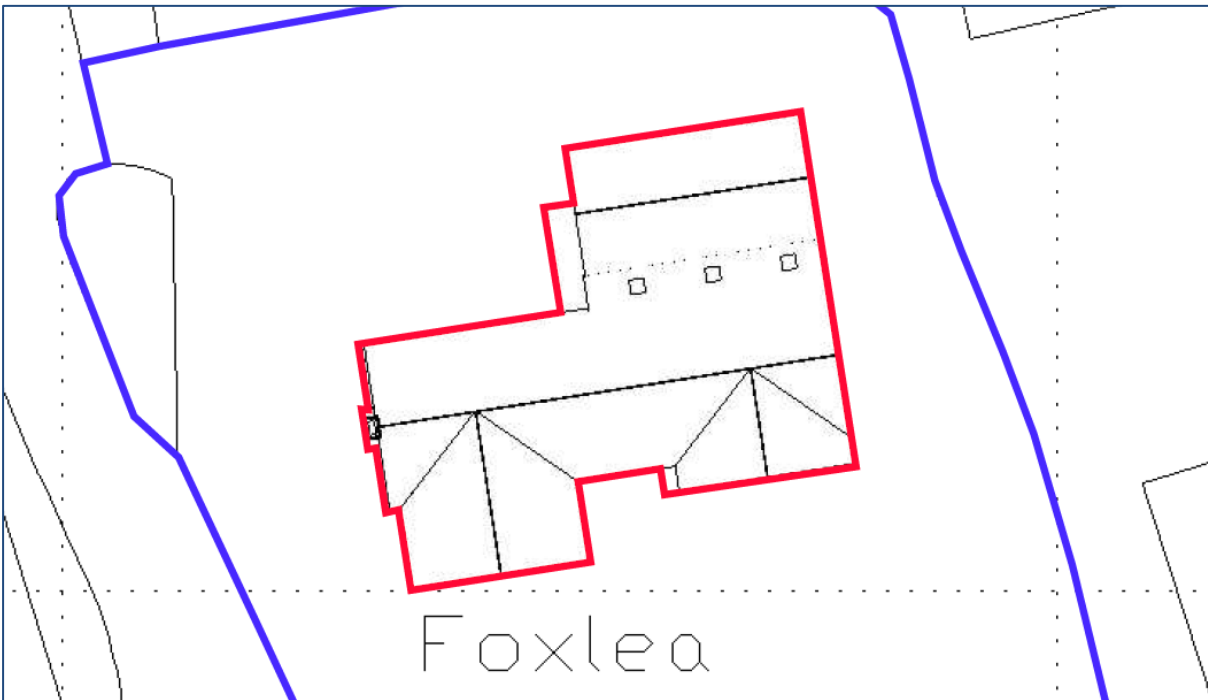
Plan 1. The location of the building surveyed



Plan 2a. The building surveyed at this site (blue line)

1.3. Proposed works

The building will have an extension added to the south aspect at the west end (plan 2b).



Plan 2b. Proposed plan (red line)

1.4. Survey aims

The purpose of this survey is to determine, with confidence, if bats are present at the property, and if so, to provide evidence on which to base mitigation.

The survey will also determine if a European Protected Species licence will be required to allow the proposed development to proceed lawfully.

2. Methods

2.1. Dusk emergence surveys

These surveys consist of a sufficient number of experienced bat surveyors monitoring a built structure for bat activity. Echo Meter Touch, and BatBox heterodyne bat monitors, are used during the surveys. Where necessary, Sony infrared capable camcorders (FDR AX100, HDR-SR12), in conjunction with 850nm infrared lighting rigs (Raytec Vario I4), are also used. The surveyors, including at least one licenced bat ecologist, are stationed around the building in such a way that any bat leaving or entering the structure is likely to be observed (Plan 3). The survey normally begins 15 minutes before sunset and continues until at least 90 minutes after sunset or when light levels are so low that any emerging bats cannot be seen.

