Fair Oak Barn, Forest of Bowland

Bat Report

Document:	**BOW17_1582 Fair Oak Barn, Forest of Bowland**			
Version	Date	Prepared by	Technical Reviewer	Approved by
V1	16/03/2024	Felicity Davies, *Graduate Ecologist*	Jodie Marks, *Senior Ecologist*	Jodie Marks, *Senior Ecologist*
V2- Survey results update	29/07/24	Felicity Davies, Graduate Ecologist	Paula Hollings, Senior Ecologist	Paula Hollings, *Senior Ecologist*
V3				
V4				
V5				

Contents

Executive Summary

This report presents the findings of a desk study, a building inspection for bat roost potential and a suite of bat surveys undertaken on a derelict stone barn located within Leagram in the Forest of Bowland, near Preston. This work was commissioned by James Innerdale to inform a planning application for the renovation of the barn to be structurally sound and weatherproof.

The building inspection was undertaken on the 18th March 2024 by Luke Hall BSc (Hons), Ecologist and Pieter van Zuylen, Field Assistant. No evidence of roosting bats was recorded, however the survey was subject to practical limitations.

The overall bat potential of the barn was determined to be of moderate suitability. Moderate suitability is defined as 'a structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status' (Collins, 2023). The barn had a high number of potential roosting features for individual or small numbers of crevice dwelling bats and has good connectivity to high quality foraging and commuting habitats, including hedgerows, grassland, broadleaved woodland and a treelined watercourse. The inspection determined that most of the potential roosting features were small and the features which could support multiple bats were more exposed and likely wet, rendering them less suitable for a maternity or hibernation (priority) roost.

To establish the presence/absence of bat roosts, three emergence surveys took place between May and July 2024, which concluded that the barn is utilised as a roost for a small number (<5) of a common bat species (common pipistrelle).

The following recommendations are made to ensure compliance with wildlife legislation and relevant planning policy:

Mitigation

- A bat license will be required before works commence, and works must comply with the method statement. Further detail is provided in Section 3 of this report.

- A nesting bird check for barn owl will be required immediately before works commence. If evidence of barn owl occupation is identified, further mitigation will be required.

Habitat enhancement

In accordance with The National Planning Policy Framework (2023), biodiversity enhancement measures should be incorporated into the proposed landscaping scheme to maximise the ecological value of the site. Potential enhancement measures are suggested in Chapter 4.

1. Introduction

1.1 Bowland Ecology Ltd was commissioned by James Innerdale in March 2024 to undertake a building inspection for bat roost potential at a Barn within Fair Oak Farm, Bowland, Ribble Valley. This survey work is required to inform a planning application associated with the renovation of the building.

1.2 All UK bat species are protected by legislation and thus capable of being material considerations in the planning process. A summary of the legislation protecting bats is included as Appendix C.

1.3 The purpose of this inspection and report is to: 1) assess the potential value of the site for bats, with particular reference to legal requirements and 2) identify potential impacts and provide recommendations pertaining to the proposed works. This report includes a description of survey methods, survey results and outlines recommendations to provide protection, mitigation and enhancements for bats.

Site description

1.4 The site is centred at Ordnance Survey Grid Reference: SD 64800 46015. (Figure 1, below). The building is located within Fair Oak Farm, surrounded by grazed and arable fields. A woodland is present to the east of the farm, leading to the River Hodder (which is located approximately 0.47 km to the east) with Bowland Fells located approximately 1.78 km to the northwest.

Figure 1: Location and Context of Application Site (red line). Ordnance Survey data.

2. Methodology

Desk Study

2.1 The aim of the desk study was to identify the presence of statutory and non-statutory designated wildlife sites, legally protected species, and Habitats and Species of Principal Importance (HPI & SPI) for the conservation of biodiversity (Section 41 NERC Act 2006) within the search area.

2.2 The Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) was reviewed for information on locally, nationally and internationally designated sites of nature conservation importance (statutory sites only), areas identified as HPI and any granted European Protected Species (EPS) mitigation licences for bats within 1 km of the site boundary. A 1 km search radius was considered sufficient given the small scale nature of the works.

