# OLD COACH HOUSE, BISHOPS CANNINGS, WILTSHIRE

# PROPOSED CONVERSION

## PROTECTED SPECIES SURVEY & MITIGATION STRATEGY

**On behalf of**

**MR G. WALLIS**

## Final Report

## 3rd May 2022

**Prepared by**

MALFORD
Environmental Consulting
www.malfordenvironmentalconsulting.co.uk

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# 1 Introduction

The client is seeking planning permission from Wiltshire Council to convert the Old Coach House, which is located in Bishops Cannings, Wiltshire, to a residential dwelling.

Malford Environmental Consulting was commissioned to undertake appropriate baseline ecological surveys, which included a Phase 1 (building/bat roost and nesting bird inspection) survey of the building, plus additional Phase 2 bat surveys as appropriate. The surveys were undertaken or led by:

- Dr Stephen Dangerfield: Natural England licensed bat worker (NE Class Licence Level 1 WLM-CL17, Licence No. 2015-11600-CLS-CLS), Chartered Environmentalist and full member of the Chartered Institute of Ecology and Environmental Management (CIEEM);
- Anton Kattan: Natural England licenced bat worker (NE Class Licence Level 2 WLM-CL18, Licence No. 2015-12201-CLS-CLS) and full member of the CIEEM; and
- Jonathan Adey: Natural England licensed bat worker (NE Class Licence Level 1 WLM-CL17), Chartered Environmentalist and full member of the CIEEM.

The surveyors have a combined 70 years' professional experience of undertaking bat surveys.

The surveys concentrated on identifying the presence of roosting bats and other protected species (e.g. nesting birds) inhabiting or using the existing building. This report sets out the findings of the surveys, and where necessary makes recommendations for actions to ensure the proposed development complies with nature conservation legislation and meets the requirements of planning policy.

Section 40 of the Natural Environment and Rural Communities Act 2006 (NERC Act) requires all public bodies to have regard to biodiversity conservation when carrying out their functions. Under the NERC Act the local planning authority should not determine a planning application if there are any surveys outstanding for European protected species. The National Planning Policy Framework (NPPF) requires planning to protect and enhance the natural environment providing net gains for biodiversity (Para 109) by encouraging opportunities to incorporate biodiversity in and around developments (Para 118). This is reflected in the Wiltshire Core Strategy (Policy 50).

# 2 Scope of Work and Methodology

## 2.1 Desk study

Bat records from the last 25 years within 1km of the Coach House were provided by the Wiltshire and Swindon Biological Records Centre (WSBRC).

## 2.2 Phase 1 survey

The Phase 1 bat roost inspection and protected species survey was undertaken on 12th March 2021. The survey was undertaken by licensed bat surveyors in accordance with Bat Conservation Trust guidelines[1]. The survey included an internal and external inspection of the building looking for signs of, or the potential for the building to support, roosting bats. A ladder, high-powered torch and binoculars were all available and were used where necessary to examine roof space, crevices and other small spaces suitable for roosting bats to occupy.

Evidence of bats, considered during the search included:

- Droppings.
- Urine staining.
- Feeding remains (such as moth wings).
- Smudge marks and scratches around potential bat roost holes.
- Live roosting bats, bat skeletal remains or dead bats.

Conditions indicating an absence of bats can include the presence of spider webs, bird nesting material and wasp nest material blocking access holes or possible roosting gaps, or sheltering live butterflies/moths or cluster flies.

Bat roost potential was established using the following scale:

1. *Negligible potential/not a roost*: no suitable features
2. *Low potential*: one or more suitable features that could be used by individual bats opportunistically
3. *Moderate potential*: one or more suitable features that could be used by bats, but unlikely to support a roost of high conservation status
4. *High potential*: one or more suitable features that are suitable for use by larger numbers of bats on a regular basis
5. *Confirmed roost*: evidence of current/recent bat occupation

The survey also assessed the building for the presence of nesting birds.

[1] Collins, J. (ed.) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn*). The Bat Conservation Trust, London

## 2.3 Phase 2 bat survey

Following the Phase 1 inspection (see Section 3.2) the building enclosed roof space (attic) was classed as a confirmed bat roost, with visual assessment of dropping highly suggesting serotine (*Eptesicus serotinus*) – confirmed through dropping DNA analysis.

Furthermore, a small ground floor room was classed as having 'high' potential (Category 4) for supporting bats with six old droppings (species identified through DNA analysis) and a few butterfly wings found on the floor.

As such further survey was required to determine presence-absence of bats, and the characterisation of the known roost (building attic) to be completed. The additional Phase 2 bat survey was designed to answer the following questions:

- Which parts of the buildings are used by roosting bats?
- Which bat species use the building for roosting?
- How many bats does the building/roost support?
- What type of roost(s) is present?

