



awareecology

Bat Activity Surveys

Tall Trees

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Prepared by: Daniel Howgego BSc (Hons), MSc, ACIEEM

Aware Ecology Ltd
49 Sandown Drive
Hereford
HR4 9LU

Tel: 07470 433712
Email: daniel.howgego@awareecology.co.uk

SUMMARY

ITEM	DESCRIPTION
Site Address:	Tall Trees, Cheap Street, Chedworth, GL54 4AB
Type of structure:	Domestic Property
Survey effort:	<ul style="list-style-type: none"> - 2x Bat dusk surveys by an accredited bat ecologist
Survey date:	<ul style="list-style-type: none"> - Dusk Survey - 25/08/2023 - Dusk Survey - 14/09/2023
Surveyors:	Daniel Howgego - accredited under Hazel Robson (Bat licence ref 2015-10504-CLS-CLS)
Evidence of protected species found?	<ul style="list-style-type: none"> - Confirmed emergence during dusk surveys undertaken by Aware Ecology in 2023 (<i>common pipistrelle bat (2 bats)</i>)
Further survey required?	<ul style="list-style-type: none"> - Ecological Clerk of Works required for bats and nesting birds
Impacts on roost?	No - minor disturbance may occur, but works are minimal and can be managed by Precautionary Working Method Statement (PWMS)
Licence from Natural England required?	No (Toolbox talk required for contractors to ensure they understand and adhere to extent of works permissible without licence for other EPS)

Opportunities for
ecological enhancement:
(See section 4.6)

- 2x Integrated/external bat boxes
- 2x Open-fronted/enclosed bird boxes
- 1x Swift boxes

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1 INTRODUCTION

1.1 Background

Aware Ecology Ltd was commissioned by Challinor Hitchcock-Yoo Ltd. The proposals are to demolish the existing conservatory and replace with a side extension, as well as separate the loft space into two sections with a roof light splitting the areas apart. There is also a proposal to remove the existing solar panels from the southwestern roof aspect and replace with a larger number of modern panels.

The brief for this project was to undertake two bat activity surveys to feed into the planning proposal. This aims to assess the use of the property by bats as the previous ecology report by Ecology by Design in 2023 stated there was moderate roosting potential.

1.2 Site Description

The property is in the rural settlement of Chedworth, Gloucestershire at national grid reference SP 05511 11627 around 15km southeast of Cheltenham. The dwelling is a tow-storey building with other residential dwellings and mature trees surrounding it. Within the wider landscape there are a number of deciduous woodland blocks in a 500m radius, along with the ancient woodland of Burfords Grove 1.6km to the north. There is a mix of pastoral and arable fields making up the rest of the landscape.

Figure 1. Location of the proposed development

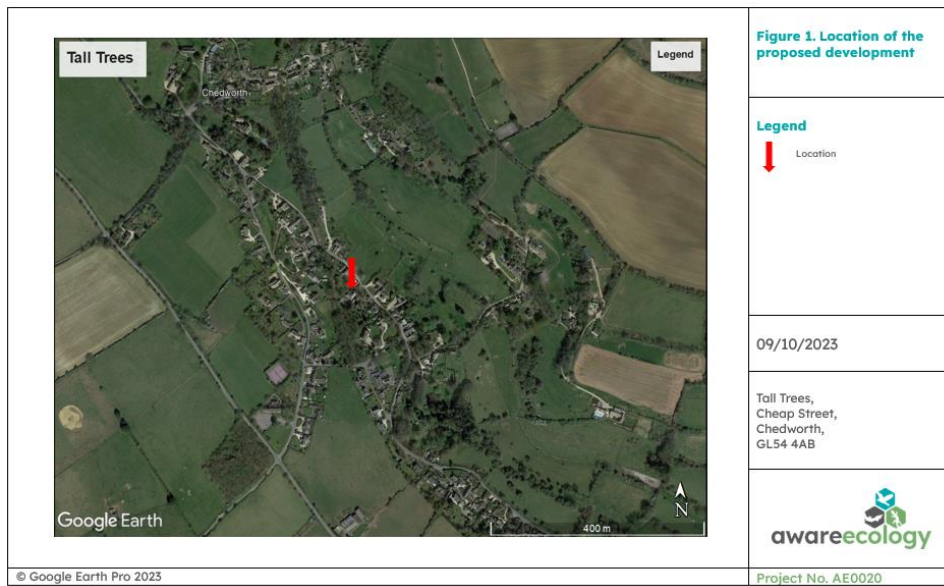


Figure 2. Redline boundary of the proposed development



Figure 3. External overview of the property (left – southwestern aspect, right – eastern aspect)



