



# **Preliminary Ecological Appraisal and Nocturnal Bat Survey Report**

Report prepared for: Teresa Clarke

Cherry Tree Cottage  
Coln St Aldwyns  
Gloucestershire  
GL7 5AD

**August 2023**

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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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|------------------|--|
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**Relevant Surveyor Experience**

**Jason Skinner:** 7 years professional ecological experience, primarily involved with bats and reptiles through consultancy and assisting on research projects. Experienced with small-scale and large-scale development projects and involvement on multiple bat mitigation licences. Co-author of peer-reviewed research papers on reptiles and amphibians. Member, BBCARG and Wiltshire Bat Group.

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# 1 INTRODUCTION

- 1.1 This report provides the results of a Preliminary Ecological Appraisal, as well as subsequent nocturnal bat survey effort, undertaken at Cherry Tree Cottage, Coln St Aldwyns, Gloucestershire GL7 5AD (central Ordnance Survey (OS) Reference SP 14430 05192).
- 1.2 Development proposals are described as;
- The raising of the roof to the single storey element in order to make into two storey
  - Internal alterations, re-roofing and the addition of a dormer window to the garage annexe
- 1.3 A planning application will be submitted to Cotswold District Council in due course (See Fig 2. Site Map).
- 1.4 The findings included in this report are based on a survey undertaken during August 2023 by Cotswold Environmental Ltd. The purpose of the survey was to undertake an appraisal of the site for its potential ecological value to notable and protected wildlife, and to look for evidence of such species. The survey results provide information to determine the likely ecological impact the proposed development will have on wildlife species, and to inform the level of further survey effort and mitigation required to comply with relevant nature conservation policies and legislation. The evaluation and findings in this report can be used by Cotswold District Council in their view of a planning application. Survey results detailed within this report should be considered valid for a period of 18 months from the survey date.
- 1.5 The National Planning Policy Framework (NPPF) (July 2021) sets out the government planning policies for England and how they should be applied. Chapter 15: Conserving and Enhancing the Natural Environment, is of particular relevance to this report as it relates to ecology and biodiversity<sup>1</sup>. The Government Circular 06/2005, which is referred to by the NPPF, provides further guidance in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system.
- 1.6 The property is located within a rural area 1.3 km east of Coln St. Dennis and 4 km south-west of Northleach town centre. The site location is shown in Fig. 1.

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<sup>1</sup>[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1005759/NPPF\\_July\\_2021.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf)

- 1.7 All survey and assessment work was completed in accordance with official assessment guidelines<sup>2</sup> and largely followed that recommended by the Chartered Institute for Ecology and Environmental Management (CIEEM)<sup>3</sup> and follows the British Standard Code of Practice<sup>4</sup>.

#### Survey Objectives

- To determine suitability for protected species
- Ascertain evidence of protected species
- Determine potential ecological impacts the proposed development will have on protected species.
- Inform the level of further survey effort that is required.

## 2 METHODOLOGY

### **Desk Study**

- 2.1 A records search was undertaken using freely available desktop resources such as the Multi-Agency Geographic Information for the Countryside<sup>5</sup> (MAGIC) website. MAGIC was used to search for records of designated sites, habitats and granted European Protected Species Licenses (EPSLs) within a 2km radius. Google Earth<sup>6</sup> was also used to study the nearby landscape.

### **Field Study**

- 2.2 Ecological consultant Jason Skinner (NE Class 2 Bat Survey licence 2020-50774-CLS-CLS) carried out a field visit on Monday 7<sup>th</sup> August 2023.
- 2.3 The field visit involved a walkover using visual encounter survey techniques. The dominant vegetation structure was assessed, allowing habitats on site to be valued for their ecological importance to protected wildlife. Binoculars were also used to scan for features likely to support protected species. All protected species were considered during the assessment and all wildlife species were recorded. The work was completed largely following methodologies set out by the Chartered Institute for Ecology and Environmental Management (CIEEM) and British Standard Code of Practice.

### Species

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<sup>2</sup> Collins J (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd edn. Bat Conservation Trust, London.

<sup>3</sup> CIEEM (2017) Guidelines for Ecological Report Writing. CIEEM, Winchester.

<sup>4</sup> British Standards Institution (2013) BS 42020:2013. Biodiversity – Code of practice for planning and development. British Standards Institution, London.

<sup>5</sup> Multi-Agency Geographical Information for the Countryside (MAGIC). Crown Copyright and database rights [2015]. Ordnance Survey 100022861. Available at: <http://www.magic.gov.uk/>

<sup>6</sup> [https://www.google.co.uk/intl/en\\_uk/earth/](https://www.google.co.uk/intl/en_uk/earth/)

- 2.4 All protected species were considered during the survey. Only those considered likely to utilise the site are mentioned in this report.

