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Bat emergence surveys

Lower Gawns, Blisland, Bodmin, Cornwall

September 2019 and August 2020

A report by

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Report details

Site address:	Lower Gawns, Blisland, Bodmin, Cornwall, PL30 4JL
Grid reference:	SX 11341 73556
Report date:	22nd December 2020
Report Author:	Michael Sanders BSc (Hons) (Natural England licence no: 2016-24281-CLS-CLS) and John Blackburn BSc (Hons), MSc, PGCE (Natural England licence no: 2019-39576-CLS-CLS)
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Report no:	WOR 1039/1640

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 was commissioned in August 2019 to complete a preliminary visual assessment for bats and breeding birds of Lower Gawns, Blisland, Bodmin, Cornwall. The house will be extended to the south-west.

The preliminary roost assessment found the following:

"The building offers many gaps that allow bats access into the roof void. These include gaps in the mortar at gable ends, loose slates and the holes in the chicken wire underneath the entirety of the fascia boards around the entire property. These features which when viewed in the context of the large amount of surrounding favourable habitat, offer moderate suitability for crevice roosting bats."

To allow full characterisation of the site, further surveys were recommended.

Emergence surveys were carried out in September 2019 and August 2020 during which time it was found that:

- At least one common pipistrelle and four soprano pipistrelle bats are day roosting in association with the building.

Without mitigation, the proposed works have the potential to disturb, injure or kill small numbers of day roosting common and soprano pipistrelle bats.

In the long term, works will destroy a soprano pipistrelle bat day roost (south-west gable apex). Works to add a sun tunnel may lead to the loss of a common pipistrelle day roost used by a single bat (South-east facing roof pitch above the door).

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 need to be supported by a detailed mitigation strategy to ensure that bats are not killed or injured during the process, and to make sure alternative roosting opportunities are created. This will include the provision of new roost facilities that will be based on species requirements.

Full site-specific details will be required for the EPS licence application and method statement. These will include:

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

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1. Introduction

1.1. Background

Western Ecology was commissioned in August 2019 to complete a preliminary visual assessment for bats and breeding birds of Lower Gawns, Blisland, Bodmin, Cornwall. The preliminary roost assessment found the following:

"The building offers many gaps that allow bats access into the roof void. These include gaps in the mortar at gable ends, loose slates and the holes in the chicken wire underneath the entirety of the fascia boards around the entire property. These features which when viewed in the context of the large amount of surrounding favourable habitat, offer moderate suitability for crevice roosting bats."

To allow full characterisation of the site, 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

Lower Gawns (Plan 2) is located in a rural position 1.3 km the east of Blisland, 7 km north-east of Bodmin (Plan 1.). There is immediate cover from mature trees to the north and east, with open grassland to the south and west. The surrounding countryside comprises more open grassland to the north and west with a woodland to the south and east. The site is connected to these habitats by hedgerows and tree lines, all which provide suitable foraging and commuting habitat to bats.

Open moorland – Trehudreth downs lies beyond the woodland 1km to the east. This moorland is a compartment of the North Bodmin Moor Site of Scientific Interest, a statutory conservation site designated for its moorland habitat and associated species.

Plan 1. The location of the building surveyed.

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

1.3. Proposed works

The house will be extended to the south-west. Sun tunnels will be added to the roof of the existing house, together with modifications to windows including a full height window on the south-east gable.

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. BatBox Duet heterodyne bat detectors and an Echo Meter Touch time expansion bat detector, attached to an iPhone 5C and Samsung S7 running the Echo Meter app, are used during the surveys. Where necessary, Sony infrared capable camcorders (FDR AX100, HDR-SR12, DCR-SR 35), in conjunction with 850nm infrared lighting rigs (Raytec Vario I2, 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.