1.3 Previous Survey Effort

A Preliminary Roost Assessment (PRA) was previously undertaken at the site in 2023 by Ecology be Design, with a report dated August 2023 being submitted to the LPA. The surveys found that:

“There are multiple crevice features beneath the lifted tiles and at the eaves across all elevations of the house that could provide suitable roosting opportunities for bats. There are also various potential access points along the eaves that could provide access into the loft space. To conclude, the building is considered to be of moderate potential to support roosting bats.”

As a result of this survey two emergence/re-entry surveys must be undertaken, with a third undertaken should bats be discovered.

Please refer to the PRA Report for full details.

1.4 Legislative / Planning Context

The legislation (outlined in Section 5), combined with the *National Planning Policy Framework 2018* and local councils’ own planning policies (including their BAP), places a further obligation on Local Planning Authorities (LPA) to consider impacts on biodiversity when assessing any development proposals. Specifically, they need to ensure that impacts on any protected species are adequately assessed and, where necessary, addressed with suitable avoidance, mitigation, or compensatory measures to maintain favourable conservation status of the species. This means that sufficient data is required to categorise the type and size of any roost, sett, breeding, or resting area (*etc.*) affected by the development proposal prior to seeking planning consent, so that the LPA can consider this as part of their decision-making process.

1.5 Scope of Use

Aware Ecology has prepared this document for the sole use of the commissioning client stated above and it may not be reproduced or relied upon by any other party other without the prior and express written permission of Aware Ecology.

The findings contained within this report are based on conditions observed at the time of survey, and updated advice should be sought if more than two years has elapsed.

2 METHODS

2.1 Nocturnal Surveys

Two dusk emergence surveys were carried out on the 25th August 2023 and 14th September 2023.

The surveyors were positioned at vantage points around the property to observe all potential bat access/egress points, as marked on the site plan below. Each surveyor was equipped with a hand-held bat full spectrum recording bat detector and an infra-red camera was positioned on the northeast and southwest aspects of the building to further aid visual detection of bat emergence and foraging behaviour. The night vision aids (NVAs) allow any emerging bats from 45mins after sunset to be detected and provide a more detailed coverage of the site than just human surveyors could provide.

Figure 4. Position of surveyors/IR during nocturnal surveys



The dusk surveys commenced approximately 15 minutes before sunset and continued until approximately 1.5 hours after sunset to maximise the likelihood of detecting both early- and late-emerging bat species. Precise timings and weather conditions are summarised in the table below.

Table 1. Nocturnal survey conditions

Item	Dusk Survey	Dusk Survey	
Date	25/08/2023	14/09/2023	
Start Time	19:56	19:10	
Sunset/Sunrise Time	20:11	19:25	
End Time	21:41	20:55	
Weather Conditions	Temperature (°C)	14	16
	Cloud Cover (1-8 Okta)	6	8
	Rain	Light Rain	Dry
	Wind (1-12 Beaufort)	2	1

2.2 Survey Team

The survey and assessments were led by Daniel Howgego, an ecologist with 5 years of experience in the ecological consultancy industry. He is accredited under the Natural England Class 2 survey licence for bats of an experienced ecologist. He was supported by Robbie Caskey who has 3 years of bat survey experience along with Alice Thorne and Jacob Buxton who have 2 years of bat surveying experience.

As a member of the Chartered Institute of Ecology and Environmental Management (CIEEM) he is bound by their professional standards and code of conduct, he is also appropriately experienced for the assigned tasks based on the CIEEM competency framework (CIEEM, 2013).