The Bat Conservation Trust guidelines state that for buildings with a 'high' bat roost potential three separate surveys, including at least one dusk emergence and one dawn re-entry survey, are needed to confirm an absence.

The Bat Conservation Trust bat survey guidelines state that survey effort to establish roost characterisation is site specific, and that dusk (emergence) and dawn (re-entry) surveys should be repeated until the information to answer the above questions is reliably collected, although appropriate methods and equipment should be used to minimise the number of repeat visits. The optimum period for Phase 2 bat survey is May-August (potentially September).

The building was subject to the following survey programme:

- *Dropping DNA analysis*

Two samples of bat droppings was collected on 12th March 2021; one from the attic (Ref. MEC-Coach Hs, BC_2) and on from the small ground floor room (Ref. MEC-Coach Hs, BC_1).

These were sent to the ecological forensics team at the School of Life Sciences, University of Warwick for DNA analysis.

- *Building internal inspections*

Four internal inspections of the ground floor rooms and two detailed inspections of the attic (dates in **bold**) were undertaken on **12th March**, 7th May, 1st June and **24th June** 2021. If bats were present a roost count of the number of bats was made.

- *Dusk emergent surveys*

The building was subject to two dusk bat roost emergence (and activity) surveys, which were conducted on the evenings of 10h May and 24th June 2021. The surveys were conducted during suitable weather conditions.

For each emergence survey, two bat surveyors were positioned outside the building covering both gable ends and the south-facing elevation (potential attic roost exit points or other potential roosting locations).

The surveys were conducted using appropriate equipment including hand held detectors capable of delivering full spectrum and heterodyne outputs supported with recording equipment (Wildlife Acoustics Echo Meter Touch 2 Pro and BatBox Duet). The surveys assessed bat activity to confirm (1) whether and/or how the building is being used by bats, and (2) by what species and with what level of activity (numbers of bats).

- *Dawn re-entry survey*

The building was subject to one dawn bat roost re-entry survey, which was conducted on the morning of 1st June 2021. The survey was conducted during suitable weather conditions.

For the re-entry survey, a bat surveyor was positioned outside the south-facing elevation of the building. The survey was conducted using appropriate equipment including hand held detectors capable of delivering full spectrum and heterodyne outputs (Wildlife Acoustics Echo Meter Touch 2 Pro and BatBox Duet). The survey assessed bat activity to confirm (1) whether and/or how the building is being used by bats, and (2) by what species and with what level of activity (numbers of bats).

- *Static bat detector*

A Wildlife Acoustics SM4BAT-FS bat detector/recorder was installed within the building attic on 7th May 2021, and this recorded continuously for 48 nights until 24th June 2021.

The detector uses a SMM-U1 ultrasonic microphone. This detector was set to record from half hour before sunset to half hour after sunrise, and the unit automatically activates when there is a trigger above 16kHz for a period of greater than 0.5 seconds. The unit is triggered by the bat's echolocation call and records continuously over the duration of bat activity.

Wildlife Acoustic's Kaleidoscope Pro 3 analysis software was used for species identification. The software runs a classifier that filters the bat calls in to species groups. The Kaleidoscope Pro 3 classifier was used to sort batches of data collected on the data logger into species groups. The bat calls were then verified manually measuring characteristic call parameters such as peak frequency, call duration and inter-pulse interval. However, due to overlap in the call parameters of some species, the following constraints and assumptions for species identification apply to this study:

- Identification of bat species in the genus *Myotis* sp. cannot be made with confidence because of overlap and similarities in their call parameters and where this occurs the call is assigned to the genus, not species.
- There can also be overlap between *Nyctalus noctula*, *Nyctalus leisleri* and *Eptesicus serotinus.* Where there is uncertainty in the verification a call may be assigned to a combined *Nyctalus* species / *Eptesicus serotinus* group.
- Brown long-eared bat calls (*Plecotus auritus*) cannot be distinguished from grey long-eared bats (*P. austriacus*). However, there are no confirmed records of grey long-eared bats in the Wiltshire mammal atlas (Harris and Linham, 2017) and any long-eared bat calls will be assigned to brown long-eared bats for the purpose of this assessment.

The automated data logger provides information on species identification and the timing / , frequency of use of the building attic.

A second Wildlife Acoustics SM4BAT-ZC bat detector/recorder was installed within the small ground floor room of the building attic on 7th May 2021. However, this was found to have been stolen on the return visit on 1st June. This box was not replaced.

This survey strategy, which covers DNA analysis of droppings, four inspections, two dusk emergent surveys, one dawn re-entry survey and deployment of a data-logger for 48 nights during May and June 2021, is (1) in accordance with the BCT bat survey guidelines, and (2) sufficient to underpin a Natural England EPS (Bats) Mitigation Licence application.

# 3 Baseline Conditions

Photographs of the house exterior/interior and the immediate surrounding land are presented in Appendix A.