2.3 The Ancient Tree Inventory was searched for records of nearby veteran trees.

2.4 Local records of bat species within 1 km of the site were obtained from a data search with the Lancashire Environment Record Centre (LERN).

2.5 Ordnance Survey (OS) maps and satellite imagery (http://maps.google.co.uk/maps) were reviewed to help identify potential bat foraging and roosting areas, potential flight lines, and important commuting corridors.

Building Inspection Survey

2.6 A daytime inspection of the barn was undertaken on the 18th March 2024 by Luke Hall BSc (Hons), Ecologist and Pieter van Zuylen, Field Assistant. The weather during the inspection was dry and clear (Oktas 1/8), with very little wind (Beaufort Wind Scale: 1), the air temperature was approximately 13°C. The survey followed the Bat Conservation Trust (BCT) 'Good Practice Guidelines' (Collins, 2023).

2.7 The inspection involved checking for field signs of bats such as droppings, urine stains, feeding remains, and scratch marks or smoothing of surfaces which may indicate bat use of features, with particular attention being paid to ledges, walls, doors, and the surrounding ground. An assessment of the potential of the building to support bats was also made during the survey i.e. searching for suitable roosting crevices. Binoculars and high-power torches (LED Lenser 7.2) were used to aid the surveys.

2.8 An assessment of the suitability of the surrounding habitats for bats was also undertaken, including the identification of potential foraging and roosting areas, potential flight lines and important commuting corridors.

2.9 Based on potential roosting features present, in combination with surrounding habitat suitability and desk study information, the surveyed buildings were assessed using the suitability classes detailed within Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2023), as detailed in Appendix A.

Bat emergence surveys

2.10 The survey methodology followed the guidelines as described in Collins (2023) and the good practice guidelines interim update (BCT, 2022). The surveys were conducted using

electronic bat detectors (EM Touch, Spectogram) to facilitate the detection of bats and to aid in the determination of bat species using the site. Two infra-red cameras were also used during each of the three visits to further facilitate the detection of bats, covering all sides of the barn over the surveys. During the third survey, a third camera was set up inside the barn. Details regarding the dates, start times, weather conditions and surveyors is shown in the table below:

Survey visit & date	Start and end time and time of sunset/ sunrise	Weather conditions	Surveyors
02/05/2024	Start time: 20:18 Sunset: 20:33 End time: 22:03	13°C start to 10°C end, dry, cloud cover 3/8, and BF1 wind speed.	FD, SR, AP, LB
04/06/2024	Start time: 21:19 Sunset: 21:34 End time: 23:04	9°C start to 8°C end, dry, cloud cover 0/8, and BF4 wind speed.	CS, SR, CL, LF
24/06/2024	Start time: 21:33 Sunset: 21:48 End time: 23:18	18°C start to 17°C end, dry, cloud cover 7/8, and BF1 wind speed.	GM, SR, CL, NM

Key: FD = Felicity Davies, SR = Shania Russel, AP = Alex Partington, LB = Lucy Brookfield, LF = Lauren Fairfax, CS = Caspar Sloan, CL = Chloe Leigh, LF = Lauren Fairfax, GM = Gemma Mcmullan, NM = Nina Morris [All experienced bat surveyors, acting as agents under license numbers: 2015-12106-CLS-CLS and 2016-20858-CLS-CLS]

2.11 Survey data was reviewed following completion of the surveys. This involved watching infra-red camera footage to check surveyor's observations and any un-recorded bat emergences. Bat acoustic recordings were analysed using Anabat Insight (Titley Scientific) software to confirm species.

Limitations

2.12 During the first dusk emergence survey, the cameras had developed a fault with the infra-red torches, meaning the illumination for some of the footage was poor. The features missed were covered by cameras in subsequent surveys.

