



ECOLOGY UPDATE SURVEY REPORT

Meredith Barn

Meredith Lane
Tibberton
Gloucestershire
GL2 8DZ

September 2023

ENVIRONMENTAL CONSULTANT:
Haydn Brookes BSc (Hons) MCIEH
07979 966 696
haydn.brookes@hotmail.com

 **Environmental
Methods**
Ecology & Environmental Consultancy

REPORT SUMMARY

1. INTRODUCTION

Environmental Methods Consultancy was appointed to provide an update ecology survey and report for a portal frame agricultural building and adjacent outbuildings at a site known as Meredith Barn, Meredith lane, Tibberton, Gloucestershire.

This report updates the following ecological reports that have been carried out at Meredith barn:

Preliminary Ecological Appraisal was undertaken by Elite Ecology in March 2020 which recommended bat activity surveys be undertaken on two of the four buildings (B3 and B4), which were classified as having moderate and low suitability to support bat roosts. The other two buildings (B1 and B2) were classified as having negligible suitability to support roosting bats.

Preliminary Roost Assessment (PRA) and **two bat activity surveys** were undertaken July 2021 by Swift Ecology. These surveys did not reveal any evidence of roosting bats in the buildings, with the PRA revealing that there had been little change to the nature of the buildings since the previous survey in 2020. Following this assessment, the buildings were confirmed to be of moderate (B3) and low (B4) suitability to support roosting bats.

2. UPDATE SURVEY METHOD AND RESULTS

A walk over was carried out in July 2023 to identify relevant features and species of conservation concern. These were as follows:

- **Bats** – Buildings B1 and B2 were assessed and confirmed to be of negligible potential, with B3 and B4 confirmed moderate and low potential for hosting bats and/or their roosts. Two bat activity surveys were undertaken on B3 with one survey being carried out on B4. No use by bats was found.
- **Great crested newts** – The site lies with the amber impact risk zone for GCN with two ponds within 250m. The Council's Sustainability Team previously concluded (P0437/20/PQ3PA) that information within a previous PEA was sufficient to rule out likely presence of GCN at this site. GCN have therefore not been considered further within this report.
- **Reptiles** -The site provides potential, albeit low, for use by common reptiles.

3. RECOMMENDATIONS

- **Bats and nesting birds**

No formal planning control will be necessary for the barn relating to bats or nesting birds.

- **Reptile and great crested newts**

Precautionary methods of working are recommended during works to protect common reptiles and any great crested newts that could be present on the site.

- **Wildlife habitat enhancement**

For any new development, national planning policy seeks to reverse the decline in wildlife habitats by introducing opportunities for biodiversity enhancement. The installation of bat and bird boxes will therefore be incorporated into this development.

1.0 Introduction

Environmental Methods Consultancy was appointed to provide an update ecology assessment for Meredith Barn, Meredith Lane, Tibberton, Gloucestershire. This is an updated assessment to support a new planning application for the redevelopment of the site for residential use.

The results of this report update the following ecological reports that have been carried out at Meredith barn and outbuildings:

The site was subject to a **Preliminary Ecological Appraisal** undertaken by Elite Ecology in March 2020 which recommended bat activity surveys be undertaken on two (B3 and B4, Figure 1) of the four buildings which were classified as having low or moderate suitability to support bat roosts. The other two buildings (B1 and B2, figure 1) were classified as having negligible suitability to support roosting bats.

A **Preliminary Roost Assessment (PRA)** and **two bat activity surveys** were undertaken in July 2021 by Swift Ecology. These surveys did not reveal any evidence of roosting bats in the buildings, with the PRA revealing that there had been little change to nature of the buildings since the previous survey in 2020. Following this assessment the buildings were assessed and confirmed to be of moderate (B3) and low (B4) suitability to support roosting bats.

This report should be read in conjunction with the above reports. The update surveys followed best practice guidelines and were undertaken by Environmental Methods Consultancy. The surveys included a physical re-inspection of the site and the building's relevant internal and external features for signs of usage by bats.

A bat flight dusk emergence survey was carried out on the evening of the 28th July 2023 on B3 (figure 1) and a dawn re-entry survey was carried out on the 16th August 2023. A single survey was carried out on B4 (figure 1) on the 2nd September 2023, in accordance with current survey guidance for buildings of low and moderate bat roost suitability.

2.0 Location and habitat

Meredith barn is located 250m south of the village of Tibberton, 7km north west of Gloucester. It is accessed via an unmetalled track from the main road that runs through the village. The property is located at grid reference SO764214.

The surrounding landscape comprises mostly of arable farmland and neighbouring residential properties. The landscape is well connected, with surrounding habitat of medium to high quality for supporting bats.



Figure 1 – Location of Meredith Barn, showing the three buildings, including B1 which comprises the prior approval outlined in white the buildings subject to bat activity suveys outlined in yellow (Source - Google Earth, 2023).



Figure 2 - Aerial photograph showing the landscape context of the site, outlined in white (Source - Google Earth, 2023)

3.0 Survey objectives

The survey objectives of this report are to identify and describe the potential impacts of the proposed work on bats (including nesting birds), to identify the need for further surveys and whether a protected species mitigation licence is or is not required in relation to bats, and to set out mitigation, enhancement and compensation measures as appropriate to ensure compliance with nature conservation legislation. This report also includes information on the legislative requirements relating to bats.