3 RESULTS

3.1 Nocturnal Surveys

There was a moderate abundance of bats recorded during the nocturnal surveys with 5 species recorded (see table 6 below). The major activity was by common (*Pipistrellus pipistrellus*) which were foraging and over the property and around the neighbouring gardens behind for a large portion of the survey. Only common pipistrelle (max x2) were seen emerging from the property, with the emergence location on the northwest aspect of the property (see figure 5). The other species recorded passing and/or foraging within the site were noctule (*Nyctalus noctula*), natterers (*Myotis nattereri*), brown long-eared (*Plecotus auritus*) and lesser horseshoe (*Rhinolophus hipposideros*).

Therefore, due to the species recorded and the activity levels the site is of high conservation importance so should be managed so to avoid excess light spill over into areas that bats may use for roosting and foraging.

Table 2. Results of the nocturnal survey. Surveyor locations, bat activity and emergence/re-entry points are shown in figure 6 below.

Survey Date	Survey Time	Bat Activity Recorded	
Dusk			
25/08/2023	19:56 – 21:41	Emergence	x2 common pipistrelles seen emerging from beneath tiles on northwest aspect.
		Foraging and Commuting	High levels of foraging activity of common pipistrelles were recorded around the property and the neighbouring gardens. There was also low foraging/commuting activity of noctule, natterers and brown long-eared bats around the site.
Dusk			
14/09/2023	19:10 – 20:55	Emergence	No bats were seen emerging.
		Foraging and Commuting	Moderate levels of foraging/commuting activity of common pipistrelles were recorded around the property and the neighbouring garden. There was also low foraging/commuting activity of noctule around the site, plus the occasional pass of lesser horseshoe and brown long-eared bats.

Figure 5. Position of surveyors/IR during nocturnal surveys and bat activity directions



3.1.1 Evidence of Bats

There was a maximum of 2 bats recorded emerging from under the tiles during the first dusk survey. Therefore, it is confirmed that the property is by roosting bats (common pipistrelle), as such a precautionary working method statement (PWMS) will be required prior to the works commencing.

The site is collectively considered to provide high-quality roosting habitat for bats, whilst the surrounding landscape also offers high-quality foraging and commuting habitat.

Table 3. Summary of Daytime Assessment Results

Structure	Survey Findings	Assessed Bat Roost Potential
Domestic Dwelling	Maximum x2 common pipistrelles emerged from NW aspect.	Confirmed

3.2 Birds

The residential dwelling provides minimal opportunities for nesting birds (swallows, swifts, small passerines etc.), but there are many other suitable areas within the wider landscape. There were no signs of active nesting during the surveys.

The surrounding landscape does offer suitable foraging habitat for barn owls. However, there was no suitable potential for breeding barn owls on site.

4 EVALUATION AND RECOMMENDATIONS

4.1 Limitations to this Evaluation

The surveys were undertaken by an experienced ecologist following industry-standard good practice methodology.

The survey timings were within the suitable period to identify nesting birds and roosting bats (all surveys were within the optimal period of May to August/September inclusive). Although a third survey wasn't undertaken due to time constraints within the season and weather conditions, this isn't thought to have negatively impacted the assessment of the property.

Based on the conditions encountered during the fieldwork and the results achieved, the survey is considered to present a robust assessment of the likelihood of use by roosting bats, and sufficient to inform mitigation requirements for the current proposals (demolish the existing conservatory and replace with a side extension, as well as separate the loft space into two sections with a roof light splitting the areas apart. There is also a proposal to remove the existing solar panels from the southwestern roof aspect and replace with a larger number of modern panels). No data search was undertaken as current proposals suggest no land will be lost or linear features severed. The overall impact on biodiversity is likely to be localised and of low significance. It is very unlikely that the development will have any impact outside the footprint of the works. However, it should be noted that whilst every effort has been made to provide a comprehensive description and survey of the site, no investigation could ensure the complete characterisation and prediction of the natural environment during a 'snapshot' study.

4.2 Likelihood of use by Protected Species

Based on the survey results following best practice, the property is confirmed to be used by day roosting bats. There is confirmed to be a small number of non-breeding common pipistrelle bats (maximum 2 individuals). All bat roosting sites are associated with external crevices below the roof tiles.

There was no evidence of use by other protected species during the surveys.