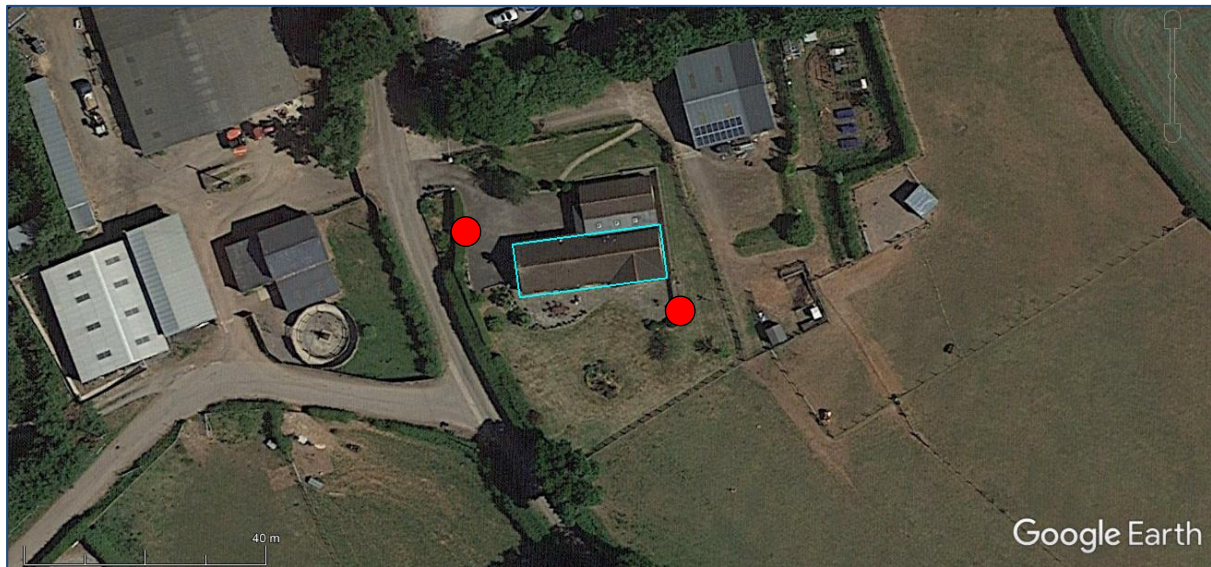
This survey methodology complies with guidelines produced by the Bat Conservation Trust (Collins, 2016).

Table 1. Emergence survey details

Date of each survey visit	Start and end times and time of sunset	Structure reference / location	Equipment used (include make of bat detectors and logging equipment)	Weather – (Include start and end temps, precipitation, Beaufort wind scale etc)	Comments (to include # of surveyors used for each visit):
27/08/2021	Sunset 20:10 Survey 19:55 to 21:40	Foxlea	EMT2, Peersonic RPA3, Batbox Duet	F2 W, 20% cloud, dry, start 17°C finish 15°C	2 surveyors: Michael Sanders, Yolande Knight,
15/09/2021	Sunset 19:30 Survey 19:15 to 21:00	Foxlea	EMT2, Peersonic RPA3, Batbox Duet	Calm, no cloud, dry, start 16°C finish 12°C	2 surveyors: Michael Sanders, Steve Hicks

Table 2. Surveyor details

Michael Sanders, Natural England licence no: 2016-24281-CLS-CLS with 8 years of bat survey experience.
Yolande Knight PhD Natural England licence no: 2020-47431-CLS-CLS with 7 years of bat survey experience.
Stephen Hicks has been assisting with bat emergence surveys since 2010



Plan 3. The location of surveyors in red.

2.2. Remote monitoring

A remote bat detector was deployed in the roof void. The monitor was set to record continuously.

Following deployment, the data was downloaded and the resultant sonograms analysed to determine which bat species had been recorded within the building during the deployment period and their patterns of activity.

Sonogram analysis was completed using Analook software (v4.2n) and Kaleidoscope Pro by Colin Hicks CIEEM who has more than 10 years of experience in sonogram analysis during which time he has analysed more than 500,000 calls.