4.0 Methodology

4.1 Data search

A full background data search was commissioned by Elite Ecology in March 2021 from Gloucestershire Centre for Environmental Records for records of bats within a 2km search radius of the site. The results of the data search are provided in the PEA report from Elite Ecology 2020. A data search was not carried out as part of this re-assessment.

Reference was made to Natural England's MAGIC website for detail on nearby statutory designated sites and records of granted Natural England protected species bat mitigation licences within a 2km search radius of the site.

4.2 Site walk-over survey

The daylight walk over survey was undertaken in clear weather, and in accordance with the following published methodologies:

- Handbook for Phase 1 habitat survey (Joint Nature Conservation Committee, 2010) (noting dominant species; and providing target notes where appropriate to identify particular features/ species);
- Guidelines for Preliminary Ecological Appraisal (Institute of Ecology and Environmental Management, 2012).

During the survey, the following investigations were undertaken in respect of the presence of legally protected species:

- Assessment of suitable habitat for nesting birds;
- A search for signs of badger activity including setts, tracks, snuffle holes and latrines within the application site and up to 50 m outside the application site (where access permitted);
- Assessment of habitat potential for reptiles and amphibians (including great crested newts);

- Assessment of habitat potential for dormice;
- Assessment of buildings and trees for bat roosting potential;
- Search for evidence of the presence of invasive plants listed in schedule 9 of the Wildlife and Countryside Act 1981 and subject to strict legal control.

4.3 Constraints

The survey methodology is a walk search and assessment. It can only be a snapshot in time of habitat features and species that can be seen during the search. It was considered however that the site conditions and evidence were sufficient to enable a meaningful assessment to be made.

4.4 Building update inspection survey

A physical inspection of barn and the outbuildings was carried out in daylight to identify and assess internal and external features for their potential to support use by bats. The inspection also provided opportunities to search for any live bats present. Features were examined for signs of present and past use by bats including presence of bat droppings (a very useful indicator of species), surface smoothing, staining, urine deposits, crevice clearing and prey remains. The following equipment was used:

- Bright LED hand and head torches
- Digital camera and binoculars
- Google and Ordnance Survey mapping.

All relevant features of buildings were inspected both inside and out, where necessary using binoculars to examine features beyond close range, and with a high-powered torch to examine dark areas. Features included any crevices where bats may roost or any other signs of bat occupation.

4.5 Bat activity update surveying

Two bat activity surveys were undertaken to incorporate buildings B3 and B4, as buildings B1 and B2 had previously classified as negligible suitability to support roosting bats. A bat activity dusk emergence was carried out on the 28th July 2023 on B3, followed by a re-emergence survey on the 16th August 2023. A single dusk emergence was carried out on B4 on the 2nd September.

Two surveyors were positioned at each end of the building with a viewpoint with clear sight of all aspects of the buildings to provide maximum opportunity to detect bat emergence or re-entry into the building.

The surveyors used Batscanner Stereo and Wildlife Acoustics Echo Touch Two Pro full spectrum bat detectors to provide enhanced detection of any echolocating bats and species identification.

5.0 Bat ecology

There are 18 bat species that breed in the UK. An additional 12 species have been recorded as vagrants from Europe or the USA with some arrivals known to be ship assisted. All the recorded species are insect eaters. Although occasionally seen in the day, they are predominantly nocturnal.

Most bats are colonial. They roost usually in groups but sometimes singly in trees, buildings, cave systems, mines and other structures that provide suitable environmental conditions for them.

A roost is defined as any structure or place used by bats for shelter and/or protection. Bats frequently re-use roosts from year to year, so the roost is protected at all times, whether the bats are present or not.

Damage to a roost can include chemical treatment using some wood preservatives and also the use of insecticides and pesticides that might affect the bats or their roost.

All bats that occur in the UK are Protected Species, meaning that it is an offence to harm or disturb them or their roosts, either intentionally or by accident.

Different species of bat have different life-cycle strategies and require different conditions. However, each requires:

- Hibernation roost sites, also known as hibernaculum. These are places where stable winter temperatures allow a period of winter torpor to conserve energy (e.g. underground sites such as caves and mines; built environments sometimes also offer similar conditions).
- Nursery/maternity roost sites, where females gather in spring and early summer to give birth and rear their offspring (e.g. roof spaces, including cracks and crevices e.g. within dry stone walls, in beam joints, under roof tiles, between slates and roof felt, etc.). Hollows in mature trees and cliff faces may also be utilized. At the end of the summer these roosts are generally vacated, sometimes to another site in the same building.
- Individual roost sites for solitary males or small congregations of males that congregate during spring, summer and autumn. These roosts are far less obvious than maternal roosts and consequently more difficult to find. Individual male bats may use more than one roosting site during the same season.
- The same colony may have different roost sites in various structures spread over several kilometres (or all within a single building).
- An ecologically diverse feeding environment is needed. This environment should be insect rich.

- There is a poorly understood need for social gathering sites at certain times of the year for some or possibly all species (e.g. the Autumn mating season and in early Spring, males and females may gather together).
- Other roosts such as feeding perches, overnight roosts and transition roosts between summer and winter roost sites also occur. Therefore, even if a major maternity roost or hibernacula is not present, a site might still be important for a colony for other reasons at other times in the year or in different weather conditions.