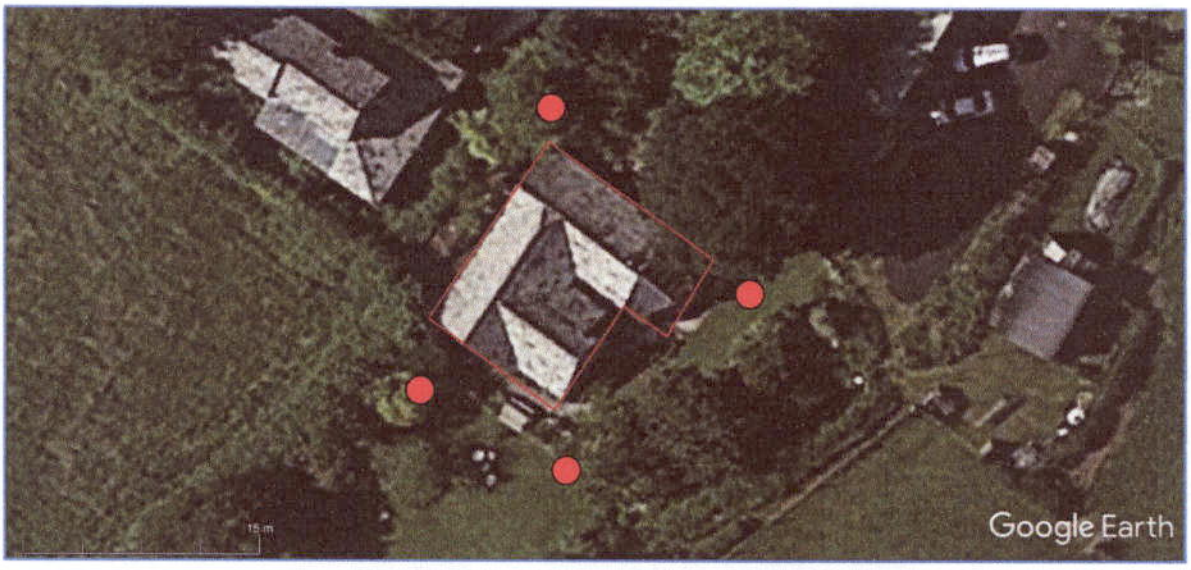
This survey methodology complies with guidelines produced by the Bat Conservation Trust (Collins, 2016).

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):
30/8/2020	Sunset 20:06. Survey 19:50 to 21:40	Lower Gawns	EMT2 + Samsung S7, EMT2+ iPhone 5C, Batbox Duet	Calm, clear, one light shower, start 13°C finish 14°C	4 surveyors: John Blackburn, Arlin Slater, Hollie Ferris, Chris Slade
12/9/2019	Sunset 19:41. Survey 19:26 to 21:45	Lower Gawns	EMT2 + Samsung S7, EMT2+ iPhone 5C, Batbox Duet	Calm, clear, dry, start 14°C finish 13°C	4 surveyors: John Blackburn, Sam Evans, Arlin Slater, Hollie Ferris
26/9/2019	Sunset 19:10. Survey 18:55 to 21:10	Lower Gawns	EMT2 + Samsung S7, EMT2+ iPhone 5C, Batbox Duet	Calm, clear, one light shower, start 13°C finish 14°C	4 surveyors: John Blackburn, Arlin Slater, Hollie Ferris, Chris Slade

Table 2. Surveyor details

John Blackburn, Natural England licence no: 2019-39576-CLS-CLS with 9 years of bat survey experience.
Arlin Slater has 5 years of bat survey experience.
Sam Evans, has two years experience surveying bats.
Hollie Ferris has three years experience surveying bats in Cornwall.
Chris Slade has two years experience surveying bats.



Plan 3. The location of surveyors for both surveys (red dots).

2.2. 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 Cornwall 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 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
Completed: 12th September 2019.

During the survey a total of 1 common pipistrelle (19:28) and 2 soprano pipistrelle (19:54 & 19:55) emerged from the building. Roost locations are detailed in plan 4 & 5 and table 4.

2nd Emergence survey
Completed: 26th September 2019.