4.3 Predicted impacts of the Proposed Development

4.3.1 Bats

The current proposal is to demolish the existing conservatory and replace with a side extension, as well as separate the loft space into two sections with a roof light splitting the areas apart. There is also a proposal to remove the existing solar panels from the southwestern roof aspect and replace with a larger number of modern panels. This would result in minor structural differences internally and minor alterations to the roof in small, specific regions of the property. Most of the roof tiles will be left in situ, with only a few small sections planned to be removed.

The evidence from the survey would suggest that there may be minimal disturbance to any bat roosts, with the area where the bats emerged from being on the opposite side of the property to where the works are occurring. The roost type and feature type are replicated over the entirety of the roof; however, the best crevice features are on the northwestern aspect which are not being impacted by the works. It is anticipated that the property will continue to be used by the common pipistrelle bats (and all other species) during and following completion of the works, due to large sections similar roosting locations being left in place.

It is also recommended that works take place during the winter months when bats are more likely to be absent to avoid disturbance, although this should be confirmed by the appointed ecological clerk of works (Aware Ecology).

The works would have no impact on the designated sites for bats that fall within 10km of the site, but there could be some indirect effects from the installation of new external lighting on possible bat flight lines by local bats around the site, and this is discussed further in the mitigation section that follows.

4.3.2 Birds

Any potential bird nesting activity should be checked by an experienced ecologist before work commences should it occur within the nesting period (March to August inclusive). The erection of bird boxes nearby could also limit the chances of birds nesting within the dwelling.

4.3.3 Other Species

The proposed works are limited to the property itself, as such no other species are likely to be impacted by the works. The site is also not designated for its wildlife interest at an international, national, or local level and no legally protected plant species were identified or are likely in the habitats encountered.

4.4 Further Surveys and EPS Licensing

4.4.1 Bats

During the nocturnal surveys there was a maximum of 2 emergences recorded on the first survey, with no emergences during the second survey. This suggests the use of the property as a day roost by non-breeding individuals. The works will also have minimal impact on suitable roosting areas, with the section the bats emerged from not being impacted by the works. Therefore, a PWMS will be required to allow any works to the roof to commence, this is required to ensure appropriate measures are undertaken to minimise potential disturbance should any bats be present elsewhere on the property. It is recommended this is written up and the works are completed during the same season/year, or at the latest, before the following bat survey season commences, which in this instance would be May 2024.

Outline mitigation and compensation enhancements directly associated with the roost itself are as follows:

- Two bat boxes should be fitted to an appropriate location prior to works commencing. This will provide provisional roosting space for any bats encountered during the works. These boxes will be installed at c. 5 metres above the ground facing in south-westerly or south-easterly directions to receive full sunlight for at least part of the day, have open flight access and be protected from night-time illumination. The above given bat box usually last c. 25 years and must be left in-situ after completion of the development.
- The bat ecologist will provide a watching brief while key areas (within near proximity of the known roost) of the roof tiles are stripped by hand.
- All contractors working on the proposed development must be briefed by the bat ecologist named in the PWMS on the legal protection afforded to bats and their places of shelter and on how to proceed if a bat is discovered during the work (*if a bat is discovered at unsupervised times, work will stop immediately, and the licensed ecologist will be called for advice. This advice may include leaving the bat to disperse on its own accord or waiting for a licensed handler to move the bat before works proceed*).

4.5 Mitigation / Avoidance Measures

4.5.1 Protected Species

4.5.1.1 Bats

As there is a confirmed day roost and the property has limited potential for hibernation use, works should commence within spring/autumn to avoid the full maternity season as outlined in the Bat Mitigation Guidelines (2004). This would be from 1st October to 31st March at a time when there is the least likelihood of bats being present, therefore minimizing the potential for disturbance and eliminate the risk of causing harm to nesting birds. It is also recommended that before works commence a minimum of two bat boxes are erected in a secluded area of the site to provide compensation during and after the work period.

There is a likelihood that bats roosting in the wider landscape will forage and/or commute over and around the site. The surrounding hedgerows/trees should be maintained to ensure flyways are available for the bats, along with implementing a lighting plan that reflects the Bat Conservation Trust Bats and Lighting in the UK guidance (2018). This includes ensuring the new extension is not directly lit, particularly at the eaves/roof level. If new lighting is required it would be good practice to use low-level lamps, hooded/cowled to avoid unnecessary light spillage and with motion sensors or timers to limit illumination to essential periods only, especially as Brown long-eared bats are particularly sensitive to impacts from artificial lighting. Provided artificial lighting is not inappropriately used during or post development than the proposals are considered small-scale and will not impact habitats beyond the site boundaries.

