



Ecological Impact Assessment (ECiA) for Bats

Document prepared for: Blake Architects Ltd

Newbold Farm Barn,
Duntisbourne Abbots,
Gloucestershire
GL7 7JN

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Methods used to prepare this report, including those carried out in the field followed The Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct.

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1 INTRODUCTION

- 1.1 This Ecological Impact Assessment is intended to ensure that bats are not harmed, and no offence committed under the Conservation of Habitats and species regulations 2017 (as amended) and the Wildlife and Countryside Act 1981 (as amended) during proposed development works at Newbold Barn, Duntisbourne Abbots, Gloucestershire GL7 7JN. A comprehensive Preliminary Roost Assessment of the structure was undertaken in March 2022 by Herdwick Ecology and subsequent nocturnal bat survey effort completed by the same consultancy in May and June. This ECiA should therefore be read in conjunction with the Preliminary Roost Assessment Report provided by Herdwick Ecology – report number 251/R1, dated August 2022. An overview of methodology and survey results are included within this document.
- 1.2 Newbold Barn is a currently unused Tithe barn located on the grounds of Newbold Farm (Grid Reference: SO96960793). The site is located within a semi-rural village setting, surrounded by light residential developed, associated vegetated gardens and scattered trees. Development proposals are described as the conversion of an existing Tithe barn to residential accommodation.

Bats

In England and Wales, bats and their roosts are protected under the Conservation of Species and Habitats Regulations 2017 (as amended) and the Wildlife & Countryside Act 1981 (as amended). Taken together, this legislation makes it an offence to:

- Deliberately capture (or take), injure or kill a bat
- Intentionally or recklessly disturb a group of bats where the disturbance is likely to significantly affect the ability of the animals to survive, breed, or nurture their young or likely to significantly affect the local distribution or abundance of the species whether in a roost or not
- Damage or destroy the breeding or resting place of a bat
- Possess a bat (alive or dead) or any part of a bat
- Intentionally or recklessly obstruct access to a bat roost
- Sell (or offer for sale) or exchange bats (alive or dead) or parts of bats

A roost is defined as being ‘any structure or place that is used for shelter or protection’ and since bats regularly move roost site throughout the year, a roost retains such designation whether or not bats are present at the time.

2 Site Assessment Summary

Daytime Survey Results

- 2.1 During a Preliminary Roost Assessment undertaken in March 2022, no bats were observed though scattered and concentrations of bat droppings were discovered throughout the barn structure; these included general scattered droppings, an accumulation of around 100+ located beneath the ridge beam at the barn’s eastern extent, and a small accumulation found within a crevice in the northern wall. The droppings were considered characteristic of two species of bat – serotine and *Pipistrellus* sp.
- 2.2 During updating building inspections undertaken in June 2022, additional fresh droppings (<10) were found in the same location beneath the ridge. The droppings were considered to be from a serotine bat. Therefore, **three nocturnal surveys coupled with static monitoring were undertaken on the building** to characterise use of the structure by bats.

Nocturnal Bat Survey Results

- 2.3 During the nocturnal bat survey effort, activity from four species of bat – common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *P.pygmaeus*, noctule *Nyctalus noctula*, and serotine *Eptesicus serotinus* - was recorded from the wider environment. Bat emergence results comprised a maximum count of two common pipistrelle emerging from a single location beneath tiles cladding the roof, and three serotine bat emerging from beneath ridge tiles at two locations of the ridgeline. No further emergence/re-entry by bats was observed.

3 Impact Assessment

Evaluation of Bat Roosts on Site

- 3.1 The set of surveys conducted at Newbold Barn confirmed the building to support day roosts for maximum counts of three serotine *Eptesicus serotinus* and two common pipistrelle *Pipistrellus pipistrellus*. **Table 1** provides a value of each roost in accordance with *Reason & Wray, 2023*¹.

Table 10: Value of bat roosts at Newbold Barn

Species	Rarity	Roost Type	Value
Common pipistrelle	Common	Day roost	Site
Serotine	Common	Day roost	Local

¹ Reason, P.F. & Wray, S. (2023) UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. CIEEM, Ampfield.

Roost Impact Assessment

- 3.2 The proposed plans at Newbold Barn comprise the conversion of an existing structure to a residential dwelling, to include re-roofing of the structure. Potential impacts to bats therefore include damage or destruction of a roosting site, with potential for disturbance, injury or killing of bats in their roosts during works.
- 3.3 In the absence of mitigation, the works would therefore result in an offence under the *Conservation of Habitats and Species Regulations (2017)*.