2.13 The internal space of the barn was completely dark, and thus any bats flying around within the barn could not be seen by surveyors during the dusk bat surveys. An infra-red camera was positioned within the barn during the third survey to address this limitation. However, bats were recorded to be flying around in the internal space of the barn prior to the start of the third survey. This can be a common occurrence in very dark, abandoned buildings, where bats will light sample through open doors/windows to gauge when light levels outside are appropriate for leaving the building. The dark conditions and early roost emergence prevented the exact location of the internal roost from being identified. This is taken into account within survey conclusions and recommendations.

2.14 The floor of the barn was covered with equipment, straw and soil, which made the search for individual bat droppings across the floor both onerous and ineffective during the daytime inspection.

2.15 It is often not possible to make as accurate assessment of the presence or number of crevice-roosting bats, such as pipistrelles and some *Myotis* species, in a building during an inspection. This is due to the bats and their signs (such as droppings) most often remaining hidden from view in deep crevice roosts, for example in crevices between stone walls, or in inaccessible places, such as between roof slates/ridge tiles and roof lining. This is a standard constraint of all building inspections for roosting bats.

2.16 Desk study data should not be treated as a comprehensive list of species and habitats present within a search area. Many species are under-recorded and low numbers of records can indicate a lack of survey effort in some areas, rather than confirm the absence of a species.

3. Results

Desk Study

3.1 No active/inactive European Protected Species (EPS) Licences for bats were identified by the Magic.gov website within 1km of the site. The closest granted EPS licence was located over 2.4 km from the site. It should be noted, however, that an absence of records does not equate to an absence of bats at a location.

3.2 A search of the Ancient Tree Inventory returned evidence of two veteran trees within 1 km of the site, a veteran common beech tree 0.68 km to the south east and a veteran hawthorn 0.48 km to the east.

3.3 The desk study identified no statutory designated wildlife sites within 1 km of the site boundary, however the site falls within the SSSI Impact Risk Zone (IRZ) of Bowland Fells, 1.78 km to the northwest. Works proposals do not fall into any categories that require consultation with Natural England, therefore IRZ's are not considered further within this report.

3.4 The following Habitats of Principle Importance (HPI) were identified within the search area, as shown in table 1 below.

Table 1: *Potential areas of HPI:*

Description
• 14 areas of Deciduous Woodland, the closest is located 0.1 km to the east of the barn.
• Three areas of Ancient Woodland, the closest is located 0.2 km to the east of the barn.
• Seven areas of lowland calcareous grasslands, the closest is located 0.4 km to the north of the barn.
• One area of upland hay meadows, located 0.5 km to the south of the barn.

3.5 The LERN data search returned seven records of bats within 1 km, species included pipistrelle (*Pipstrellus sp.),* natterer's (*Myotis nattereri),* brown long-eared (*Plecotus auratus*) and lesser horseshoe bats (*Rhinolophus hipposideros*). All roosts recorded in the area have been pipstrelle, the closest was of common pipistrelle (*Pipistrellus pipistrellus*) located 0.85 km to the northeast of the barn. All bat records were located at two points, Whitewell (0.85 km northeast of the barn) and the Wild Boar Park (0.87 km south of the barn), suggesting the low number of bats found in the area is due to a lack of sampling and not reflective of the population size.

3.6 A review of aerial photographs and OS maps shows the barn is on the edge of a small farm which is immediately surrounded by fields bordered by hedgerows and has good connectivity to the woodland to the east (High Wood), the river Hodder 0.46 km to the east, and the Bowland Fells. This rural landscape is over 1 km from any large urban development and is predominantly green space. The nearest village is Whitewell, 1.4 km to the northeast. The barn has good connectivity to high quality foraging and commuting habitats, including hedgerows, grassland, broadleaved woodland and a treelined watercourse. The riparian woodland to the east may provide suitable habitat for bat species which show a preference for 'closed' habitats, such as brown long eared and Natterer's bats. The open agricultural grassland to the north, south and west of the

barn is likely to provide favourable foraging habitat for noctule bats (*Nyctalus noctula*) which prefer to feed in 'open' habitats. These habitats may also be used by 'edge' species.