## 3.1 Building description

### 3.1.1 Exterior

This is a two-storey building with a small single-storey extension, which is ca. 20m long by 6m wide. The building is orientated on an east-west alignment, with the extension on the eastern end. There is a small open covered porch area on the front of the building. All external walls are constructed from brickwork, which are well sealed leaving no gaps. The main building has a pitched, hipped roof, with a fully exposed gable wall at the western end, while the eastern gable end is partially obscured by the lower extension (roof line still exposed). The extension also has a pitched roof, with a fully exposed gable wall at the eastern end (somewhat shrouded by adjacent tree/shrub vegetation). The roofs are clad in slate tiles and slate (or equivalent) ridge capping. All tiles and ridge caps are intact and close-fitting. There are no gaps under the tiles or ridge capping. The roof sits on timber roof plates, which support guttering along both roof lines.

The building is currently unused. All doors (three single doors and one metal up-and-over garage door) and windows on the main building are intact and sealed allowing no access into the building interior. There are two small ventilation gaps on the north-facing wall that lead directly into the main ground floor room. There is a round opening at the apex of the eastern gable end wall, which is now enclosed by the extension building, and this leads directly into the attic.

The eastern extension has a double wooden door, and there are small gaps around the doors and between the door frame and wall. One of the window panes is broken and there are gaps in the eastern gable end wall. All of these gaps lead directly into the building interior.

The gaps on the building exterior are as follows:

- Gaps around the top of each gable end wall, between the timber roof plate and brick walls, of the main building, which lead directly into the attic of the main building;
- Two small ventilation holes on north-facing wall that lead into the large ground floor room of the main building;
- Gaps around the double wooden doors on the extension building that lead into the building interior;
- Gaps in brickwork of eastern gable end wall of extension building that lead directly into the building interior; and
- Broken window on northern wall of extension building that leads directly into the building interior.

### 3.1.2 Interior

The main building has three ground floor rooms: a large room in the eastern half of the building, a small central room, and a garage at the western end of the building. The ground floor rooms are all reasonably well-sealed with plaster boards, timber boards or lathe & plaster, and therefore provide negligible opportunities for roosting bats. There are some holes that connect internal rooms, as described below.

The main building has a single attic space that runs the length of the main building. The attic is ca. 3.5m high, and constructed from softwood timbers (6 uprights with bracing, purlins and rafters) that are tightly fitted together and leave no gaps. There is a single ridge beam that sits below the apex of the rafters. The roof is lined with modern, synthetic (Tyvac) roofing liner that is tightly fixed above the rafters and ridge beam. End walls are sealed brick. There is no insulation on the floor of the attic.

There are gaps leading into the attic interior or connecting with other parts of the building as follows:

- Gaps around each gable end wall between the timber roof plates and tops of brick walls;
- Round opening on eastern gable end wall connecting to interior of extension building;
- Holes in the attic floor that connect to the interior of the large eastern room and the small central room; and
- Open hatch connecting the attic and the garage interior.

The small eastern extension building is open to the roof structure, which comprises softwood timbers (purlins and rafters) that are tightly fitted together and leave no gaps. There is a single, narrow ridge board. The roof is lined with modern, synthetic (Tyvac) roofing liner that is tightly fixed above the rafters. There are a few holes in the internal brickwork within this part of the building.

### 3.1.3 Surrounding land

The surrounding land is mainly hard-standing associated with parking for the target building, adjacent properties and the road, with small areas of amenity grassland and formal flower beds.

To the south and east of the property are mature trees and shrubs including common lime (*Tilia* x *europaea*), sycamore (*Acer pseudoplatanus*), beech (*Fagus sylvatica*), sweet chestnut (*Castanea sativa*), ash (*Fraxinus excelsior*), cypress (*Cupressus* sp), plum (*Prunus* sp), holly (*Ilex aquifolium*), elder (*Sambucus nigra*) and rose (*Rosa* sp). Some of this vegetation is shrouding and overhanging the east-facing gable end of the building.

## 3.2 Desk study results

The WSBRC data identified five species of common bat recorded within and around Bishops Cannings; common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), Natterer's (*Myotis nattereri*), noctule (*Nyctalus noctula*) and brown long-eared (*Plecotus auritus*). Only common pipistrelle has a known roost in the local vicinity.

Two other species of bat have been recorded associated with the Kennet & Avon Canal; Daubenton's (*Myotis daubentonii*) and a single record of barbastelle (*Barbastella barbastellus*).

### 3.3 Phase 1 inspection (12th March 2021)

The house has a range of external gaps, but these gaps all lead directly into the building interior including the attic.

The ground floor rooms of the main building are generally well-sealed and provide negligible opportunities for roosting bats, whereas there are exposed roof timbers and some holes in the brickwork within the smaller extension building.