### Bats

- 2.5 Survey effort was completed in line with official assessment guidelines<sup>7</sup> and largely followed that recommended by the Chartered Institute for Ecology and Environmental Management (CIEEM)<sup>8</sup> and British Standard Code of Practice<sup>9</sup>. The assessment followed the standard methodology. The site was searched using visual encounter survey techniques. Potential bat movement corridors and movement barriers were assessed and noted. During the site visit, where possible, all suitable areas were examined for evidence of bats.

**Table 1: Guidelines summary for assessing potential bat roost suitability**

| Suitability     | Description of building, tree or structure   |
|-----------------|--|
| Negligible      | Negligible habitat features on site likely to be used by roosting bats   |
| Low             | A structure or tree with one or more potential roost sites that could be used by individual bats opportunistically. However, potential roost sites not suitable for larger numbers or regular use (i.e. maternity or hibernation). |
| Moderate        | A structure or tree with one or more potential roost sites that could be used by bats, but unlikely to support a roost of high conservation status.  |
| High            | A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time.                                       |
| Confirmed roost | Evidence of bats or use by bats found.   |

## Nocturnal Bat Surveys

- 2.6 One dusk nocturnal bat survey was carried out during August 2023 following recommendations from the preliminary survey. Survey effort was carried out by ecologists Tom Charlton MSc MRSB, Sarah Crossman, and Gavin Stewart.
- 2.7 Nocturnal bat survey effort was completed in line with official assessment guidelines<sup>10</sup> as well as interim guidance notes issued by the Bat Conservation Trust in May 2022<sup>11</sup>.

<sup>7</sup> Collins J (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd edn. Bat Conservation Trust, London.

<sup>8</sup> CIEEM (2017) Guidelines for Ecological Report Writing. CIEEM, Winchester.

<sup>9</sup> British Standards Institution (2013) BS 42020:2013. Biodiversity – Code of practice for planning and development. British Standards Institution, London.

<sup>10</sup> Collins J (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd edn. Bat Conservation Trust, London.

<sup>11</sup> Interim Guidance Note: Use of night vision aids for bat emergence surveys and further comment on dawn surveys Bat Conservation Trust, May 2022 [Online] [Accessed 1<sup>st</sup> June 2022] <https://cdn.bats.org.uk/uploads/pdf/Interim-guidance-note-on-NVAs-May-2022-FINAL.pdf?v=1653399882>

- 2.8 During the surveys, surveyors took up separate static positions 15 minutes prior to and 1.5 hours after sunset (see Site Map: Fig. 2). Visual observations of bats were noted, and bat species were identified using bat detectors. The information recorded included weather, timings, whether bats emerged or re-entered the building, direction of travel, species and activity e.g. foraging, commuting. Equipment used during the nocturnal surveys included Echo Meter Touch II recorders coupled to Apple tablets and heterodyne bat detectors.
- 2.9 Three infrared camera systems (SANNCE model) coupled with infrared lighting (Night Fox XB5 940 nm torches) was used to strengthen the survey data.
- 2.10 Recorded bat calls were analysed using Kaleidoscope 5.1.9i where required.
- 2.11 Temperatures were recorded onsite using an Elitech RC-51 Temperature Logger.

#### *Nesting Birds*

- 2.12 The survey also included an inspection for evidence of common nesting birds.

#### *Badger*

- 2.13 All habitats within the site boundary were inspected for badger *Meles meles* activity. Whilst on site, the search included evidence of:
- Scratching posts
  - Faeces
  - Latrines
  - Guard-hairs
  - Paw prints
  - Trackways

#### *Reptiles and Amphibians*

- 2.14 Habitats were assessed for their potential to support reptiles and amphibians, including great crested newt *Triturus cristatus*. Waterbodies typical of those utilised for breeding and foraging activity, and terrestrial refugia suited to sheltering and basking such as waste heaps and plastic/metal/timber sheeting were noted if present (see limitations). In addition, any dense vegetation including tall ruderal and scrub that is connected to hedgerows and linear tree features was inspected during the assessment.

#### **Limitations**

- 2.15 The absence of species does not preclude its presence. Wildlife can be cryptic, and some species are known to be transient and occupy new habitats on a regular basis.
- 2.16 Bat droppings deposited in or around the exterior degrade quickly due to weather. The presence of bats or their roost must not be disregarded in the absence of droppings.

- 2.17 Many bat species in the UK are crevice-dwelling bats and as such, are difficult to find during PRAs
- 2.18 For Health & Safety purposes the roofs of the buildings were assessed from ground level
- 2.19 Local biological records search results were not obtained.
- 2.20 No further limitations are associated with the survey.