Building Inspection

Fair Oak Barn

3.7 The barn comprises an open plan unrendered stone building with an open pitched, slate tiled roof (Photo 1). The building is rectangular, with an additional room on the western aspect to house livestock (Photo 4). The building is in a large state of disrepair, with gaps in the stonework throughout and large cracks present on the walls (Photo 9). Large openings are present where doors and windows are uncovered (Photo 2). Gaps in the tiled roof allow the ingress of water. There is also a large number of raised/dislodged roof tiles and gaps beneath the ridge tiles (Photos 4 and 5).

Photo 1: Eastern aspect of the barn.

Photo 2: Eastern aspect of the barn. Gaps in missing/cracked mortar, most noticeably around entrance, providing bat roost opportunity. Entrance and windows lack closures.

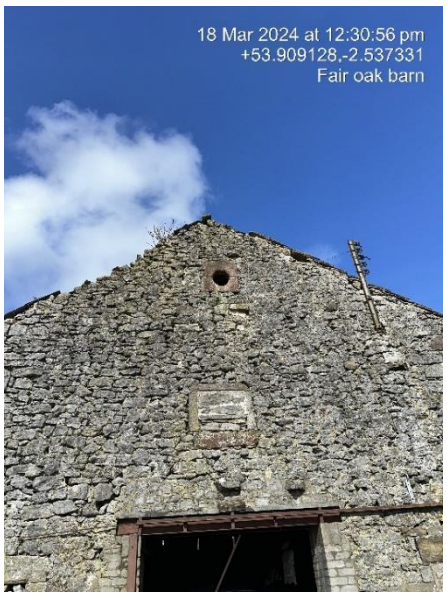


Photo 3: Gable end of barn, south side. Missing roof tiles, gaps in stonework throughout, unsealed entrance and unsealed circular window.

Photo 4: Western aspect of the barn showing smaller side room.

Photo 5: Raised tiles, numerous where the two roofs join and at roof ridge. Raised ridge tiles and some missing tiles.

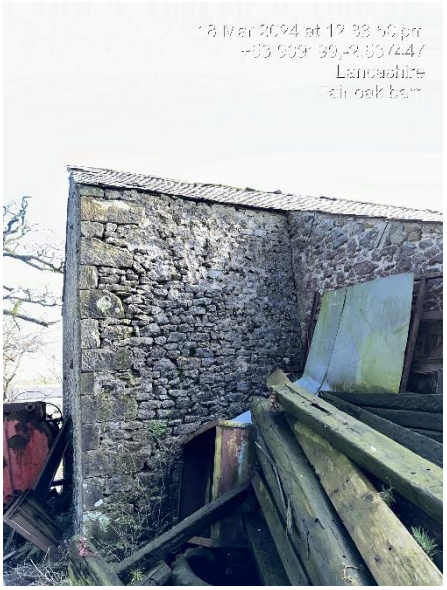


Photo 6: Western aspect of barn, north side. Gaps in stonework throughout, raised roof and ridge

Internal Inspection, Main Room

3.8 The internal space has many alcoves which provide opportunities for nesting birds including, barn owl due to the large beams and easy access to the outside through open windows. There are multiple gaps in the tiles where light can be seen allowing the ingress of water, and gaps between the wooden roof joists, beams and the roof and walls. There is a large crack in the wall to the left of photo 8 which is open to the outside. The large crevice in the inside wall (Photos 9 & 10) is contained within the inside of the barn.

Photo 7: Internal space. Light ingress present. Alcoves in wall, gaps between wooden beams.

Photo 8: Large crack to the left open to the outside. Missing roof tiles and alcoves in wall.

Photo 9: Crevices present on the internal wall.