The attic has no internal recesses due to the close-fitting timbers, close-fitting Tyvac roof liner and sealed end walls, but there are exposed roof timbers, including timber uprights and ridge beam, that perching/hanging bats could potentially use. There are also access points and flyways into the attic.

There was no evidence of bat activity within the western end garage room of the main building.

Within the small central room six very old mid-sized bat droppings were found on the floor along with a few peacock butterfly wings.

Within the large ground floor room and the eastern extension room no bat droppings were found, but a couple of peacock and small tortoiseshell wings were found in each room.

Within the attic there was evidence of bat roosting activity, with droppings found on the floor in small accumulations in five locations including at the base of the western gable end wall and at the base of four of the timber uprights. Accumulations ranged from 20-40 droppings in three locations and ca. 200 droppings in another two locations. Based on visual diagnostics the droppings appeared to be from serotine (*Eptesicus serotinus*). There were no live bats or dead bats seen or found in the attic.

The attic of the building is a confirmed roost (Category 5) for at least one species of bat, while the other parts of the building interior, especially the eastern extension room, is classed as having high potential (Category 4) to support roosting bats.

### 3.4 Bat dropping DNA analysis

DNA analysis of the two bat dropping samples taken on 12th March 2021, confirmed serotine (*Eptesicus serotinus*) in the attic (Ref. MEC-Coach Hs, BC_2) and confirmed the old droppings in the small ground floor room as being from Natterer's (*Myotis nattereri*) (Ref. MEC-Coach Hs, BC_1). Both sample analyses were confirmed with maximum likelihood (see Appendix B).

### 3.5 Phase 2 bat roost inspections

Daytime inspections on 7th May 2021 and 1st June 2021 recorded no bats in the ground floor rooms or eastern extension building, and no new signs of bat activity (e.g. no new droppings or insect remains) in any room.

The daytime inspection on the 24th June 2028 recorded no bats in the ground floor rooms or eastern extension building, and no new signs of bat activity (e.g. no new droppings or insect remains). The attic was inspected and no live bats were observed clinging to roof timbers, and a few fresh bat droppings were observed at the western end of the attic.

## 3.6 Bat roost emergence surveys

### 3.6.1 Survey #1

A dusk emergence and activity survey was conducted on 10th May 2021 between 20:20 and 21:55, with sunset at 20:46. Survey weather conditions were acceptable with the temperature ranging between 12°C and 11°C during the survey. The evening was overcast (70% cloud) with a light breeze and no rain. The key findings of the survey are as follows:

*Emergence*

- One common pipistrelle (*Pipistrellus pipistrellus*) bat emerged at 21:00 (14 minutes after sunset) from a gap between the door frame and wall of the eastern extension room (see photograph in Appendix A).
- One common pipistrelle bat emerged at 21:10 (24 minutes after sunset) from the same gap between the door frame and wall of the eastern extension room.

**Note**: only one common pipistrelle bat was observed during the survey, so it is possible that the surveyor saw a single bat emerging twice, as it is possible for a bat to re-enter the eastern room via gaps in the end or rear wall.

For the purposes of the assessment it is assumed that two separate bats emerged.

*Activity*

- A single common pipistrelle bat recorded intermittently foraging along tree canopy vegetation and road on the eastern boundary of the building until the end of the survey.
- Single pass of a noctule (*Nyctalus noctula*) bat at 21:01 and a brown long-eared (*Plecotus auritus*) bat at 21:20.

### 3.6.2 Survey #2

A dusk emergence and activity survey was conducted on 24th June 2021 between 20:45 and 22:45, with sunset at 21:30. Survey weather conditions were excellent with the temperature ranging between 17°C and 18°C during the survey. The evening was overcast (60-100% cloud) with a gentle-moderate breeze, and no rain. The key findings of the survey are as follows:

*Emergence*

- One serotine (*Eptesicus serotinus*) bat emerged at 22:03 (33 minutes after sunset) from the western-facing gable end wall from a gap between the wall and timber roof plate on the southern roof slope (see photograph in Appendix A). This bat then commuted southwards off-site after a couple of minutes.

*Activity*

- One common pipistrelle (*Pipistrellus pipistrellus*) was heard distant at 21:34 (4 minutes after sunset) and was first observed at 21:45 arriving on site from the south. This bat was observed foraging under tree canopy vegetation and along the road on the eastern boundary of the building until the end of the survey.

### 3.7 Bat roost dawn survey

A dawn swarming and re-entry survey was conducted on 1st June 2021 between 03:25 and 05:15, with sunrise at 04:54. Survey weather conditions were good with the temperature at 13°C during the survey. The morning was clear (0% cloud), still and dry.

The key findings of the survey are as follows:

*Re-entry*

- No bat was recorded entering the building.