5.1 Legislation relevant to bats

- All bat species currently resident in the UK are regarded as either Species of Conservation Concern or Priority Species.
 - All are mentioned in the 'EC Habitats and Species Directive'. Five species are included in Annex II: Barbastelle, Bechstein's, greater mouse-eared, greater horseshoe and lesser horseshoe. All 18 species are included in Annex IV.
 - All are listed in Appendix 3 of the 'Bonn Convention 1979'.
 - All are listed in Appendix 2 or 3 of the 'Bern Convention 1982'.
 - All British bat species are protected under the 'Wildlife and Countryside Act 1981' (as amended). This requires consultation with the SNCO (Natural Resources Wales or Natural England, as appropriate) before carrying out any activities that might harm or disturb them. Amendments to this act in the 'Countryside and Rights of Way Act 2000' also protect from reckless and/or intentional disturbance or damage.
 - All bat species were listed in Schedule 2 of the 'Conservation (Natural Habitats &c) Regulations 1994'. These were amended by the Conservation of Habitats & Species Regs 2017. Regulation 41 makes it an offence to deliberately capture or kill bats, to deliberately disturb a bat, damage or destroy a breeding site or resting site of any bat. It is an offence to disturb any bat roosting site.
 - A UKSAP has been produced for common pipistrelle in addition to barbastelle, lesser and greater horseshoe bats.
 - The presence of bats or their roosts does not always mean that development proposals cannot proceed. If suitable, approved mitigation is specified, exemptions can be granted from the protection afforded to bats under regulation 41 by means of a European Protected Species licence. The Statutory Nature Conservation Organisation (SNCO) responsible for determining and issuing licenses for works associated with developments affecting bats in Wales is Natural Resources Wales (NRW), and in England, Natural England.

6.0 Survey results

Data search records are provided in the previous PEA survey report (Elite Ecology 2020). Due to the relatively low likelihood of the buildings being able to support bats, and previous assessments made, the surveyor had a reasonable anticipation that the building was not being used by bats. It was also regarded that it would be unreasonable to incur additional expense for the client to have carried out a data search when it would have been unlikely to have contributed any necessary further context to the survey.

While no ecological survey can guarantee that all signs of species can be detected and exhaustively assessed, the activity surveying was considered appropriate to provide the necessary evidence to evaluate the building with sufficient confidence.

6.1 Designated sites within 2km

There are no designated sites within 2km. The nearest designated site, the River Severn SSSI is located approximately 5km south-east of the site.

The nearest of the Wye Valley & Forest of Dean Special Area of Conservation (SAC) bat sites is located approximately 11km to the west of the site.

6.1.2 Fauna records within 2km

Reference to Natural England's MAGIC website, which holds records of granted protected species licences, identified two licences for bats within 2km of the site. The closest, at a location 1.7km south of the site in reference to common pipistrelle and soprano pipistrelle in 2014, and a second at a distance of 1.9km north west of the site in 2010 in reference to common pipistrelle, soprano pipistrelle, lesser horseshoe, whiskered bat, Daubenton's bat, Natterer's bat and Brandt's bat.

No priority habitats and priority or protected species were identified within the development boundary, nor will any of the above habitats and species be affected by the proposal.

It should be noted that the results of the desktop survey are unlikely to be a true representation of the actual bat population in the area. It is more likely to be either a result of low recorder activity or lack of liaison between bat workers and the record centre.

Despite the *relatively* low number of bat records, the wider landscape surrounding the site provides habitats of significance to bats. The immediate locality is well connected to the wider landscape and is therefore of high habitat significance.

7.0 Site habitat description

7.1 Development site

The development site lies at the end of Meredith lane, at the fringe of the village of Tibberton. It encompasses an area of around 0.47 hectares (*figure 3*), located at grid reference SO764214.