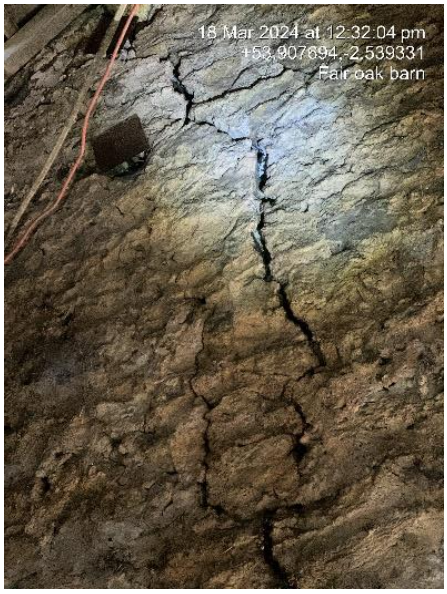


Photo 10: Closer shot of photo 9. Crevice is contained and sheltered.

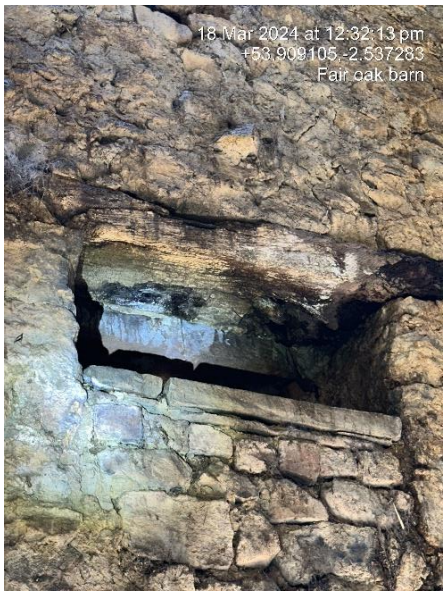


Photo 11 : Large alcove.

Photo 12: open window above cavity/alcove.

Internal Inspection (Side Room)

3.9 The room on the western elevation, open to the main building, has a low roof with an additional membrane. The membrane has been ripped in places to allow light via two glass panes in the roof, which has exposed the cavity between the membrane and the rooftiles to the inside of the barn (Photo 13). Raised roof tiles identified previously would allow the passage of bats into this space. However, as the roof tiles above are in disrepair, the cavity is likely to be wet. There are multiple gaps where the wooden roof joists and beams meet and connect to the walls (Photo 14). There is an additional feature in the gap between the crossbeams/lintel above the door (Photo 15).

Photo 13: Unsealed roof membrane in side room.

Photo 14: Further unsealed membrane, gaps between roof joists and beams.

Photo 15: Crevice between doorways.

Site habitats and surroundings

3.10 The barn is situated at the edge of a small working farm, with a concrete yard to the south and west surrounded by further buildings. There was no evidence of artificial lighting or light spill in the surrounding area. Beyond the buildings there is predominantly green space, with continuous vegetation leading to riparian woodland . A road runs through the farm, however the road is predominantly for farm use and is unlikely to get traffic at night, and so would not constitute as a commuting barrier. There is a group of trees to the north of the barn, with fields further to the north and east. The barn has direct connectivity to the trees, watercourses and surrounding fields. Overall the habitat quality and connectivity is considered optimal (good).

Summary

3.11 The barn is located within a rural locality with good potential foraging and commuting value for bats. In accordance with Collins (2023), the surrounding area is considered to be of high suitability for foraging and commuting bats.

3.12 No evidence or the presence of roosting bats was noted during the building inspection, however not all potential features could be subjected to a comprehensive search for

field signs owing to height and access restrictions. I addition, the barn was filled with equipment and the floor was covered with earth and straw, which made the search for individual bat droppings both onerous and ineffective.

3.13 The following features could provide potential roosting opportunities for crevice-dwelling bat species:

- Lifted/slipped roof tiles and hanging tiles;
- Gaps in roof membrane;
- Gaps within the stonework and mortar;
- Gaps between the frames of the connecting doors;
- Gaps between window and door frames and where beams meet the walls;
- Cracks in the walls.

3.14 The overall bat potential was determined to be of moderate suitability (Collins, 2023). Moderate suitability is defined as 'a structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status' (Collins, 2023). The barn a high number of potential roosting features for individual or small numbers of crevice dwelling bats, such as pipistrelle and myotis species. It also has good connectivity to high quality foraging and commuting habitats for a number of bat species, including hedgerows, grassland, broadleaved riparian woodland and treelined watercourses. The inspection determined that the features which could support a large number of multiple bats were more exposed and may be wet, making them unlikely to be suitable for a maternity or hibernation priority roost.