Breathable roofing membrane must not be used in any part of the roof that would be accessible to roosting bats, due to the significant risk of bat entanglement in the fibres of the material and associated mortality resulting from entrapment. If access is made available for bats to enter the internal elements of the roof, only traditional Type 1F felt must be used to line the roof.

There will likely be bats flying around the buildings at night during the late spring, summer and early-autumn months and it is possible that they could investigate any new crevices or cavities that are exposed on the walls/roof during the building works. Any such holes or gaps must be securely covered/blocked at the end of each day's work to avoid bats having the opportunity to use them for shelter.

In the unlikely event that a bat is encountered, work in that area must cease immediately and advice must be sought from a licenced bat ecologist before resuming.

4.5.1.2 Birds

Any works that may impact nesting birds should be completed outside of the breeding bird season (March to August inclusive) or after a pre-works survey/search by a suitably experienced ecologist. The wider landscape contains other examples of suitable nesting habitats; therefore, any negative impacts are unlikely to extend beyond the site. The presence of nesting birds on site is considered likely.

If any active nests are found these will be protected, along with an appropriate buffer zone of 10m, until the nesting is complete, and the young have fledged.

4.5.2 Toolbox Talk for Contractors

As bats are present within the property and the surrounding landscape, it would be good practice to have a toolbox talk for all contractors with a licensed bat ecologist before they start work on the extension to make them aware of the need to avoid possible harm to the bats. This would also help to ensure that they know what to do in the unlikely event that a bat is encountered during the work should a licenced bat ecologist not be present.

Additional toolbox talks should also be given to make contractors aware of the other protected species/nesting birds present on site, to ensure they know what signs to look for during work and what process to follow should any species be encountered.

4.5.3 Precautionary Measures

Construction work should be limited to daylight hours. Prohibiting night-time working will protect the site from the potential negative effects of noise, activity, and lighting.

4.6 Ecological Enhancement

Planning policy requires that all development proposals seek to achieve a net gain for biodiversity rather than simply no net loss.

4.6.1 Biodiversity Net Gain

There are no floral habitats onsite that will be removed as part of the planned works, therefore any planting as part of the works will lead to a net gain.

4.6.2 Species Enhancement

The site will be enhanced for nesting birds and roosting bats by the erection of two artificial bird boxes, one swift box and two bat boxes on suitable features at the perimeter of the site or on the buildings themselves. A variety of durable, woodcrete bat and bird boxes, including maintenance free boxes suitable for trees (see Appendices 7.3 and 7.4).

The bat boxes will be placed on the south-east to south-west aspects ideally, with linear features nearby, to allow bats undisrupted dispersal to local foraging habitat, and in positions where the entrance is not artificially illuminated at night (enabled by the provision of the 'dark corridor'). Boxes will be positioned a minimum of 3m from the ground.

The bird boxes will also be in secluded positions, ideally within dense cover and at a minimum height of 3 metres from ground level. Other boxes such as house sparrow and swift specific boxes should be placed in accordance with their guidelines, ideally around the eaves of the new dwelling. If possible, an artificial swallow cup could also be erected high up and inside a building such as a garage or out-building which allows constant easy access.

Other bat compensation could consist of; ridge tiles, integrated/external bat boxes and bat bricks suitable for crevice dwelling species depending on the final building design. If access is made available for bats to enter the internal elements of the roof, only traditional Type 1F felt must be used to line the roof.

It is also recommended that insect bricks (or similar) are incorporated into the design or placed within the site, along with the use of hedgehog highways along any sections of solid fencing.