2.3. Desktop search

A biological records search was not considered appropriate due to the highly mobile nature of bats. It is assumed that all species of bat that are present in Devon could be active within the vicinity which includes Barbastelle, Serotine, Noctule, Lesser Horseshoe, Greater Horseshoe, Common Pipistrelle, Soprano Pipistrelle, Nathusius Pipistrelle (very rare), Whiskered, Brandt's, Natterer's, Daubenton's, Brown Long-eared and possibly Grey Long-eared.

It is very unlikely when considering the location and structure being assessed that a data search would provide further meaningful information.

If a full European Protected Species licence is required for this site, a biological records search for bats will be completed with the local records centre to support the licence application.

3. Results

3.1. Bat emergence surveys

1st Emergence survey

During the survey, three common pipistrelle bats emerged (20:11 to 20:21) from the structure (Plan 4a).

Weather conditions were good for bat activity and bats were present in the vicinity of the site. The first bat recorded in the area was a common pipistrelle emerging at 20:11.

2nd Emergence survey

During the survey, one common pipistrelle bat emerged (19:58) and one long-eared (20:08) from the structure (Plan 4b).

Weather conditions were good for bat activity and bats were present in the vicinity of the site. The first bat recorded in the area was a common pipistrelle passing from the north at 19:39. Occasional myotis and long-eared were recorded in the vicinity of the site throughout the duration of the survey. Common pipistrelle and soprano pipistrelle were recorded steadily throughout.

3.2. Remote Monitoring

5 long-eared calls were recorded during the period of remote monitoring in the roof void.

3.3. Summary of bat survey results, interpretation and evaluation

Species, numbers of bats, roost locations, roost descriptions and interpretation, conservation significance (Mitchell-Jones, 2004) and roost value (Wray et al, 2010) are summarised in Table 3 a & b and Plan 4 a & b.



Plan 4a. Existing elevations - location of emerging common pipistrelle (red arrow) during the 1st emergence survey.



Plan 4b. Existing elevations - location of emerging long-eared (blue arrow) and common pipistrelle (red arrow) during the 2nd emergence survey.

Table 3a. Summary of results from 1st emergence survey

Species and numbers	Roost type	Structure reference	Roost location	Access points	Dimensions of existing roosts or explanation of where the roost is	Roost Conservation significance (Mitchell-Jones, 2004)	Roost Value (Wray et al, 2010)
1 x common pipistrelle	Day roost	Foxlea	Tile verge on west gable end	1	Crevice roost behind tile gap (north pitch)	Low	Local importance
2 x common pipistrelle	Day roost	Foxlea	Tile verge on west gable end	2	Crevice roost behind tile gap (south pitch)	Low	Local importance

Table 3b. Summary of results from 2nd emergence survey

Species and numbers	Roost type	Structure reference	Roost location	Access points	Dimensions of existing roosts or explanation	Roost Conservation significance (Mitchell-Jones, 2004)	Roost Value (Wray et al, 2010)
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					of where the roost is		
1 x common pipistrelle	Day roost	Foxlea	Tile verge on west gable end.	1	Crevice roost behind tile gap (north pitch)	Low	Local importance
1 x long-eared	Day roost	Foxlea	Tile verge on west gable end	1	Roosting in association with roof void – access from behind tile gap (south pitch)	Low	Local importance

4. Assessment

4.1. Survey constraints

The initial assessment and emergence surveys were completed at an optimal time for such surveys (Collins, 2016).

All areas of the building could be readily observed during the dusk emergence surveys, and all equipment functioned correctly for the period of the surveys.

It is the professional opinion of the surveying ecologist that the initial bat assessment, in combination with the bat emergence surveys provides sufficient information in relation to bats to allow the decision-maker to determine the planning permission. Further survey work would not make any material difference to the information provided.