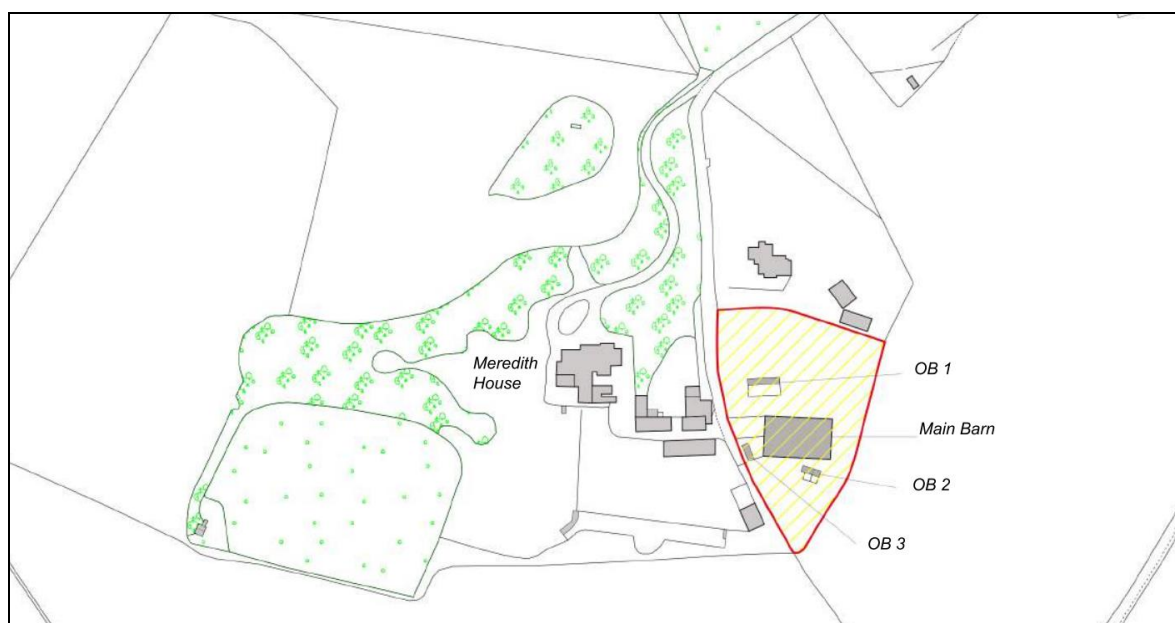


Figure 3 – Extent of development site, scale 1:2500 (Source Luxton Architects)

The habitat at the site comprises tall grasses and other ruderal vegetation with stands of common nettle and bramble in areas. The following photographs show the development zone of influence of the site.



Photo 1 – Tall grasses surrounding B1.



Photo 2 – Common nettle and bramble at B4.

7.2 Surrounding habitat

The land surrounding the building comprises agricultural land, mainly arable fields to the south and east bound by mature native hedges and hedgerows with trees, with large blocks of deciduous woodland 1km to the south. Neighbouring properties including large outbuildings standing adjacent to the front of the property to the west and south.

8.0 Scoping and impact assessments

The site habitat and linkage context indicates consideration for the following:

European Protected Species

Such species and their habitats are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (as amended).

8.1 Great crested newts

8.1.1 Habitats

All ponds are potentially suitable as breeding waterbodies for great crested newts (GCN). Most of the year newts live on land generally within a typical dispersal and migratory range of 250m from their breeding waterbodies with a concentration of terrestrial newt habitat within 50-100m of their ponds (Cresswell 2004).

8.1.2 Nearby ponds

The site lies within the amber impact risk zone for GCN, with two ponds within 250m.

The Sustainability Team previously concluded that information within a previous PEA was sufficient to rule out likely presence of GCN at this site. Further assessment of the site by Environmental methods concludes that the site has not significantly changed since the first PEA assessment was carried out by Elite Ecology in 2020, and supports the comments and imposed conditioning made by the Sustainability Team, that the risks to GCN can be reduced to negligible by following reasonable avoidance measures as detailed in the approved planning permission (P0437/20/PQ3PA).

Therefore, no further survey is deemed necessary and GCN.

8.2 Bats

8.2.1 Habitat evaluation – assessment of the buildings for potential roosting features

External features – Buildings 1 and 2

After examination these buildings both offer negligible suitability to support roosting bats as confirmed by the two previous surveys from Elite Ecology 2020 and Swift Ecology 2021.

Building 3

This is a small derelict brick-built building (3m x 9m) with traditional clay tile pitched roof and a small chimney. There are two entrances to this building, on the east and west gable. The wooden door on the west gable is in poor repair with many access gaps for bats. The wooden door on the east gable is in better condition but still has gaps in where bats could gain entry.

The walls are generally in good condition with air vent brick work to the east gable end. There is no missing mortar in the brickwork where bats could roost. The roof is constructed with traditional clay tiles which are predominantly well sealed except for two missing tiles. There are numerous gaps at the tile verge where bats could gain entry.



Photo 3 – B3

Building 4

Building 4 is a small derelict brick built agricultural building (3m x 8m) with pitched corrugated tin sheet roof in poor condition. The brickwork is generally sound with only minor missing mortar in places. Access is provided through an open doorway with rotting timber framework.

There are many gaps for potential bat entry especially at eaves height, wall to roof plate. Vegetation has encroached significantly up the gable end which is covered in dense ivy growth.



Photo 4 – B4

All external elements of B3 and B4 were inspected with binoculars and a high-powered torch where necessary. No signs of bat usage were discovered during the external inspection.

Internal features

Building 3

B3 has been split into two sections by a single partitioning internal brick-built wall, this is bricked to the roof height, with only access possible at the time of survey to the western room. The western room has an open doorway and allows easy access for flying bats.

The building has rotting timber sarking on the underside of the roof with minor spaces between offering potential opportunities for crevice dwelling bat species. The room was heavily cobwebbed, suggestive of no recent bat use.



Photo 5 – Internal view of B3

Building 4

B4 has a corrugated pitched tin roof, the eaves are open with many gaps allowing plenty of daylight visible between the roof and timber wall plate. There are rough sawn supporting roof timbers with heavy cobwebbing suggesting no recent bat use. Internally there are no enclosed cavities or crevices that would provide suitable features for crevice dwelling bat species.



Photo 6 – Internal view of B4

B3 was assessed as having ‘moderate’ potential for roosting bats and B4 as ‘low’ potential for roosting bats, and thus it is considered that conditions have not changed since the previous two assessments made by Elite Ecology 2020 and Swift Ecology 2021.