During the survey a total of 1 common pipistrelle (19:32) and 2 soprano pipistrelle (19:44 & 19:46) emerged from the building. Roost locations are detailed in plan 4 & 5 and table 4.

3rd Emergence survey
Completed: 30th August 2020.

During the survey a total 1 common pipistrelle (20:32) and 3 soprano pipistrelle (20:19, 21:09, 21:21) emerged from the building. Roost locations are detailed in plan 4 & 5 and table 4.

3.2. 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 4a and plans 4 & 5.

Plan 4. Location of emerging common pipistrelle (yellow arrows) and soprano pipistrelle (blue arrows) during 1st and 2nd emergence survey.

Plan 5. Location of emerging common pipistrelle (yellow arrows) and emerging soprano pipistrelle (blue arrows) during 3rd emergence survey.

Table 4. Summary of results from emergence surveys.

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)
2 x Soprano pipistrelle	Day roost	Lower Gawns	South-west gable apex	1	Crevice roost at ridge	Low	Local importance
2 x Soprano pipistrelle	Day/ roost	Lower Gawns	north-west gable apex	1	Crevice roost at gable apex	Low	Local importance
1 x common pipistrelle	Day roost	Lower Gawns	South-east facing roof pitch above the door	1	Crevice roost in association with roof tiles below ridge	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 buildings 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 September 2019 and August 2020 during which time it was found that:

- At least one common pipistrelle and four soprano pipistrelle bats are day roosting in association with the building.

Without mitigation, the proposed works have the potential to disturb, injure or kill small numbers of day roosting common and soprano pipistrelle bats.

In the long term, works will destroy a soprano pipistrelle bat day roost (south-west gable apex). Works to add a sun tunnel may lead to the loss of a common pipistrelle day roost used by a single bat (South-east facing roof pitch above the door).

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

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 European Protected Species (EPS) licence for bats at this site.

This licence will ensure that bats are not killed or injured during the process and to make sure alternative roosting opportunities are created.

This site supports small numbers of a common species. New roost facilities should be created. These do not need to be exactly like-for-like, but should be suitable, based on species' requirements. There will be minimal timing constraints.

Mitigation measures are included below.

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, two alternative temporary roosting boxes must be provided for the common and soprano pipistrelle bats. This will be in the form of two improved cavity bat boxes and a Vincent Pro bat box (Figure 1) secured to a tree, or untreated wooden posts (the base of the posts may be treated) at least 3 metres above the ground, adjacent to the building (Plan 6). Alternative roosting provision must be installed under the licensed bat ecologist's supervision prior to any works commencing.