European Protected Species Mitigation Licence

- 3.1 A Protected Species Mitigation Licence for development will be required for works to lawfully proceed. A full European Protected Species Licence (EPSL) must be used in this instance. For full applications, Natural England operates a 30-working day target response time, though it should be noted that this can vary depending on their current workload. Therefore, applications should be submitted in good time ahead of the proposed start date for works, following successful planning approval. Natural England expect three tests to be satisfied before a EPSL can be issued. These tests are as follows:
- There is no satisfactory alternative.
 - The action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.
 - The action authorised preserved public health or public safety or other imperative reasons of overriding public interest including those of the social or economic nature and beneficial consequences of primary importance for the environment.
- 3.2 Regarding the derogation test '*The action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range*', the following consideration has been given:
- The mitigation strategy set out in this report has been designed in such a way to provide future roosting provisions specifically for these species, and to promote enhancements for other bat species in the area.

Mitigation and Compensation Measures

- 3.3 Using data collected from nocturnal surveys in May and June 2023, based on the building supporting day roosts for a maximum count of 3 serotine and two common pipistrelle, the recommended RAMs and Mitigation Strategy in support of the EPSL will include the following:

3.4 Before any aspect of the roof can be impacted, such as the removal of flashing, fascia, soffit, tiles etc., a bat-licensed ecologist must:

- Prior to stripping or any aspect of the roof, three Schwegler 1FF (or similar) bat boxes should be installed on a mature tree or building within the grounds of the property. Bat boxes will be installed no less than 4m from ground level and must not face in a northerly direction. The bat boxes will provide provisional roosting space for any bats that are found during the licensed supervision (i.e. roof strip). They will also provide suitable roosting habitat for other bats in the area.
- Prior to the commencement of the proposed works, a bat-licensed ecologist will carry out a final inspection of the building to check for the presence of any bats and to determine if the building has changed in such a way that roost status may have changed. If any bats are found, a program of passive measures should be carried out (to be described fully in the EPS licence application / Method Statement).
- All contractors working on the proposed development must be briefed on the legal protection afforded to bats and their places of shelter and on how to proceed if a bat is discovered during the course of the work via a toolbox talk undertaken by a suitably experienced and qualified ecologist.
- Works must be undertaken slowly, by hand and with care. This includes taking such precautions as removing roof tiles carefully, checking beneath for the presence of bats before being discarded. A licenced bat worker should carry out a watching brief when critical works are carried out, such as when tiles and other key roofing components are removed from the roof. The client will provide secure scaffolding or a cherry picker in order for the ecologist to safely inspect the roof.
- The supervising ecologist bat worker will continue the watching brief until the building is declared free of bats. Any bats found during this period will be safely removed by the ecologist and placed in the bat box. If in the unlikely event a bat is discovered after the ecologist is no longer supervising, works should halt immediately and Cotswold Environmental Ltd senior ecologist Tom Charlton (or any other appointed ecologist responsible for the licensed works) at Cotswold Environmental Ltd should be contacted for advice. If you are not able to reach the ecologist, then contact The Bat Conservation Trust: 0845 1300 228. Never handle bats for legal and Health & Safety purposes.

Compensation Enhancements

- 3.5 It is considered that that key compensation and mitigation elements linked to such a licence to ensure the favourable conservation status (FCS) of bat species concerned (Regulation 53(9)(b)) should include the following mitigation strategy:
- 3.6 Only traditional Type 1F bitumen roofing felt or the recently approved TLX bat safe can be used for bat mitigation which will be a condition of the EPSL. Breathable membranes not approved by Natural England pose a risk to bats due to entanglement and therefore **must not be used** in conjunction with bat mitigation proposals.
- 3.7 Additionally, any timbers used in conjunction with the works must be untreated to prevent any form of toxic impacts to bats.
- 3.8 Receptor bat boxes installed as part of the mitigation strategy will be retained following works to provide additional roosting space for local bat populations.

Common Pipistrelle Bat Mitigation

- 3.9 To compensate for the loss of a day roost for two common pipistrelle, two modified bat roof tiles will be incorporated into the development scheme. These will be evenly spaced and positioned approximately 0.75m below the ridge tiles. There are a number of options with regards to bat tiles; they may include the following:

Modified Slates

- 3.10 Slate modifications are made from code 6 lead with a prising 20mm gap, providing adequate access / roosting space for crevice-dwelling bats. Bat access slates on all roof pitches should be situated approximately 0.75m below the top ridge tile.

Bat Tile (non-slate)

- 3.11 A variety of alternative options are available for bat tiles. They can be purchased from companies such as NHBS: www.nhbs.com. Bat tiles should be situated approximately 0.75m below the ridge tile.