All internal elements of the building were inspected with binoculars and a high-powered torch where necessary. No signs of bat usage were discovered during the external inspection.

8.2.2 Impact assessment

There is potential that bats could use minor crevices and/or internal space within B3 or B4 for roosting. As the gaps and crevices are likely to be covered up or removed during conversion and/ or demolition works, any bats present could be harmed or killed and / or their roost destroyed. Update bat flight surveying is therefore necessary to establish if bats are using the buildings. The activity surveying results are provided in **Section 9** below.

Non European protected species

8.3 Nesting Birds

8.3.1 Habitat evaluation

The buildings offer occasional gaps and areas within with potential for use by nesting birds. A careful search for such activity was made, with none found.

8.4 Reptiles

8.4.1 Habitat evaluation

Common reptiles including slow worm, adder, grass snake and common lizard can be found across Gloucestershire in a range of habitats including rough grassland, previously developed land, meadows, parkland, heathland, woodland edge, scrub and gardens.

Common reptiles are protected against reckless or intentional killing and injury under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).

Suitable features for reptiles are present at the site (open grassed areas, scrub etc), particularly for slow worms and possible grass snake. The risk of common reptiles being adversely affected by the development proposals is very unlikely but cannot be ruled out.

8.4.2 Scoping conclusion

Precautionary working methods are specified at **Appendix 1** in this report, and will be implemented during development of the site.

9.0 Update bat flight survey results

The surveyor's bat activity survey sheets can be found at **Appendix 3**. They display the contemporaneous notes made during the activity survey, including any bat flight path descriptions. Any bat activity was noted on a table and map with approximate height, flight direction, numbers and species recorded.

The significant observations are detailed as follows:

Dusk emergence survey 1 (<i>Building 3</i>)	
<p>28th July 2023 (sunset 21.06 hrs)</p> <p>20:50 to 22:30hrs</p> <p>Temperature start: 21°C Temperature finish: 19°C Cloud: 2/8 Precipitation: Nil Wind: Beaufort 1-2</p>	<p>Bat activity was surveyed for 1.5 hours (from 15 minutes before sunset)</p> <p>Common pipistrelles: Commuting along the lane adjacent to the surveyed building to the south west</p> <p>Foraging activity to the rear of the large portal frame building to the north-east of it (no interaction with it).</p> <p>There was no emergence or activity directly associated with the building or within the site.</p>

Table 1: Dusk emergence survey results

Dawn re-entry survey 2 (<i>Building 3</i>)	
<p>16th August 2023 (sunrise 05:54 hrs)</p> <p>04:20 to 06:00hrs</p> <p>Temperature start: 18°C Temperature finish: 20°C Cloud: 3/8 Precipitation: Nil Wind: Beaufort 2-3</p>	<p>Bat activity was surveyed for 1.5 hours before sunrise.</p> <p>Noctule: An overhead direct flight south-east to north west</p> <p>Common pipistrelle: Foraging activity was observed to the front of the property along the lane and out to the field entrance to the south east.</p> <p>There were no entries associated with the barn or the outbuildings on the site.</p>

Table 2: Dawn re-entry survey results

Dusk emergence survey 3 (Building 4)	
<p>2nd September 2023 (Sunset 21:54 hrs)</p> <p>21.34 to 23:04 hrs</p> <p>Temperature start: 18°C Temperature finish: 18°C Cloud: 2/3 Precipitation: Nil Wind: Beaufort 1</p>	<p>Bat activity was surveyed for 1.5 hours (from 15 minutes before sunset).</p> <p>Common pipistrelle: Foraging activity was observed to the front of the property along the lane and out to the field entrance to the south east.</p> <p>There was no emergence activity directly associated with the barn or the outbuildings on the site.</p>

Table 3: Dusk emergence results

10.0 Discussion of results and conclusions

10.1 Bats

Two bat activity surveys were conducted on B3 and a single activity survey on B4. Levels of bat activity were relatively low during all three surveys, where the majority of bats observed were foraging or commuting to the front of the site to where lane finishes and connects with the entrance of an arable field, bordering neighbouring gardens and outbuildings.

This study confirms that agricultural buildings B1 and B2 offer negligible suitability to support bats, with buildings B3 and B4 continuing to be classed as ‘moderate’ and ‘low’ suitability respectively as has been confirmed by previous surveys on the site from Elite Ecology 2020, and Swift Ecology 2021.

B3 and B4 were closely inspected for their potential to support and signs of use by bats. Both offer marginal opportunities for crevice dwelling bat species more so as a night roosting site, with B3 possibly providing suitable opportunities for lesser horseshoe bats from the open door and enclosed flying space provided by this building. However, no actual sign of usage was found in either building.

The functionality of this habitat will not be adversely impacted by the proposed development. Any alterations to the building will not cause any detriment to the use of the surrounding habitat by bats. Pipistrelle bats are highly light-tolerant. To protect the functionality of the surrounding habitat that is currently used by commuting and foraging bats along the front of the site it is recommended that only a basic level of protection from bright light is required and minor habitat enhancement in section 11.

10.2 Reptiles

Suitable features for reptiles of limited extent are present at the site (ephemeral vegetation, bare/ open areas etc), particularly for slow worm and possible grass snake. The risk of common reptiles being adversely affected by the development proposals is relatively unlikely but cannot be ruled out.