*Activity*

- One Natterer's (*Myotis nattereri*) bat was observed foraging around and under vegetation on the southern side of the building from 03:40 until 04:00, when the bat flew off-site.
- One common pipistrelle (*Pipistrellus pipistrellus*) bat was observed foraging around and under vegetation on the southern side of the building from 04:09 until 04:40, when bat calls became distant and then stopped.
- Two passes of a soprano pipistrelle (*Pipistrellus pygnmaeus*) bat at 03:41 and 03:42.
- One pass of a brown long-eared (*Plecotus auritus*) bat at 03:45.

### 3.8 Bat roost static detector

The SM4BAT-FS static bat detector, present in the attic for 47 nights between 7th May and 23rd June 2021, recorded the following:

- Serotine (*Eptesicus serotinus*) activity at or close to sunset times on 23 nights (49%), with only night-time activity recorded on another 11 nights (23%).
- Soprano pipistrelle (*Pipistrelllus pygmaeus*) activity at or close to sunset times on nine nights (19%).
- Common pipistrelle (Pipistrellus pipistrellus) activity at or around sunset times on one night.

The only other bat activity recorded included very occasional *Myotis* sp (assumed to be Natterer's [*Myotis nattereri*]) and noctule (*Nyctalus noctula*) bat night-time activity on five nights each, which relates to bat foraging or commuting.

The static bat detector data supports the building inspections, dusk emergence and dawn re-entry survey results that a single serotine is day roosting within the attic during the summer, whilst also suggesting / confirming occasional day roosting of soprano and common pipistrelle bats.

### 3.9 Other protected species

There is no evidence of active bird nesting within the main building ground floor rooms or attic or on the building exterior.

However, an active robin (*Erithacus rubecula*) nest was recorded in the eastern extension room.

All wild birds, their nests and eggs are protected under the Wildlife and Countryside Act, 1981 as amended. This act makes it an offence to:

- Intentionally, or recklessly, 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

There are no other protected species associated with the building or the proposed development site.

# 4 Conclusions

## 4.1 Bats

### 4.1.1 Conservation status of roosting bats

*Serotine*

Common in the south of England. The pre-breeding population was estimated at 15,000 in 1995 (14,750 in England) (Harris et al., 1995). The Bat Conservation Trust's NBMP (National Bat Monitoring Programme) records the species as common with the population considered to have been stable over the period 1998-2016, but results must be viewed with caution (www.bats.org.uk).

*Soprano pipistrelle*

Soprano pipistrelle bats are widespread throughout Britain and Ireland (except for the Shetlands and Western Isles of Scotland) with a population estimate of 2 million and a stable population trend in recent years[2]. Although it remains one of the most abundant and widespread bat species in the UK, the soprano pipistrelle is a UK BAP species because it is thought to have undergone a significant decline in numbers during the last century. There has been a significant upward trend when measured against the 1999 base year (www.bats.org.uk).

*Common pipistrelle*

The common pipistrelle bat is one of the most common bat species in the UK and is widely distributed throughout Britain (Richardson, 2000). The UK population, excluding Northern Ireland, is estimated to be 2,430,000 (Battersby *et al*., 2005). Pipistrelle bat populations declined dramatically in the twentieth century, but have shown a positive trend this century. There has been a significant upward trend when measured against the 1999 base year (www.bats.org.uk).

### 4.1.2 Roost evaluation

The building is a classed as a confirmed bat roost for three species of bat, namely serotine, soprano pipistrelle and common pipistrelle bats, with most activity linked to the attic and the eastern extension room. The building does not support a breeding (maternity/mating) or winter roost, but instead is classed as an occasional summer roost for all three species.

Based on the findings from the bat surveys the significance of the bat roosts have been classified in accordance with the site assessment recommended in in industry-standard bat survey and mitigation guidelines[3,4]. The roosts are 'summer day/night roost' for 'very small numbers of relatively common species (not a maternity/mating or hibernation site)', and therefore these roosts are considered to be of low conservation significance and an ecological resource for bats that is important in a Local (Site) context.

[2] www.bats.org.uk: *Population Trend Monitoring*
[3] English Nature (2004). *Bat Mitigation Guidelines*
[4] Collins, J. (ed.) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn*). The Bat Conservation Trust, London

#### 4.1.3 Roost impact assessment

The Old Coach House is a confirmed summer roost for one serotine and individual/very low numbers of common pipistrelle and soprano pipistrelle bats. The conversion of the building will result in the loss of a roost/place of rest, and could potentially also result in the injury/death/disturbance to bats if undertaken without appropriate safeguards, which would contravene legislation (see Appendix C).

The proposed scheme is predicted to have a 'low' adverse impact[5] as work will not affect a roost of high conservation status (i.e. not a breeding or winter hibernation roost). The planned work does not pose a threat to the favourable conservation status of the three species of bat identified and will not affect the ability of these species to maintain their current range and distribution in the locality. The conversion of this building and associated roosts is considered to have no significant long-term impact.