Table 4. Compensation enhancement measures

Species	Enhancement Type
Bats	- 2x Integrated/external bat boxes ¹ - Bat bricks/ridge tiles
Birds	- 2x Open fronted & enclosed boxes - 1x Swift/Swallow box ²
Lighting	- Keep it to essential lighting only that is directional rather than floodlights - Use motion sensors/timers and hoods to limit unnecessary illumination

¹ To be placed following guidance from Bat Conservation Trust Bat Box Information Pack (2018) e.g. at least 4m high facing south, south-east or south-west. Summer maternity roosts in the northern hemisphere often have a southerly or westerly aspect for maximum solar heating. Male roosts and hibernation sites typically have a northerly aspect (BCT 2020)

² Integral swift nest boxes to follow BS 42021:2022. Whilst Swallow nest cups should be sited high up and inside a building such as a garage or out-building which allows constant easy access

5 Legislation

5.1 Bats

All species of British bat are protected by The 'Wildlife and Countryside Act 1981' (as amended) extended by the 'Countryside and Rights of Way Act 2000' (CROW Act). This legislation makes it an offence to:

- intentionally kill, injure or take a bat;
- possess or control a bat;

- intentionally or recklessly damage, destroy or obstruct access to a bat roost; and
- intentionally or recklessly disturb a bat whilst it occupies a bat roost.

Bats are also European Protected Species listed on *Schedule 2* of the ‘*Conservation of Habitats and Species Regulations 2017*’ under *Regulation 41*. This legislation makes it an offence to:

- deliberately capture, injure or kill a bat;
- deliberately disturb bats in such a way as to be likely to (a) impair their ability to: (i) to survive, to breed or reproduce, or to rear or nurture their young, or (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate; or b), to affect significantly the local distribution or abundance of the species to which they belong; and
- damage or destroy a breeding site or resting place of a bat; and
- possess, control, transport, sell, exchange a bat, or offer a bat for sale or exchange.

All bat roosting sites receive legal protection even when bats are not present.

Where it is necessary to carry out an action that could result in an offence under the ‘*Conservation of Habitats and Species Regulations 2017*’ it is possible to apply for a European Protected Species (EPS) licence from Natural England (NE). Three tests must be satisfied before this licence (to permit otherwise prohibited acts) can be issued:

- *Regulation 53(2)(e)* states that licences may be granted to “preserve public health or public safety or 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(9)(a)* states that a licence may not be granted unless “there is no satisfactory alternative”.
- *Regulation 53(9)(b)* states that a licence cannot be issued unless the action proposed “will not be detrimental to the maintenance of the population of the species concerned at a favorable conservation status in their natural range”.

5.2 Birds

All species of bird are protected under *Section J* of the ‘*Wildlife and Countryside Act 1981*’ (as amended). The protection was extended by the ‘*CRoW Act*’.

The legislation makes it an offence to intentionally:

- kill, injure or take any wild bird;
- take, damage or destroy the nest of any wild bird while that nest is in use or being built; or
- take or destroy an egg of any wild bird.

Certain species of bird are listed on *Schedule 1* of the ‘*Wildlife and Countryside Act 1981*’ (as amended) and receive protection under *Sections 1(4)* and *1(5)* of the Act. The protection was extended by the ‘*CRoW Act*’. The legislation confers special penalties where the above-mentioned offences are committed for any such bird and makes it an offence to intentionally or recklessly:

- disturb any such bird, whilst building its nest or it is in or near a nest containing dependent young; or
- disturb the dependent young of such a bird.

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7 APPENDIX

7.1 Site Photos

Picture 1. Bat roost locations (red outline)



Picture 2. Sections of property where works are proposed (left - replacement solar panels, right - side extension)



7.2 Recommended Bat Boxes

The provision of bat boxes is a recommendation as they create an enhancement for biodiversity on the site, as well as replace any lost roosts during the construction phase.

- *Ecostyrocrite Crevice and Hollow Bat Boxes* (this would be the preferred option). These should be installed where they are sheltered from the wind but unshaded for most of the day at a mix of heights from 3m-5m. Summer maternity roosts should be on a south-easterly to south-westerly aspect. There should be a clear flight line into the box, so ensure nothing is impeding the entrance to the box. Different bat species prefer different types of boxes so a mix would provide more chances of use.
- *Schwegler Bat Boxes*. These should be installed as above.
- *Bat Block*. These should be positioned within the wall during construction. Aim to position South or West facing for a summer maternity roost or north facing for a winter hibernation roost.