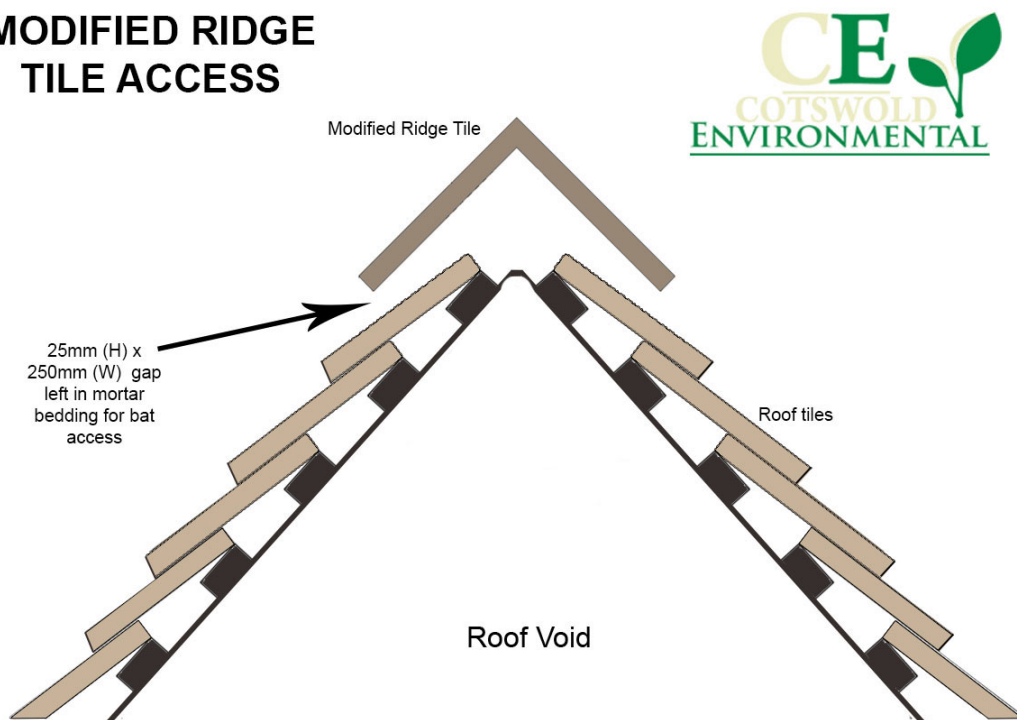
Serotine Bat Mitigation

- 3.12 Serotine bat have a strong association with buildings, and are known to utilise crevices and holes including wall cavities, gaps between felt and roof tiles, and beneath raised ridge capping for roosting².

² Bat Conservation Trust (2021) {accessed online}
https://cdn.bats.org.uk/uploads/pdf/About%20Bats/serotine_11.02.13.pdf?v=1541085183

They may also utilise internal timbers of a roof structure, though do not generally fly within roof voids³. Notably, serotine typically utilise buildings with high gables. Mitigation proposals for this species at Newbold Barn will therefore comprise the inclusion of 2 x modified non-access ridge tiles to be installed along the ridgeline of the main dwelling. This will be achieved by leaving out the bedding mortar or by overlapping ridge tiles to form a natural gap (access holes will be created on either side of each ridge tile for visibility and to invite bats from either side of the roof pitch). Ridge access holes will be 250mm x 25mm.

MODIFIED RIDGE TILE ACCESS



3.13 The above mitigation and compensation measures are considered both adequate and proportionate in context to the site and survey findings. Proposals for bat mitigation and compensation are shown in Figure 2.

Compliance Check

3.14 Once completed, bat mitigation features are to be checked by an appropriately licensed and experienced bat consultant prior to works being completed so that changes can be made if necessary.

³ Reason, P.F. and Wray, S. (2023). *Bat Mitigation Guidelines*. Chartered Institute of Ecology and Environmental Management, Ampfield.

Mitigation will also need to be signed-off on completion by the licensed bat consultant. If required, a compliance letter can be provided to Cotswold District Council at their request.

Nocturnal Lighting Scheme

- 3.15 A low-level lighting scheme must be implemented during and after construction to avoid indirect disturbance to bats and other nocturnal animal species that may exploit local habitats. Measures must be taken to ensure nocturnal animals are safeguarded from inappropriate use of light and noise throughout the hours of night during the construction period, as well as to protect important commuting corridors for bats. Any external lighting installed as part of the development must be used in accordance with the most recently published guidelines - Guidance Note 08/23: Bats and Artificial Lighting⁴.
- 3.16 Sensitive lighting strategy measures during the construction period are as follows:
- Works must not be carried out after dusk and must not commence until after dawn.
 - Generators and machinery that emit significant noise levels must not be left to run after dusk.
 - LED lighting sources must be used, which generally have a narrower and more directional beam.
 - Light spill must be controlled and if lighting is required at night, hooded shields must be fitted to prevent spill onto nearby habitats that are likely to support wildlife, including nearby trees and hedgerows.
 - Lighting must not be directed towards any bat or bird compensation features.
- 3.17 In addition to the above, when selecting appropriate external lighting, the following specifications must be taken into consideration:
- Any external lighting incorporated into the proposed development should be LED luminaires due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
 - Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats⁵.
 - All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used⁶

⁴ <https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/>

⁵ Stone, E.L. (2013) *Bats and lighting: Overview of current evidence and mitigation*

⁶ Bat Conservation Trust & Institute of Lighting Professionals (ILP) 2023. *Guidance Note 08/23: Bats and artificial lighting in the UK*. Bats and the Built Environment Series.