Conversion of the house will be covered by a Natural England licence under the provision of the Conservation of Habitats and Species Regulations 2017.

Mitigation to protect and maintain roosting bats and action to provide an overall enhancement for bats, in accordance with legislation and planning policy, is set-out in Section 5.1.

### 4.2 Nesting birds

There is evidence of bird nesting within the interior of the eastern extension room. Action to ensure protection of nesting birds is discussed in Section 5.2.

[5] English Nature (2004). *Bat Mitigation Guidelines*

# 5 Mitigation and Enhancement

## 5.1 Bats

### 5.1.1 Introduction

Mitigation concepts have been defined based upon industry-standard bat mitigation guidelines[6] that establish an appropriate level of mitigation for adverse impacts on a low conservation status roost as:

- *Loss of a summer day/night roost for low numbers of common and rarer species:* Provision of new roost facilities where possible. Need not be exactly like-for-like, but should be suitable, based on species' requirements. Minimal timing constraints or monitoring requirements.

Serotine bats preferred summer roosts include crevices and other narrow holes in houses, and the bats will roost in a variety of locations including small cavities or crevices with high access points such as gables, below the ridge of a roof, in crevices around chimneys, in cavity walls, in gaps under roof tiles, behind fascia boards, in ventilation holes and sometimes use bat boxes. They are not usually found in a roof void[7,8,9]

Common and soprano pipistrelle bats summer roosts are usually crevices in building especially under tiles and behind boards on a gable. Both species readily use bat boxes[10,11].

### 5.1.2 Pre-demolition work

Prior to construction work on the building commencing, two general purpose cavity bat boxes (see Section 5.1.4) will be installed within the curtilage of the property. Each box will be suitably sited on a mature tree under the guidance of a licenced bat ecologist. The boxes will provide alternative roosting habitat before the permanent bat roosting features integrated into the building design (see Section 5.1.3) are operational. The boxes will remain *in situ* permanently.

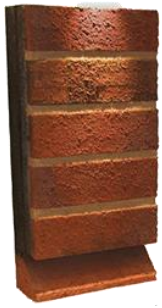
[6] English Nature (2004). *Bat Mitigation Guidelines*
[7] Joint Nature Conservation Committee (2007). *Second report by the UK under Article 17 on the implementation of the Habitats Directive from January 2001 to December 2006. Conservation Status Assessment for Species: S1327 – Eptesicus serotinus – serotine bat*.
[8] Collins, J. (ed.) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn*). The Bat Conservation Trust, London
[9] www.bats.org.uk: *Species Sheet for Serotine*
[10] Joint Nature Conservation Committee (2007). *Second report by the UK under Article 17 on the implementation of the Habitats Directive from January 2001 to December 2006. Conservation Status Assessment for Species: S1309 – Pipistrellus pipistrellus – common pipistrelle bat*.
[11] Joint Nature Conservation Committee (2007). *Second report by the UK under Article 17 on the implementation of the Habitats Directive from January 2001 to December 2006. Conservation Status Assessment for Species: S5009 – Pipistrellus pygmaeus – soprano pipistrelle bat*.

### 5.1.3 Replacement bat roosting habitat (mitigation)

To provide replacement roosting habitat for the three target bat species the following features will be incorporated into the new building design:

- Two bat roosting bricks will be included on the building, with one bat brick integrated into each gable end wall. Each bat brick will be installed as high as possible to the roof line or gable apex.
- Two mid-ridge capping tiles will be installed with a void underneath them. The void will be enclosed leaving a 20mm slot beneath the south-facing leading edge of each ridge tile.

Alternative bat bricks can be viewed on-line (e.g. www.nhbs.com or www.wildcareshop.co.uk), with two examples shown below.



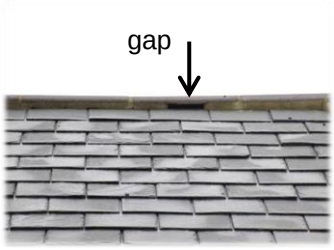
Habibat bat brick (custom brick facing)



Ibstock Enclosed Bat Box C

Photographs of a mid-ridge capping tile on a stone and slate roof, which have been installed with a void underneath, are shown below.




The location of each bat roosting feature should be included on the final design drawings.

Clear lines of flight to the entrances of the bat roosting features must be maintained at all times, and no external lighting will be used adjacent to or shine directly at the entrance slots. Overhanging vegetation on the eastern side of the building should be trimmed back to provide clear flight lines to a new bat box.

### 5.1.4 New bat roosting habitat (enhancement)

Natterer's bats have been recorded foraging outside the building, with evidence of occasional foraging within the building as well. Natterer's bats roost in woodlands as well as human settlements being commonly associated with old stone buildings with gaps in large timber beams or between joints frequently used.[12]

Therefore, to provide an overall enhancement for the local bat assemblage, two general purpose cavity bat roosting boxes will be installed on mature trees within the property curtilage to provide roosting habitat for crevice-dwelling bats such as Natterer's.