### 3 RESULTS

#### Desk Study

- 3.1 The site lies within the Cotswolds Area of Outstanding Natural Beauty (AONB) although, according to the MAGIC website, no further statutory or non-statutory designated sites occur within a 2 km radius, the closest; Winson Meadows Site of Special Scientific Interest (SSSI), a 7.93 hectare site of biological interest and listed in the Cotswold District Local Plan 2001-2011 (online) as a Key Wildlife Site (KWS), exists 5.6 km to the north-west. Furthermore, no internationally designated sites for bat conservation exist within a 10 km radius of the site.

#### Granted European Protected Species Licences (EPSL) within a 2km radius

- 3.2 According to the MAGIC website, two EPS licences have been granted for bats within a 2 km radius of the survey site. These are shown in Table 2 below. No EPS licenses for GCN or other protected species exist within the same radius and no Class Survey Licence returns or positive Pond Surveys (2017-2019) for GCN were identified.

**Table 2: Granted EPSLs within 2km of survey site**

| Species   | Distance | Direction | Year Granted |
|-----------|----------|-----------|--------------|
| LHS       | 870 m    | East      | 2015         |
| CPIP, LHS | 970 m    | East      | 2019         |

CPIP = *Pipistrellus pipistrellus*, LHS = *Rhinolophus hipposideros*

#### Field Study

- 3.3 Weather conditions during the daytime assessment are shown in the below table. Temperatures were recorded onsite using an Elitech RC-51 Temperature Logger.



**Table 3: Weather conditions during Preliminary Ecological Appraisal**

| Date      | Start | Finish | Temp °C | Wind | Cloud % | Rain | Notes |
|-----------|-------|--------|---------|------|---------|------|-------|
| 7/08/2023 | 10:30 | 13:00  | 18      | Calm | 58      | Dry  | N/A   |

Surrounding Habitats

- 3.4 The property is located within a village setting, surrounded by low density residential development with gardens that feature scattered mature trees. A block of woodland exists at the western edge of the village and an extensive area of woodpasture and parkland to the west. The wider environment features a mosaic of arable fields and grazing pasture some of which are bordered by mature hedgerows and with further blocks of woodland throughout the wider agricultural landscape.

*Notable habitats within a 2 km radius:*

- Multiple blocks of Deciduous Woodland (Priority Habitat), the closest located 115 m to the west
- Two blocks of Ancient and Semi-Natural/Ancient Replanted Woodland (Ancient Woodland Inventory) the closest located 380 m to the west
- Extensive Woodpasture and Parkland (BAP Priority Habitat) located 220 m to the east
- Two areas of Floodplain Grazing Marsh (Priority Habitat), the closest located 1.4 km to the south
- The River Coln, located 160 m to the west

- 3.5 No priority habitats are found within or immediately adjacent to the site.

*Local waterbodies*

- 3.6 Through use of the MAGIC website, no ponds were identified within a 500 m radius of the site boundary.

Onsite Habitats

- 3.7 The survey area comprises the residential dwelling with surrounding garden and driveway. No standing waterbodies exist within the survey boundary and no ponds are to be destroyed or impacted by the proposed works. The individual habitat types recorded at the site are described under the sub-headings below, with the location and extent of each illustrated in the Habitat Map in Figure 1.

*Residential dwelling*

- 3.8 The surveyed building is a detached, stone-built dwelling comprising a main two storey element with an adjoining single storey element at the west facing elevation. The pitched roofs are clad in imitation Cotswold tile-stones and do not feature soffit boxes or fascia boards at the eaves. The building also features a conservatory with a pyramid roof clad in slate tiles at the rear elevation. Loft voids are present within the pitched roofs of both the two storey and single storey elements.

#### *Garage annexe*

- 3.9 The surveyed building is a stone-built structure located to the north-west of the residential dwelling, comprising a single storey garage and residential annexe with a pitched roof clad in imitation Cotswold tile-stones and featuring four skylights to the east facing roof aspect. The first floor of the building is found within the roof which features a pitched ceiling internally with accessible roof spaces at the eaves. The roof does not feature soffit boxes or fascia boards.

#### *Hardstanding*

- 3.10 A gravelled driveway covers the majority of the northern extent of the survey area and paved hardstanding exists near the elevations of the buildings.

#### *Amenity grassland*

- 3.11 Regularly mown amenity grassland covers the remaining survey area, surrounding the residential dwelling to the side and to the rear of the property. The short sward was dominated by perennial ryegrass *Lolium perenne* with white clover *Trifolium repens* and a limited amount of dandelion *Taraxacum officinalis* agg and daisy *Bellis perennis*.
- 3.12 Site habitats are shown in Fig 2: Site Map. No plant species that are listed on Schedule 8 or 9 of the Wildlife and Countryside Act 1981 (as amended) were identified on site.