4.2. Assessment of potential impact on bats

Emergence surveys were carried out in August / September 2021 during which time it was found that:

- At least 1 long-eared and 3 common pipistrelle bats are day roosting in association with the building.

Without mitigation, the proposed works on the building have the potential to disturb, injure or kill day roosting long-eared and common pipistrelle bats.

In the long term, development may lead to the damage or destruction of the following roosts:

- Day roosts used by 1 long-eared and 3 common pipistrelle bats.

To proceed legally, these activities would require a Mitigation licence for European Protected Species with a supporting method statement to protect bats during the process.

4.3. Legislation

Bats

Bat species and their breeding or resting places (roosts) are protected under the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2017 (as amended). They are identified as European Protected Species. Under these laws it is an offence to:

- capture, kill, disturb or injure bats (on purpose or by not taking enough care);
- damage or destroy a breeding or resting place (even accidentally);
- obstruct access to their resting or sheltering places (on purpose or by not taking enough care); or
- possess, sell, control or transport live or dead bats, or parts of them.

Seven species of bat are listed as being of principal importance, in the Secretary of State's opinion, for the purposes of conserving biodiversity. Under section 41 (England) of the NERC Act (2006) there is a need for these species to be taken into consideration by a public body when performing any of its functions with a view to conserving biodiversity.

These seven bat species are barbastelle, Bechstein's, noctule, Soprano pipistrelle, brown long-eared, greater horseshoe and lesser horseshoe and are the subject of National and Local Biodiversity Action Plans.

Activities that can affect bats (from GOV.UK)

Activities that can affect bats include:

- renovating, converting or demolishing a building
- cutting down or removing branches from a mature tree
- repairing or replacing a roof
- repointing brickwork
- insulating or converting a loft
- installing lighting in a roost, or outside if it lights up the entrance to the roost
- removing commuting habitats such as hedgerows, watercourses or woodland
- changing or removing their foraging areas
- using insecticide
- treating timber

5. Recommendation and mitigation

To proceed lawfully, works will require a Natural England European Protected Species (EPS) mitigation licence for bats at this site.

This licence will be supported by a detailed mitigation strategy to ensure that bats are not killed or injured during the works, and to make sure alternative roosting opportunities are provided during the works and created within the completed structure. Full mitigation methods are described below. This will include the provision of new roost facilities that will be based on the species requirements.

5.1. Timings of works

There are minimal timing constraints as there is no maternity roost whilst the building is unlikely to be important for hibernating bats.

5.2. Alternative temporary roosting provision

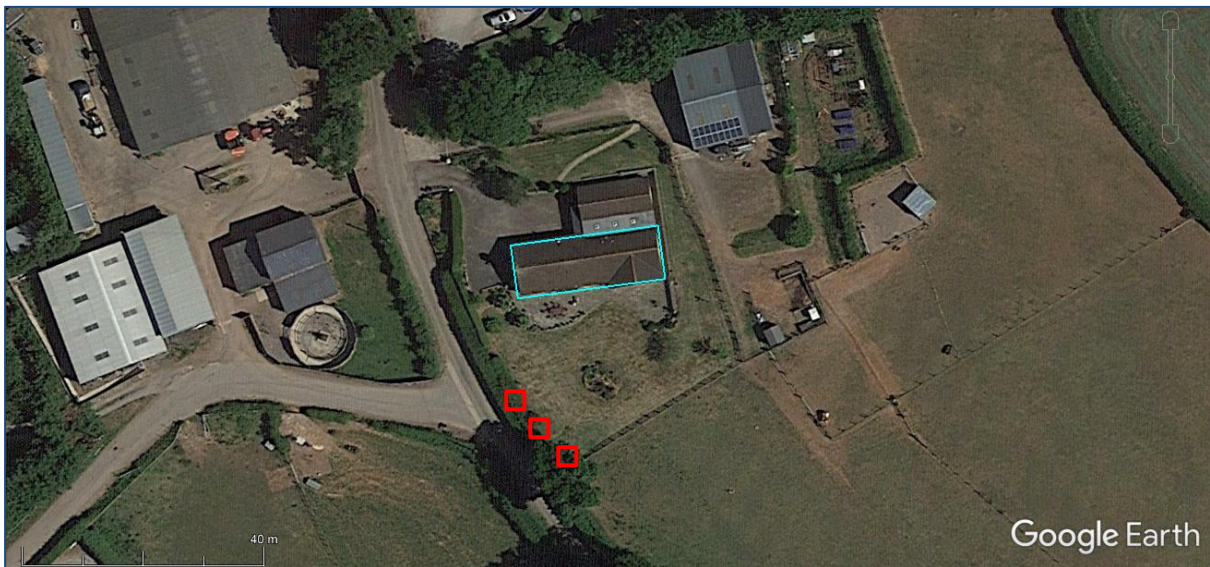
Prior to any works commencing on site, alternative temporary roosting boxes must be provided for the common pipistrelle and long-eared bats. This will be in the form of two Vincent Pro Bat boxes (Figure 1) and 1 improved cavity box (Figure 2). Bat Boxes should be secured to trees or untreated wooden posts (the base of the posts may be treated) at least 3 metres above the ground, adjacent to the building (Plan 5). Alternative roosting provision must be installed under the licensed bat ecologist's supervision prior to any works commencing.