Different general purpose cavity bat roosting boxes are available and can be viewed on-line (e.g. www.nhbs.com or www.wildcareshop.co.uk), with one example shown here being the Large Multi Chamber Woodstone Bat Box.



The bat box should be installed as high above the ground as possible, with the entrance slot orientated to be south, west or east-facing. Clear lines of flight to the bat box entrance must be maintained at all times, and no external lighting will be used adjacent to or shine directly at the entrance slots.

### 5.1.5 Timing of construction activities

Due to the fact that the existing roosts are a summer (non-breeding and non-hibernation) roost for small numbers of relatively common bats construction work on the building can be undertaken at any time of year.

All work will be undertaken in normal working, daylight, hours, which is in accordance with best working practice[13] and allows the licenced bat worker to address any issues if bat(s) are found during the construction work.

### 5.1.6 Supervision of construction

Prior to construction starting the licenced bat worker will provide a toolbox talk to the applicant / contractor that will cover aspects such as: bats covered by the licence; bats and the law; evidence of bat and what to look out for; good working practice; and what to do in the event of finding bats.

Immediately prior to demolition the internal attic, eastern extension room and any associated holes/gaps will be inspected (in the daytime) by the licenced bat worker. If bats are found the licensed bat worker will capture and move the bat(s) to the erected bat boxes or exclude the bats, with work undertaken in accordance with the NE licence method statement.

The licensed bat worker will oversee the removal of roof tiles / timber roof plates, with removal of roof tiles and roof plates along each gable end wall undertaken under the direct supervision of the bat ecologist.

The licensed bat worker will be available on-call for the duration of the construction programme. If a bat or bats are found then work will stop immediately. Work will not proceed again until an assessment has been made by the licenced bat worker and the bats have been appropriately dealt with as per the NE licence method statement.

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[12] Joint Nature Conservation Committee (2007). *Second report by the UK under Article 17 on the implementation of the Habitats Directive from January 2001 to December 2006. Conservation Status Assessment for Species: S1322 – Myotis natereri – Natterer's bat*

[13] English Nature (2004). Bat Mitigation Guidelines

If during the construction work, when the licenced bat worker is not on-site, a bat is discovered that appears to be injured or distressed, then the animal should be carefully placed in a small box (e.g. shoe box) by either handling the bat with thick gloved hands or covering the bat with the box and sliding a thin piece of cardboard under to create a floor to the box. A clean piece of cloth loosely crumpled will be placed in one corner of the box (to allow the bat to crawl under and hide), a few small air holes will be put into the lid of the box, and a very shallow container (e.g. foil milk bottle top) of water will be placed in one corner of the box.

#### 5.1.7 Post-construction review and monitoring

The replacement and new bat roosting features included within the new building design / development will be inspected and signed-off by a licenced bat worker.

As the planned work is only affecting a summer roost of low conservation value (non-breeding and non-hibernation) there is no requirement for post-scheme monitoring of new bat roosting features, which is in accordance with the Bat Mitigation Guidelines.

#### 5.1.8 Natural England licence

The conversion of the Old Coach House, which supports confirmed bat roosts, will be undertaken under a Natural England licence, under the provisions of the Conservation of Habitats and Species Regulations 2017.

A licence from Natural England can only be applied for once full planning permission has been granted, and there are no outstanding planning conditions relating to bats.

The project can only progress where the licence application is considered to meet the requirements of the following three tests:

1. The consented works must be for preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment;
2. There must be no satisfactory alternative; and
3. 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

Although Natural England are the licensing authority, recent case law (*R (on the application of Simon Woolley) v Cheshire East Borough Council, June 2009*) has established that planning authorities now need to consider all three tests before planning permission affecting bats can be granted.

As part of the Natural England licence application process the appointed Natural England licensed bat worker will review the mitigation strategy as set out in this report.

There may be a need for additional bat inspection/survey to be undertaken to verify or supplement the original survey findings as part of the NE licence application. This is especially true if there is a significant delay between existing baseline surveys (as reported in this report) and receiving planning permission or applying for a NE mitigation licence.

## 5.2 Nesting birds

To ensure compliance with the Wildlife and Countryside Act, 1981 (as amended) the following action must be undertaken:

- Construction work on the building during the bird breeding season, which is generally considered to be from 1st March to 31st August, should proceed with care assessing the building for the presence of nesting birds prior to work commencing (maximum 2 weeks in advance). The presence of nesting birds (includes birds constructing nests, sitting on eggs or with hatchlings) may result in some work being delayed to allow birds to vacate the nest.