#### Species

##### *Bats*

- 3.13 A Preliminary Roost Assessment (PRA) of the onsite buildings was undertaken. For the purpose of the report the main two storey element of the residential dwelling is referred to as Building 1 (B1), the single storey extension, located at the western elevation of B1 is referred to as Building 2 (B2) and the garage annexe is referred to as Building 3 (B3).
- 3.14 B1: Externally, features that were considered to offer value to crevice dwelling species of bat that utilise the external fabric of buildings for roosting and provide potential ingress points for void dwelling species were limited to the gaps and crevices under and between the imitation Cotswold tile-stones. No gaps were noted in the stonework of the elevations.
- 3.15 Internally, the loft void located within the pitched roof of the building features an exposed W-truss timber roof structure with the tiles being underlined with bitumen felt. No daylight ingress was noted; however, areas of damaged underlining were discovered beside both walls at the apex of the roof. The building interiors of the ground and first floors were considered to be inaccessible by bats.
- 3.16 Several hundred medium-sized scattered bat droppings of various ages were found on the floor within the loft void during the assessment of the building.

- 3.17 B2: Externally, features that were considered to offer value to crevice dwelling species, that utilise the external fabric of buildings for roosting and provide potential ingress points for void dwelling species were limited to the gaps and crevices under and between the imitation Cotswold tile-stones. No gaps were noted in the stonework of the elevations.
- 3.18 Internally, the loft void located within the pitched roof of the building features an exposed W-truss timber roof structure with the tiles being underlined with foil-backed insulation. No daylight ingress was noted that may highlight potential entry points and the ground floor of the building was considered to be inaccessible by bats.
- 3.19 No bats, droppings or further evidence of bat presence was discovered during the assessment of the building.
- 3.20 B3: Externally, features that were considered to offer value to crevice dwelling species of bat that utilise the external fabric of buildings for roosting and provide potential ingress points for void dwelling species were limited to the gaps and crevices under and between the imitation Cotswold tile-stones. No gaps were noted in the stonework of the elevations.
- 3.21 Internally, no loft void is present as the roof of the building is open to the apex internally and the roof spaces present within the eaves were well sealed and fully boarded with no daylight ingress noted that may highlight potential entry points and the building's interior, including the ground floor garage, was considered to be inaccessible by bats.
- 3.22 No bats, droppings or further evidence of bat presence was discovered during the assessment of the building.
- 3.23 In addition to suitable roosting habitat outlined above, nearby scattered mature trees present within the residential gardens, including the semi-mature trees present at the southern boundary of the property will likely offer value to foraging and commuting bats.

## Nocturnal Bat Survey Results

### Survey One – B2 and B3

- 3.24 During the nocturnal survey, completed on the 30th of August 2023, a total of five species of bat were recorded - common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *P.pygmaeus*, *Myotis* sp., brown long-eared *Plecotus auritus*, and Barbastelle *Barbastella barbastellus*, and noctule *Nyctalus noctula*. Activity was dominated by regular commuting passes and foraging by common and soprano pipistrelle, most notably to the west of survey building B3; the first call recorded was made at 20:00 h, with activity continuing throughout the duration of the survey until 21:23 h. Additionally, infrequent, and

non-visual recordings by low numbers of commuting noctule and *Myotis* sp. were recorded over the site grounds between 20:11 h and 20:49 h, and single passes by brown long-eared and barbastelle during the same period. Overall activity levels were not considered to be significant, and **at no point were any bats observed emerging from or re-entering the surveyed building.**

**TABLE 4: WEATHER CONDITIONS DURING NOCTURNAL BAT ACTIVITY SURVEYS**

| Date     | Start | Finish | Sunrise/<br>Sunset | Temp<br>°C | Wind  | Cloud | Rain | Notes |
|----------|-------|--------|--------------------|------------|-------|-------|------|-------|
| 30/08/23 | 20:40 | 21:30  | 19:58              | 16         | Still | 40%   | Dry  | N/A   |

#### *Badger*

- 3.25 No badger setts or further evidence of badger activity was discovered onsite or within a 30 m radius of the survey boundary where accessible. In addition, habitats immediately surrounding the surveyed building were considered to offer little value to commuting and foraging badgers and the site was considered to be unsuitable for sett building. For this reason, badgers are not considered further within this report.

#### *European Hedgehog*

- 3.26 No evidence of hedgehog was discovered during the site visit and habitats immediately surrounding the surveyed building were considered to offer little value to commuting, foraging and sheltering hedgehogs. For this reason, hedgehogs are not considered further within this report.

#### *Reptiles and Amphibians*

- 3.27 No evidence of reptiles or amphibians was found on site during the assessment and terrestrial habitats immediately surrounding the surveyed building which were comprised solely of gravelled and paved hardstanding with short mown amenity lawn are considered to offer negligible value for reptiles and amphibians with no areas of refuge present.
- 3.28 Furthermore, no aquatic habitat in the form of ponds or other waterbodies are present within the survey boundary as defined in Figure 2, therefore lacking suitable onsite breeding habitat for GCN populations. In addition, no ponds were identified within a 500 m radius of the site while conducting the desk study using the Magic website.
- 3.29 It is considered that impacts to reptiles and amphibians as a result of the proposed development can be reasonably discounted, therefore reptiles and amphibians are not considered further within this report.