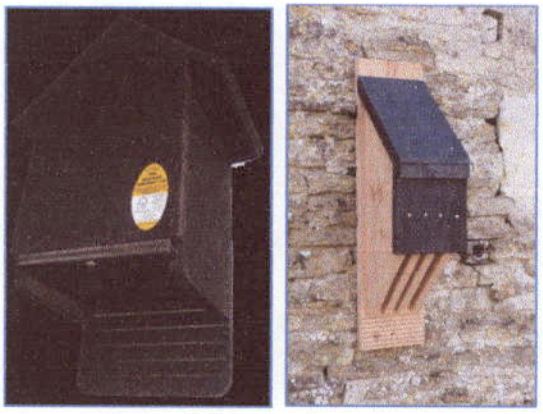
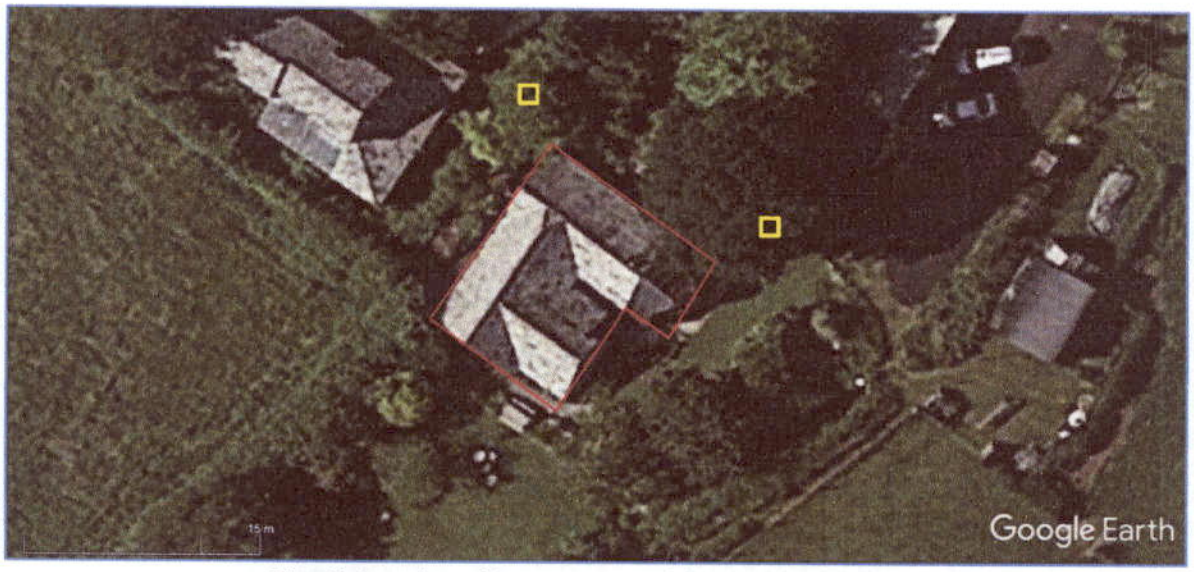


Figure 1. Improved cavity box



Plan 6. Location of temporary provision (yellow outline).

5.3. New roosting provision within the finished development

The existing bat access/egress points will be retained where practically possible. If the common pipistrelle day roosting site or soprano pipistrelle day roosting sites are obstructed or destroyed by works, new roosting opportunities must be created. Replacement of the known roosting location will be created within the finished structure, as close to existing ones, as practically possible.

For soprano pipistrelle bats on the south-west gable, replacement of the known roosting location will be created within the finished structure, as close as practically possible to the known roosting locations. Modified ridge tiles (Figure 2) will allow bats into the ridge (Plan 7) of the structure once works have been completed. Batten arrangements will allow bats to travel 2 metres in each direction behind the first row of slates. Bitumen 1F felt must be used in all roosting areas.