Therefore, precautionary working methods are specified at **Appendix 1** in this report, and will be implemented during development of the site.

11.0 Recommendations

11.1 Precautionary working methods for common reptiles

To ensure that the low risk of harming any reptiles during construction activities is controlled, a proportionate non-licensed precautionary working methods approach is recommended and included at **Appendix 1** below.

11.2 Biodiversity enhancement for bats and birds

For any new development, national planning policy seeks to reverse the current decline in wildlife habitats by implementing opportunities for biodiversity enhancement.

Permanent features are therefore detailed at **Appendix 2** below, which are proportionate and suitable for the characteristics of the site and scale of development.

11.3 Lighting controls

a) Objective

To ensure that the introduction of additional artificial lighting as a result of the development is suitably controlled so that it does not interfere with the use of the site habitat by bats.

b) New Lighting

It is recommended that only low-wattage warm white, PIR-activated and 40w max (6w LED equivalent) external lighting is installed on any part of the converted building, with no direct illumination of the bat boxes.

Lamps will be set to deactivate after two minutes max, with a cowl to direct light downwards (upward of no more than 70 degrees). This will ensure that lighting levels are controlled to maintain the low illumination habitat and foraging / commuting functionality of the site for all species of bats.

12.0 References

- Great Crested Newt Mitigation Guidelines, English Nature
- Natural England Excel GCN Method Statement
- Amphibian Identification, Amphibian and Reptile Conservation & Fred Holmes (2014)
- Herpetofauna Groups of Britain and Ireland (1998) Evaluating local mitigation/ translocation programmes: Maintaining Best Practice Guidelines, Bat Conservation Trust, third edition 2016;
- Bat Workers Manual, Ed: T. Mitchell-Jones & A. P. McLeish, JNCC 2001
- Bat Mitigation Guidelines version Jan 2004 A.J.Mitchell-Jones, English Nature 2004, ISBN 1 857167813
- Natural England website: www.naturalengland.org.uk
- Legislation.gov.uk website: www.legislation.gov.uk

13.0 Surveyors

Report author:

Ian Hempshall BSc (Hons)

- Five years' experience of bat surveying;
- Natural England Level 1 Bat Class Licence registration number **2020-45817-CLS**
- Natural England Great Crested Newt Licence number **2022-10475-CL08-GCN**;
- Fully EBLV vaccinated with experience of handling many bat species.
- Trainee Bat Carer
- Member of Gloucestershire and Herefordshire Bat Group.

Bat survey assistant:

Beth Hempshall BSc

- Four years' experience of bat surveying;
- Natural England Great Crested Newt Licence Number: **2022-10476-CL08-GCN**
- Natural England Level 1 Bat Class Licence registration number **2022-10925-CL17-BAT**.
- Fully EBLV vaccinated with experience of handling many bat species.
- Bat Conservation Trust Registered bat carer.
- Member of Gloucestershire and Herefordshire Bat Group.

Report reviewed by:

Haydn Brookes BSc (Hons) MCIEH

- Over ten years' experience of bat conservation, consultancy surveying and field study;
- Member of Gloucestershire Bat Group (Chairman 2018, Underground Secretary 2014-18, Bat Care Coordinator);
- Natural Resources Wales bat licence to disturb and take number **S085825/1**;
- Natural England Volunteer Bat Roost Visitor licence registration number **-15125-CLS-CLS**;
- Natural England Level 2 Bat Class Survey Licence registration number **2015-15126-CLS**;
- Local authority Environmental Protection and Licensing Officer/Manager 2000 to 2015;
- Fully EBLV vaccinated with experience of handling many bat species. Registered bat carer.

APPENDIX 1

Precautionary method of working for slow worm, common lizard, grass snake and adder for low risk sites

1.0 Introduction

Common reptiles including slow worm, adder, grass snake and common lizard can be found across Gloucestershire in a range of habitats including rough grassland, previously developed land (known as brownfield sites), meadows, parkland, heathland, woodland edge, scrub and even gardens. Common reptiles are protected against intentional killing and injury under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). All four of the common species are listed as Species of Principle Importance for Conservation in Wales.

The purpose of this document is to set out a method of working for the development site where suitable features for reptiles are present, but are very limited in extent, and are likely to be affected by development. The risk of common reptiles being present and affected by the development proposals is relatively unlikely but cannot be ruled out.

The developer will to the following requirements:

2.0 In general:

- The site owner/site manager will ensure that anyone undertaking construction works on the site (including sub-contractors) is made aware of the potential for the site to support common reptiles, where to expect them, their protected status and the procedure (see below) to follow in the unlikely event that common reptiles are discovered during works.
- A copy of this Precautionary Method of Working will be kept on site and/or available for inspection at all times.
- Should any common reptiles be discovered during construction, which are likely to be effected by the development, works will cease immediately. The owner/ site manager will then seek the advice of a suitably qualified and experienced ecologist and works will only proceed in accordance with the advice they provide.
- The contact details for the retained ecologist, Haydn Brookes are:

Tel. 07979 966 696

Email haydn.brookes@hotmail.com

3.0 The following works are to be carried out prior to commencement of any other site clearance or construction activities at the site:

1. All clearance works will be undertaken when common reptiles are likely to be fully active i.e. during the April to October period.
2. Initial clearance of dry stone walls, logs, brash, stones, rocks or piles of discarded rubble / waste will be undertaken carefully by hand and removed off site or stored off the ground on pallets or in skips or bulk bags.
3. Careful vegetation removal should be undertaken to encourage reptiles into suitable areas of the site and displace them from the development zone. Using hand tools (strimmer or brush cutter) vegetation should initially be reduced to 15-20 cm with all cuttings raked and removed off site on the same day.
4. The direction of cutting should move towards suitable reptile habitat i.e. long grass, scrub that ideally connects to similar habitat.
5. After a period of at least two days has passed a second vegetation cut should be undertaken to a height of approximately 5cm. Again, all cuttings should be raked and removed off site on the same day.
6. Following removal of tall vegetation using the methods described above, vegetation will be maintained at a height no more than 5cm throughout the course of the works to discourage common reptiles from returning.
7. Any trenches left overnight will be covered or provided with ramps to prevent common reptiles from becoming trapped.
8. Any building materials such a bricks, stone etc. will be stored on pallets to discourage reptiles from using them as shelter. Any demolition materials will be stored in skips or similar containers rather than in piles on ground.

APPENDIX 2

Habitat enhancement

It is recommended that two of the following bat habitat enhancement boxes be permanently installed on the eastern and southern elevations of the converted building, installed at eaves height or above.

Two **Vivara Pro Built-in Woodstone Bat Boxes** (midi size) to be permanently installed. This will provide valuable roosting provision at the site for crevice-dwelling bats.



Figure 4 – Beaumaris Woodstone bat box

One **Vivara Pro Woodstone House Sparrow Nest Box** (double chamber) will be permanently installed onto the eastern side elevation wall of the proposed building at eaves level. This will provide much needed nesting opportunity for house sparrows which have suffered a large decline in habitat and nesting areas, putting them on the conservation red list – Red list is the highest conservation priority, with the species needing urgent action.



Figure 5 - Vivara Pro Woodstone House Sparrow Nest Box (double chamber)

APPENDIX 3
Bat activity survey sheets

Bat flight survey record sheet

Site: Meredith Barn	Date: 28-07-23	Dusk / dawn From : 20:50 To : 22:30	Cloud: 2/8 Precip: None BFT: 1 Temp start: 21 °C Fin: 18 °C
------------------------	-------------------	---	--

Bat flight line plan	Detector: BatScanner	Sunset / sunrise: 21:06	Surveyor: Beth Hempshall
----------------------	-------------------------	----------------------------	-----------------------------



No. on plan	Species	Time	Count	Height	Observations
①	C.Pip	21:25	1	L	Foraging behaviour of single bat to rear of large frame building
	"	21:31	1	L	" "
		↓			" "
		21:48			
②	C.Pip	21:49	1	L	Commuting pass of C.pip just above hedge height

Bat flight survey record sheet

Site: Meredith Barn	Date: 28-07-23	Dusk / dawn From : 20:50 To : 22:30	Cloud: 2/8 Precip: None BFT: 1-2 Temp start: 21 °C Fin: 19 °C
------------------------	-------------------	---	--

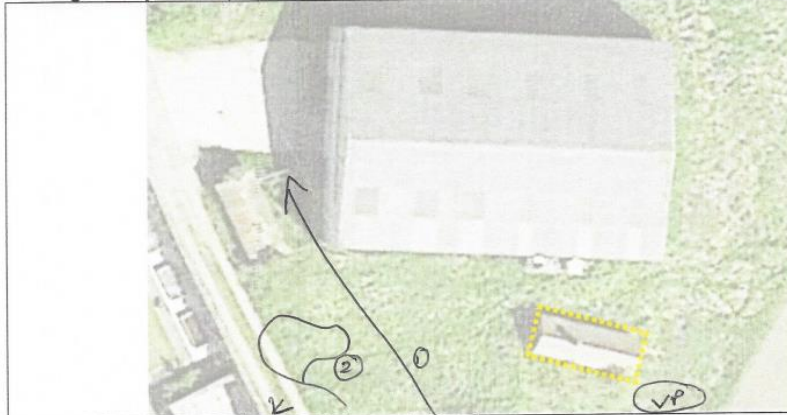
Bat flight line plan	Detector: Echo meter 2 Pro	Sunset / sunrise: 21:06	Surveyor: Ian Hempshall
----------------------	-------------------------------	----------------------------	----------------------------



No. on plan	Species	Time	Count	Height	Observations
①	C.Pip	21:18	1	L/m	Commuting flight overhead of nearby outbuilding (south-north)
	"	21:29	1	m	Direct commuting flight of Common pip along track again south-north
②	"	21:48	1	L/m	Direct pass in other direction north-south