#### *Birds*

- 3.30 Gaps and crevices under the imitation Cotswold tile-stones offer value as nesting sites to some bird species such as swift *Apus apus*, however, no evidence of nesting birds was discovered during the assessment of the building.

## 4 DISCUSSION & RECOMMENDATIONS

### Proposals

- 4.1 The proposals at Cherry Tree Cottage will include impacts to the roofs of the residential dwelling and garage annexe. A planning application shall be submitted to Cotswold District Council in due course. The purpose of the survey was to undertake an appraisal of the site for its potential ecological value to notable and protected wildlife, and to look for evidence of such species. The survey results provide information to determine the likely ecological impact the proposed development will have on wildlife species, and to inform the level of further survey effort and mitigation required to comply with relevant nature conservation policies and legislation.

### Habitats

- 4.2 As part of the desk study, online resource MAGIC was checked for statutory and non-statutory designated sites, of which none were identified within a 2km radius. Blocks of deciduous woodland are found within a 2 km radius of the site and are likely to support an assemblage of wildlife including bat populations of various species. The proposal is considered small-scale and therefore, no impacts to priority habitats found outside the survey area are anticipated as a result of the development proposal, provided that surrounding ecological features are not subjected to the inappropriate use of nocturnal lighting.
- 4.3 Habitats surrounding the building comprise gravelled and paved hardstanding with short mown amenity lawn which is considered to hold negligible value to protected species in its current state and the area of impact (the survey building) provided little in the way of suitable habitat for other protected species other than bats and birds.

### Species

#### Bats

- 4.4 Potential Roosting Features (PRFs) noted during the assessment of the buildings were limited to the gaps and crevices under the imitation Cotswold tile-stones cladding the roofs. No bats, droppings, feeding remains or further evidence of bat activity was discovered during the assessment of the building. However, due to the presence of the PRFs outlined above, combined with good connectivity between the site and surrounding habitats, roosting by bats cannot be discounted at this stage.
- 4.5 B1: During the inspection, bat droppings were discovered within the loft void of the main two storey element. Subsequently, **B1 was deemed to be a confirmed roost**. In the absence of appropriate mitigation and compensation, any bats which may be utilising the building for roosting could be disturbed, injured or killed during the proposed demolition and any roosts would be destroyed. At this stage, no works are planned upon this structure and as such no impacts to the existing roost are

anticipated and no potential entry/emergence points will occur. Should plans change to include any impacts to this structure, **three nocturnal surveys should be undertaken on the building** to characterise the roost, with at least two of the surveys taking place during the optimal survey period from May to August. A European Protected Species Licence (EPSL) would be required from Natural England for works to proceed lawfully.

- 4.6 **B2:** Due to the presence of a single raised tile, **the single storey element of the residential dwelling was considered to hold low roosting potential**. Therefore, **one nocturnal survey was undertaken** to ascertain presence/absence of bats, with one surveyor used to cover the north facing aspect of the roof.
- 4.7 **B3:** The garage annexe **is considered to hold low roosting potential** due to a low number of raised tiles. Therefore, it was recommended that prior to any works commencing, **one nocturnal survey was undertaken** to ascertain presence/absence of bats, with two surveyors used to cover these features.

#### Nocturnal Bat Survey – B3 and B3

- 4.8 During the nocturnal survey effort, five bat species were recorded utilising the wider environment for commuting and foraging, with activity dominated common and soprano pipistrelle within habitats surrounding the surveyed buildings. Results indicate that local bat populations of various species exploit surrounding habitats; however, activity levels overall were considered low. **Notably, at no point were any bats observed emerging from or re-entering the surveyed buildings and as such roosting can be reasonably discounted.**

#### Conclusion

- 4.9 Taking the above into consideration, **no further bat survey effort is recommended for works on B2 and B3**, and a European Protected Species Licence is not required for the proposed development on these structures to proceed. However, all workers should be vigilant and mindful of bats during works on the above buildings, taking extra care at all times during development. In the unlikely event that bats are discovered, work should cease immediately, and a suitably licenced and experienced ecologist contact for further advice. It should be noted that further works would not be able to lawfully proceed without confirmation from Natural England, and bats should not be handled at any time for legal reasons. If bats are discovered during works, Natural England will potentially restrict development until further surveys have been completed and a full mitigation and compensation strategy has been designed. It is likely that, if bats are discovered, a European Protected Species Licence (EPSL) will be required from Natural England.

#### Nocturnal Lighting Scheme

- 4.10 The insensitive use of external lighting within the proposed development scheme could have a negative impact upon bats using the site for foraging and commuting activity. Therefore, 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 Guidance Note 08/23: Bats and Artificial Lighting<sup>12</sup>.