Regardless of the timing of work or the findings or previous surveys, if nesting birds are found within or on the building during the construction phase then work should stop and an ecologist consulted.

## Appendix A Site photographs



Building showing front, south-facing, elevation (left) and rear, north-facing, elevation (right)



Eastern extension building with arrow showing where 2 common pipistrelle bats emerged on 10th May 2021 (left) and interior of small porch on front (right)



West-facing end elevation with arrow showing where 1 serotine bat emerged on 24th June 2021 (left) and east-facing end elevation (right)




Large ground floor room in main building (left) and small central room in main building (right)




Western end garage room (left) and eastern extension room (right)




Roof structure of eastern end room showing open round entrance leading into attic (left) and gaps in east-facing side wall (right)



Attic over main building with close-fitting timbers and synthetic liner

## Appendix B Bat Dropping DNA Analysis

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CoolWarwicker
Ecological Forensics

26 April 21

Re: Identification Results for Stephen Dangerfield, Malford Environmental Consulting Limited

Job number 16459, received 12 April 2021
Sample labelled: MEC-Coach Hs, BC_1
PCR amplification successful. DNA sequence:
ATGACCAACATTCGAAAATCTCACCCCCTAATGAAAATTATCAATAACTCCTTTATTGA
CCTACCCGCTCCATCAAATATCTCTTCCTGATGGAATTTCGGATCTCTTTTAGGAATC
TGC

Phylogenetic analysis identification: *Myotis nattereri*

Confirmed by maximum likelihood, maximum parsimony, bootstrap 100%.

Best regards,

Professor Robin Allaby

The results and conclusions in this report are based on an investigation of mtDNA sequence analysis. The results obtained have been reported with accuracy. The interpretation represents the most probable conclusion for the DNA sequence obtained rather than the sample provided given current levels of species data. It should be borne in mind that different circumstances might produce different results. Therefore, care must be taken with interpretation of the results especially if they are used as the basis for commercial recommendations.

**Professor Robin Allaby**

School of Life Sciences,
Gibbet Hill Campus,
University of Warwick,
Coventry CV4 7AL
Tel: 02476575039
Fax: 02476574500
Email: r.g.allaby@warwick.ac.uk

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EcoWarwicker
Ecological Forensics

26 April 21

Re: Identification Results for Stephen Dangerfield, Malford Environmental Consulting Limited

Job number 16460, received 12 April 2021
Sample labelled: MEC-Coach Hs, BC_2
PCR amplification successful. DNA sequence:
ATGACCAACATTCGAAAGTCCCACCCTCTACTAAAAATTGTCAACGACTCATTTATTG
ATCTACCTACCCCCTCAAGCATCTCTGCATGATGAAACTTTGGGTCCCTCCTAGGAA
T

Phylogenetic analysis identification: *Eptesicus serotinus*

Confirmed by maximum likelihood, maximum parsimony, bootstrap 100%.

Best regards,

Professor Robin Allaby

The results and conclusions in this report are based on an investigation of mtDNA sequence analysis. The results obtained have been reported with accuracy. The interpretation represents the most probable conclusion for the DNA sequence obtained rather than the sample provided given current levels of species data. It should be borne in mind that different circumstances might produce different results. Therefore, care must be taken with interpretation of the results especially if they are used as the basis for commercial recommendations.

**Professor Robin Allaby**

School of Life Sciences,
Gibbet Hill Campus,
University of Warwick,
Coventry CV4 7AL
Tel: 02476575059
Fax: 02476574500
Email: r.g.allaby@warwick.ac.uk

## Appendix C Bat Legislation

Bats (Chiroptera) are afforded protection through their inclusion in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000) and the Conservation of Habitats and Species Regulations 2017 (SI 2010/490). Section 41 of SI 2010/490 makes it an offence to:

- Deliberately capture, injure or kill a bat [S41(a)];
- Deliberately disturb a bat [S41(b)]; or
- Damage or destroy a breeding site or resting place of a bat [S41(d)].

Disturbance includes any action which is likely to:

- Impair their ability:
  - To survive, to breed or reproduce, or to rear or nurture their young; or
  - To hibernate or migrate
- Affect significantly their local distribution or abundance

In relation to S41(d) an offence has been committed if the person could reasonably have avoided the damage to or destruction of the breeding site or resting place concerned.

The UK BAP lists all bat species as being of Conservation Concern, and lists six species of bat (Bechstein's, noctule, soprano pipistrelle, brown long-eared, lesser horseshoe and greater horseshoe) as priority species. The Wiltshire BAP has a Species Action Plan covering all bats.

Developments that compromise the protection afforded to bats under the provisions of the Conservation of Habitats and Species Regulations 2017 will require a licence to do so lawfully from Natural England (NE). As part of the licensing process the results of an appropriate level of bat survey and subsequent mitigation strategy must be submitted to Natural England.