Bat flight survey record sheet

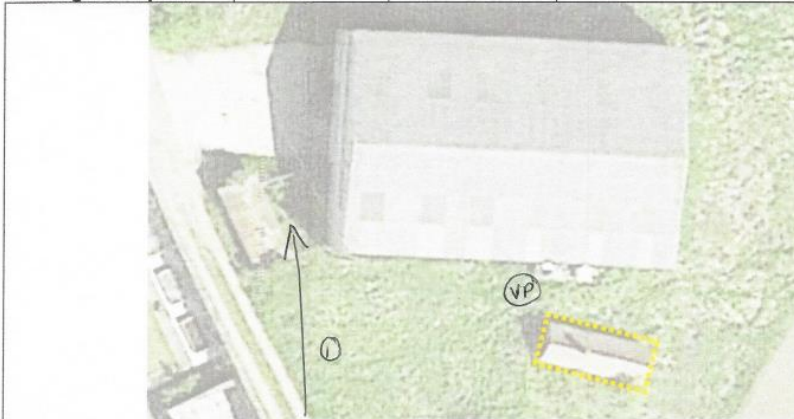
Site: Meredith Barn	Date: 16 th August 2023	Dusk / dawn From : 04:20 To : 06:00	Cloud: 4/8 Precip: NONE BFT: 2 Temp start: 18 °C Fin: 20 °C
Bat flight line plan	Detector: Batscanner Stereo	Sunset / sunrise: 05:54	Surveyor: Beth Hempshall



No. on plan	Species	Time	Count	Height	Observations
	Noctule	04:57	1	-	Detection but no observation
①	Noctule	05:02	1	H	Direct flight south to north
②	C. pip	05:22	1	L	Foraging bat along field edge margin

Bat flight survey record sheet

Site: Meredith Barn	Date: 16-08-23	Dusk / dawn From : 04:20 To : 06:00	Cloud: 4/8 Precip: NONE BFT: 2 Temp start: 18 °C Fin: 20 °C
Bat flight line plan	Detector: ECHO METROR PRO 2	Sunset / sunrise: 05:54	Surveyor: Ian Hempshall

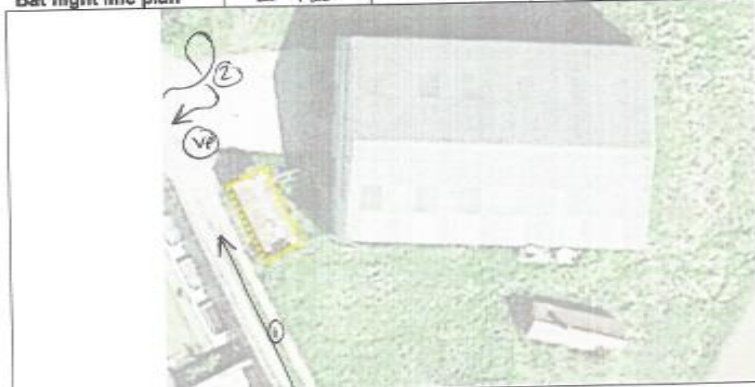


No. on plan	Species	Time	Count	Height	Observations
①	Noctule	05-02	1	H	A commuting flight overhead
	C. Pip	05-02	1	L/M	Foraging behaviour of Common Pip at front of property along lawn track
		↓			
		05-41			

Bat flight survey record sheet

Site: MEREDITH BARN	Date: 02-09-23	Dusk / dawn From : 21:34 To : 23:04	Cloud: 2/8 Precip: NONE BFT: 1-2 Temp start: 18 °C Fin: 19 °C
Detector: ECHO METER 2 PRO		Sunset / sunrise: 21:54	Surveyor: IAN HEMPSHALL

Bat flight line plan

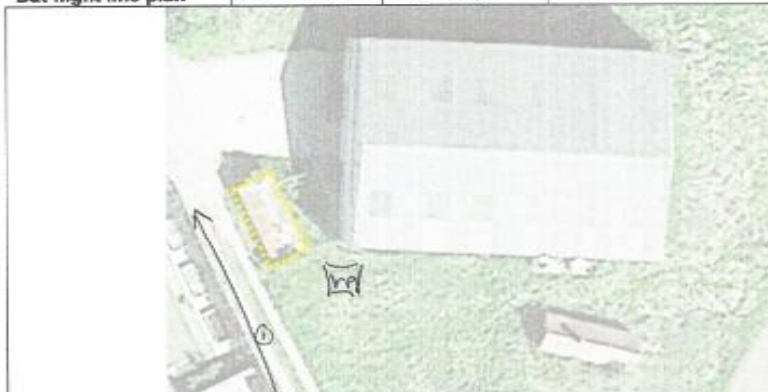


No. on plan	Species	Time	Count	Height	Observations
1.	Common Pip	21:48	1	L	DIRECT FLIGHT ALONG FARM FIELD ENTRANCE TRACK
	Common Pip	21:50	1	L	" "
					" "
2.	Common Pip	22:21	1	4/M	FORAGING FRONT OF LARGE PORTAL FRAME BUILDING
	Common Pip	22:32	1	L	FORAGING FLIGHT ALONG FARM FIELD ENTRANCE

Bat flight survey record sheet

Site: Meredith Barn	Date: 02-09-23	Dusk / dawn From : 21:34 To : 23:04	Cloud: 2-3/8 Precip: NONE BFT: 1 Temp start: 18 °C Fin: 18 °C
Detector: BatScanner		Sunset / sunrise: 21:54	Surveyor: Beth Hempshall

Bat flight line plan



No. on plan	Species	Time	Count	Height	Observations
①	C-Pip	21:48	1	L	Committed flight of C-pip along farm track
	"	21:50	2-3	L	Continued committed flight with occasional propping
		22:48			