#### 4.11 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.

In addition to the above, when selecting appropriate external lighting, the following specifications should 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 bats<sup>13</sup>.
- All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used<sup>14</sup>

#### Birds

- 4.12 No evidence of nesting was discovered during the survey effort. As such, no impacts to nesting birds are anticipated as a result of the proposed development. In the unlikely event that any nesting birds or suspected nesting activity is discovered prior to works commencing, works must cease and Cotswold Environmental Ltd contacted for further advice.

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<sup>12</sup> <https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/>

<sup>13</sup> Stone, E.L. (2013) *Bats and lighting: Overview of current evidence and mitigation*

<sup>14</sup> Bat Conservation Trust & Institute of Lighting Professionals (ILP) 2023. *Guidance Note 8: Bats and artificial lighting in the UK*. Bats and the Built Environment Series.

## Biodiversity Enhancement

4.13 The NPPF (2021) outlines obligations of Local Planning Authorities to promote Biodiversity Net Gain where possible. There are various options available with regards to biodiversity enhancement on site:

### Bats

4.14 In addition to any required mitigation, an option to increase biodiversity relating to bats on site would be to affix one or more bat boxes to nearby mature trees within the site boundary, ideally using either Schwegler 1FF boxes (or similar) or Schwegler 2F boxes (or similar). Alternatively, bat boxes can be installed at the apex of a gable wall, but they can also be placed along other elevations at eaves level or below the fascia and / or soffits. They may also be pole-mounted in a garden. Bat boxes should be positioned no lower than 4m above ground level and they should not face in a northerly direction.

### Nesting Birds

4.15 An option to increase biodiversity relating to nesting birds would be to install one or more external bird nest boxes (Schwegler 1B or similar) onsite. For maximum success, our recommendations are as follows:

- Bird boxes must be positioned away from the building's main access doors where disturbance would be likely.
- Following British Ornithology Trust guidelines, bird boxes must be positioned no lower than 2m from ground level and preferably above 3 m to prevent possible predation.
- The proposed placement of the bird nest boxes must allow for a clear flight path, without obstruction to the nest box entrance. It is recommended that they are installed in a south-westerly facing direction to offer protection from prevailing winds and rain and should ideally be slightly tilted in a downwards position to offer further weather protection.

## APPENDIX A: LEGISLATION SUMMARY

### Habitats Directive

Species listed in the Habitats Directive 1992 (transposed into UK law through the Conservation of Habitats and Species Regulations 2010 and subsequently 2017 as amended) for which it is illegal to deliberately capture, kill or disturb any individual, or deliberately damage or destroy a breeding site or resting site. In 2007 and 2009, the Habitats Regulations were amended to define illegal disturbance as that which would affect the ability of a significant group of animals of a European Protected Species to survive, breed or to rear or nurture their young, or to hibernate or migrate, or to affect the local distribution or abundance of the species.



### **Natural Environment and Rural Communities (NERC) Act 2006**

The act to makes provision about bodies concerned with the natural environment and rural communities; to make provision in connection with wildlife, Sites of Special Scientific Interest, National Parks and the Broads; to amend the law relating to rights of way; to make provision as to the Inland Waterways Amenity Advisory Council; to provide for flexible administrative arrangements in connection with functions relating to the environment and rural affairs and certain other functions; and for connected purposes.

### **Countryside and Rights of Way (CRoW) Act 2000**

The CRoW applies to England and Wales only, enforcing a statutory policy for biodiversity conservation. The UK Biodiversity Action Plan (BAP) provides the framework for fulfilling the UK's responsibilities towards the Convention on Biological Diversity. The CRoW Act is compliant with the provisions of the European Convention on Human Rights, requiring consultation where the rights of the individual may be affected by these measures.

### **The Conservation of Habitats & Species Regulations 2017 (the Habitat Regulations) (as amended)**

The Conservation of Habitats and Species Regulations 2017 (as amended) consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law. They also transpose elements of the EU Wild Birds Directive in England and Wales. The Regulations came into force on 30th November 2017 and extend to England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters). In Scotland, the Habitats Directive is transposed through a combination of the Habitats Regulations 2010 (in relation to reserved matters) and the and the Conservation (Natural Habitats &c.) Regulations 1994. The Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) transpose the Habitats Directive in relation to Northern Ireland.

### **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.

### **Reptiles**

All native British species of reptile (of which there are six) are listed in Schedule Five of the Wildlife and Countryside Act (1981) (as amended) and as such are protected from deliberate killing, injury or trade. Therefore, where development is permitted and there will be a significant change in land use, a reasonable effort must be undertaken to remove reptiles off site to avoid committing an offence. The same act makes the trading of native reptile species a criminal offence without an appropriate licence.