Conclusion

- 3.18 Mitigation and compensation measures detailed within this document will ensure the favourable conservation of bats. Providing that these are implemented as part of the proposed development at Newbold Barn, residual impacts upon bats onsite will be **NEUTRAL**.

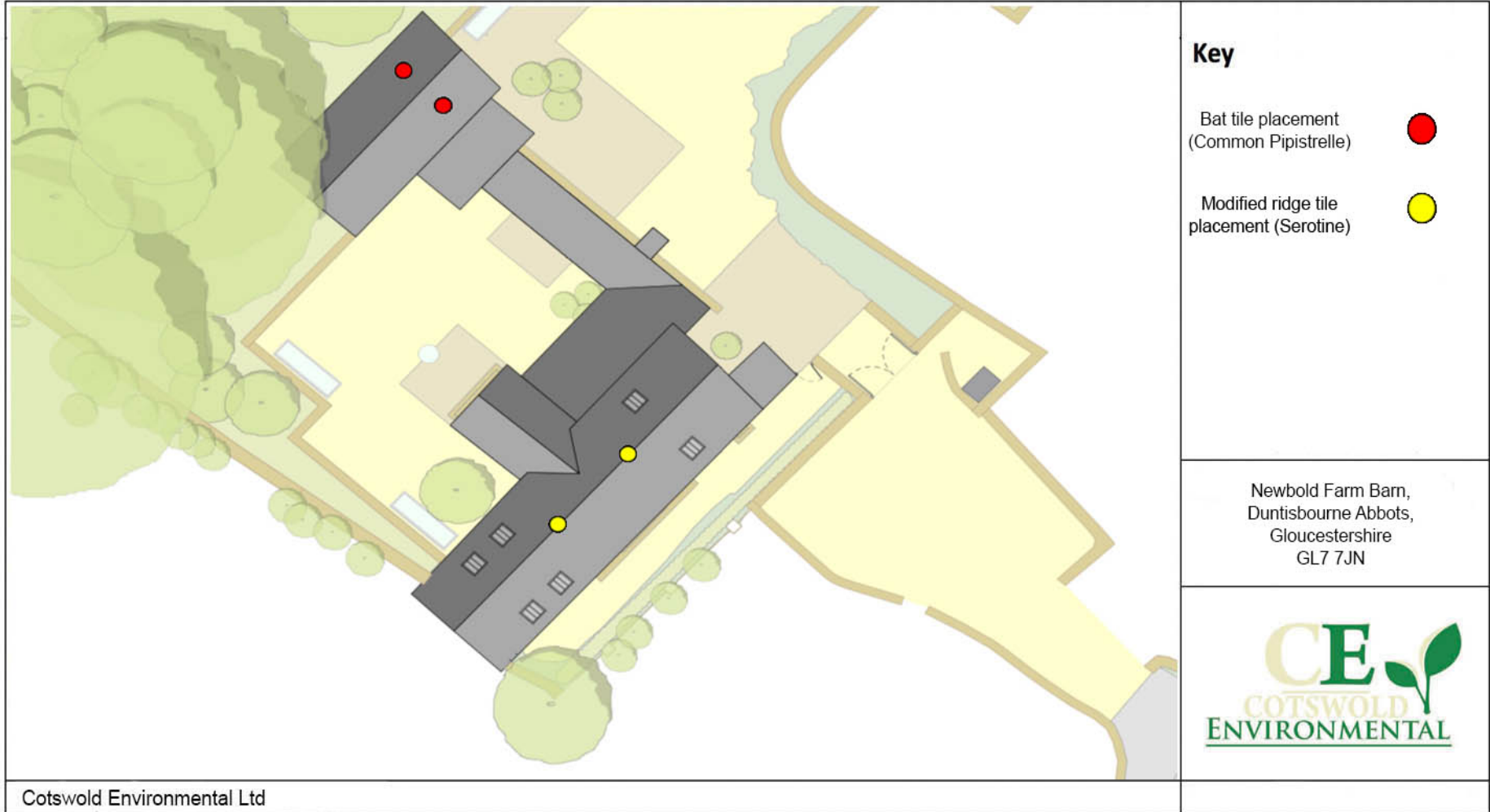


Figure 1: Bat Mitigation Map