Figure 1. Vincent Pro Bat Box



Figure 2. Improved cavity box



Plan 5. Outline of existing building in blue. Location of alternative temporary roosting boxes (red square).

5.3. New roosting provision within the finished development

The long-eared bat roosting location (west end of void space) will be retained after the addition of the extension roof, and access in association with the barge board / tile verge area on west gable will be retained (plan 6).

The common pipistrelle bat roosting locations and access in association with the barge board / tile verge area on west gable (south and north pitch) will be retained (plan 6).

This must be approved and supervised by the licensed bat ecologist.



Plan 6. Barge boards and tile verge areas with existing gaps to be retained (blue shading). Roof void space to be retained (yellow shading)

5.4. Lighting

The presence of lighting can have a significant effect on bat species roosting, foraging and navigating. Many species of bats are known to sample the light levels before emerging from their roost; only emerging for their night's hunting when the light intensity outside reaches a critical level after sunset.

During construction, all site lighting must be situated and angled away from any roosting provision and linear vegetation, i.e. hedgerows and nearby tree-lines etc. that may be used as flight paths.

Lighting must be situated and angled away from the new roosting provision within the finished development.

5.5. Ecological Watching Brief (EcoW)

Works likely to affect roosting bats cannot begin until the European Protected Species licence has been issued.

Once the licence has been issued and prior to the start of work, site staff will be briefed on the protected status of bats and the licenced working methods to be adopted.

The alternative roosting provisions will need to be in place before the start of works. In addition, a visual survey will be required before any works commence and a licenced ecologist will undertake ecological watching briefs during works in areas where bats may be found.

The licenced ecologist will be on hand and will undertake further site visits during the works to ensure adherence to mitigation methods and provide advice should unforeseen circumstances be met.

If a vespers bat is found during the initial visual survey, they will, if possible, be relocated to the alternative roosting opportunities on site. This will only be done by the licensed ecologist and will follow recommended practises.

The licenced ecologist will be on hand and will undertake site visits during the works to ensure adherence to mitigation methods and provide advice should unforeseen circumstances be met.

Measures will be adopted to reduce noise and vibration during works in the vicinity of bat roosting areas.

Prior to the start of works, site staff will be briefed on the protected status of bats and what to do if a bat is unexpectedly encountered.

5.6. Post development monitoring

In line with guidelines, post development monitoring is not required.

References

Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition). The Bat Survey Trust, London. ISBN-13 978-1-872745-96-1

Mitchell-Jones, A. J., 2004. Bat mitigation guidelines. Version: January 2004. Natural England.

Wray et al. (2010). Valuing Bats in Ecological Impact Assessment. CIEEM In Practice Volume70 p23-25. (December 2010).