### **Great Crested Newts**

Great crested newts and their habitats receive protection under The Conservation of Habitats and Species Regulations 2017 (as amended). This species is also afforded full protection under the Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under such legislation it is an offence to:

- Intentionally or recklessly kill, injure or capture a great crested newt;
- Possess or control any live or dead specimen or anything derived from a great crested newt;
- Intentionally or recklessly\* damage, destroy or obstruct access to any structure or place used for shelter or protection by a great crested newt; and
- Intentionally or recklessly\* disturb a great crested newt while it is occupying a structure or place which it uses for that purpose.
- Damage or destroy a breeding site or resting place.
- Sell, barter, exchange or transport or offer for sale great crested newts or parts of them.

\*Reckless offences were added by the Countryside and Rights of Way Act 2000, which applies only to England and Wales.

### **Badger**

Badger is protected in Britain under the *Protection of Badgers Act 1992* and *Schedule 6 of the Wildlife and Countryside Act 1981* (as amended).

The legislation affords protection to Badgers and Badger setts and makes it a criminal offence to:

- wilfully kill, injure, take, possess or cruelly ill-treat a Badger, or to attempt to do so;
- interfere with a sett by damaging or destroying it;
- to obstruct access to, or any entrance of, a Badger sett; or
- to disturb a Badger when it is occupying a sett.

### **Dormouse**

The dormouse has undergone substantial declines in recent years as a result of habitat loss, deterioration and fragmentation and is consequently protected as a 'European Protected Species' under the 2017 Conservation of Habitats and Species Regulations, which implements the EC Habitats Directive 92/43/EEC in the United Kingdom. In relation to European Protected Species (EPS), the 2017 Regulations make it an offence to:

- Deliberately capture, injure or kill any wild animal of a EPS;
- Deliberately disturb wild animals of any such species, in particular any disturbance which is likely to: (i) impair their ability to survive, to breed or reproduce, or to rear or nurture their young; or to hibernate or migrate or (ii) affect significantly the local distribution or abundance of the species to which they belong;
- Damage or destroy a breeding site or resting place of such an animal; and/or
- To (a) be in possession of, or to control; (b) to transport any live or dead animal or any part of an animal; (c) to sell or exchange or (d) offer for sale or exchange any live or dead animal or part of an animal of an EPS.

In addition, Dormice are protected under the 1981 Wildlife and Countryside Act (as amended).

Dormice are listed on Schedule 5 of the Act and are subject to the provisions of Sections 9.4b and 9.4c, which make it an offence to:

- Intentionally or recklessly disturb a Dormouse while it is occupying a structure or place which it uses for shelter or protection; and/or
- Intentionally or recklessly obstruct access to any structure or place used for shelter or protection by a Dormouse.

### **Birds**

All common wild birds are protected under The Wildlife and Countryside Act 1981 (and as amended).

Under this legislation it is an offence to:

- Kill, injure or take any wild bird
- Take, damage or destroy the nest of any wild bird while it is in use or being built
- Take or destroy the egg of any wild bird

Certain rare breeding birds are listed on Schedule 1 of The Wildlife and Countryside Act 1981 (and as amended). Under this legislation they are afforded the same protection as common wild birds and are also protected against disturbance whilst building a nest or on or near a nest containing eggs/unfledged young.