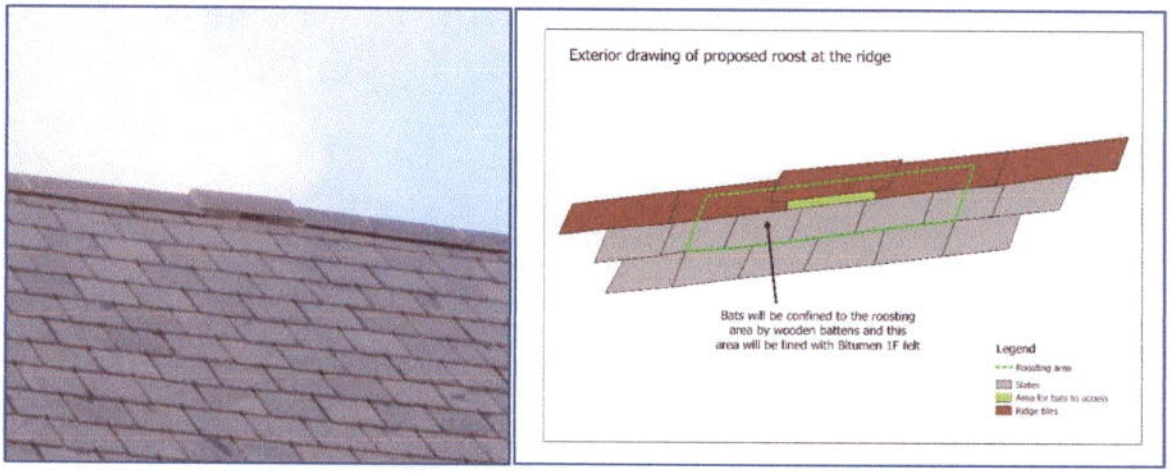
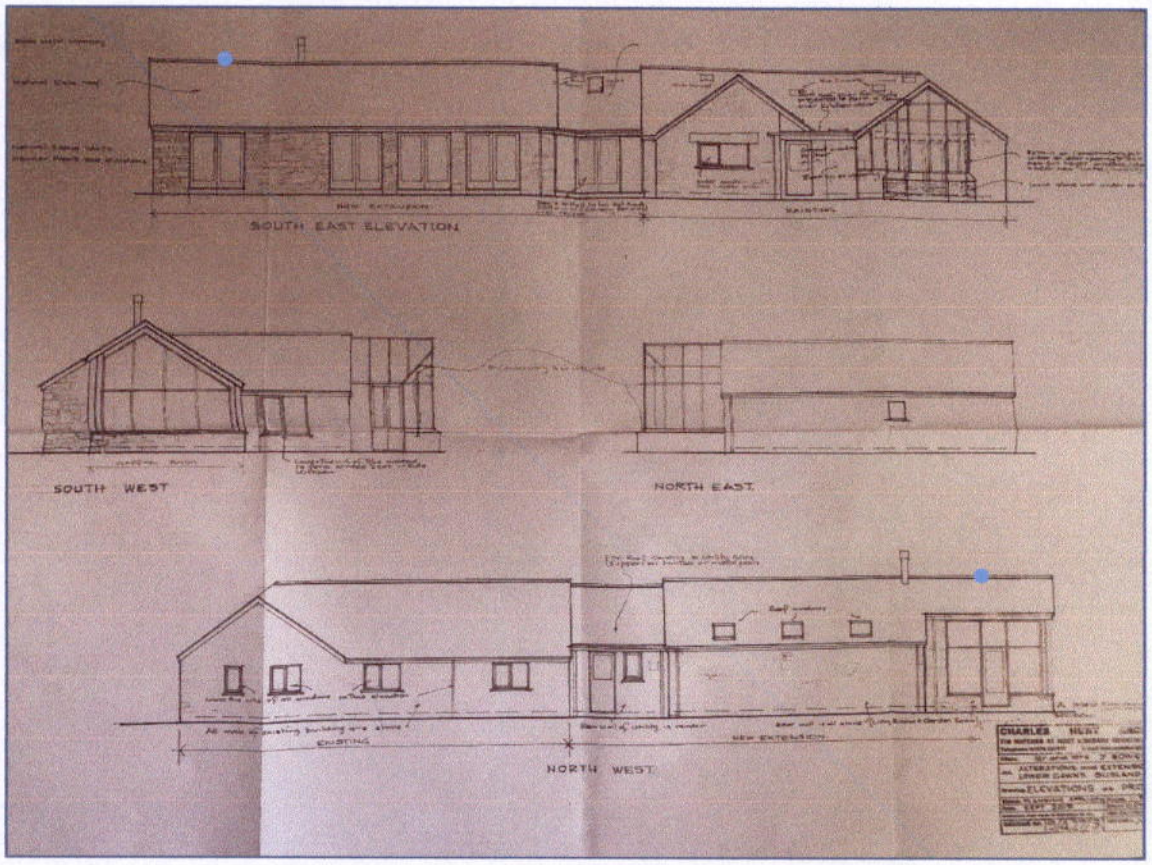


Figure 2. For illustration purposes only; a modified ridge tile allowing bats access into the roof covering. Modified ridge tiles will be of a similar design.

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



Plan 7. Location of replacement roost access - (blue dot) not to scale.

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 bat boxes 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 on the store 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 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 conversion 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 the bat roosting areas.

Prior to the start of work, 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 for small numbers of a common species (Mitchell-Jones, 2004), 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).