## **APPENDIX B: MAPS & SITE PLANS**

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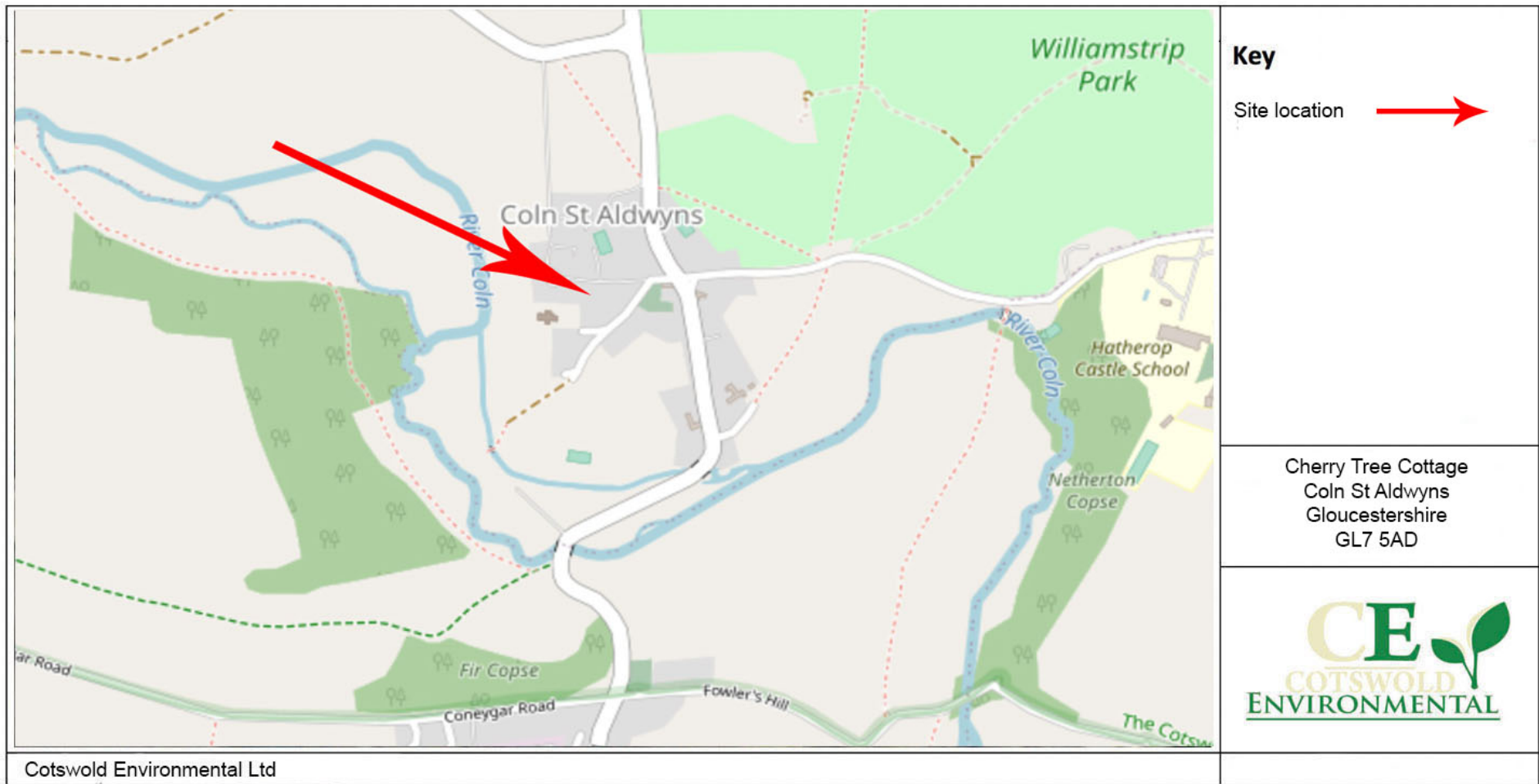


Figure 1: Location Map



Figure 2: Habitat Map

## APPENDIX C: SITE IMAGES



Photo 1: B1 - North facing elevation



Photo 2: B1 - Raised tiles



Photo 3: B1 - Porch to be removed and replaced



Photo 4: B1 - Conservatory to rear elevation

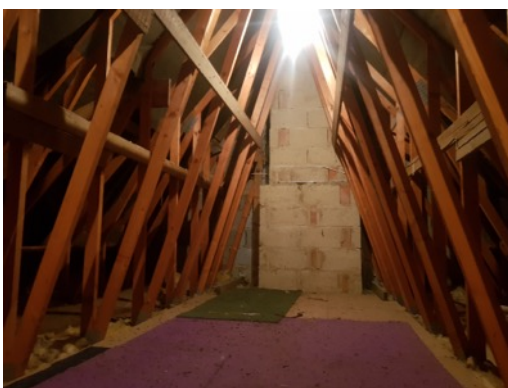


Photo 5: B1 - Interior view of loft void



Photo 6: B1 - Scattered bat droppings on floor of loft



**Photo 7: B1 - Scattered bat droppings on floor of loft**



**Photo 8: B2 - North facing elevation**



**Photo 9: B2 - West facing elevations**



**Photo 10: B2 - Raised tiles**



**Photo 11: B2 - Interior view of loft void**



**Photo 12: B3 - East facing elevation**





Photo 73: B3 - Raised tiles



Photo 14: B3 - Internal view of ground floor

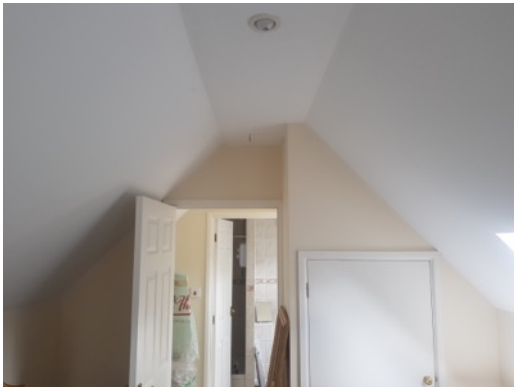


Photo 15: B3 - Internal view showing roof open to the apex



Photo 16: B3 - Boarded out eaves roof spaces



Photo 17: Short mown amenity lawn to rear of property



Photo 18: Example infrared camera view – B3



**Photo 19: Example infrared camera view – B3**



**Photo 20: Example infrared camera view – B2**