3.15 No field evidence of barn owls or other nesting birds was identified in the inspection; however the barn had several features (easy access, ledges and large roof beams) which could be utilised by barn owls and other birds. A precautionary pre-works nesting bird check should be undertaken to confirm absence, and appropriate RAMs should be followed during works.

Emergence Surveys

3.16 In line with Bat Conservation Trust guidelines (Colins, 2023) for buildings with moderate bat roost potential, two dusk bat emergence surveys were undertaken between May and September. Following the roost emergence during the first and second surveys, one additional emergence survey was necessary to determine the status of the roost and inform required mitigation. Results from the three surveys are provided in the table below. Surveyor locations, IR camera positions and bat emergence locations are plotted in Appendix D.

02/05/2024 Sunset: 20:33	***Survey Location 1 (FD)***	***Survey Location 2 (SR)***	***Survey Location 3 (AP)***	***Survey Location 4 (LB)***
Time of first bat	21:08	20:28	21:11	20:59
Details of roost emergences / re-entries	0	0	0	1 x CP (from emergence point 1)
General activity levels	Constant	Moderate	Moderate	High

No. of bats foraging	3	2	2	2
No. of social calls	7	1	0	2
Species observed	CP & N	CP & N	SP & CP	SP, CP, BLE & N
04/06/2024 Sunset: 21:34	***Survey Location 1 (CS)***	***Survey Location 2 (SR)***	***Survey Location 3 (CL)***	***Survey Location 4 (LF)***
Time of first bat	21:10	22:14	22:09	22:08
Details of roost emergences / re-entries	2 x CP (from emergence point 2)	0	0	1 x CP re-entry of bat into emergence point 1
General activity levels	High	Low	Moderate	Moderate
Max no. of bats foraging at one time	2	2	2	1
No. of social calls	0	0	0	0
Species observed	CP	CP	CP	SP & CP
24/06/2024 Sunset: 21:48	***Survey Location 1 (GM)***	***Survey Location 2 (SR)***	***Survey Location 3 (CL)***	***Survey Location 4 (NM)***
Time of first bat	21:35	22:05	21:51	21:28
Details of roost emergences / re-entries	3 (estimated) seen flying inside barn from survey start. Likely emerged from internal roosting location.	1 x CP (from emergence point 3)	0	0
General activity levels	Constant	Moderate	High (mostly from barn to east)	Moderate
Max no. of bats foraging at one time	3	2	3	1
No. of social calls	2 (social calling heard from barn)	3	0	0
Species observed	SP, CP & UB	SP, CP & UB	SP & CP	SP, CP & M

Key: CP: Common pipistrelle, SP: Soprano pipistrelle, N: Noctule, BLE: Brown Long Eared, D: Daubenton's, M: Myotis Sp., UB: Unknown Bat

3.17 In summary, bats were observed emerging from three roosting locations within the building during the three surveys. The locations are highlighted on the plan in Appendix D. A summary of the five emergence points is provided below:

- Emergence point 1: This access point comprises of a gap in the mortar on the corner of the north wall. One bat was recorded emerging from this point during

the first survey, and one bat was recorded entering this point on the second survey, which was recorded on an IR camera. The feature may lead to a large crack in the northern wall (see photo 8). Both bats recorded utilising this roost were common pipistrelle.

- Emergence point 2: A crevice roost is accessed by bats from within the internal space of the building. The exact location of the roost access point is unknown (see survey constraints). Two bats were recorded emerging from the open barn door during the second survey. Bats were also recorded by the IR camera flying within the building from the survey start during the third survey. The number of bats was estimated to be 3 (see paragraph 2.13 for limitations). All bats recorded emerging were common pipistrelle.
- Emergence point 3: This access point comprises a gap in the mortar on the northern wall inner corner. One common pipistrelle was recorded emerging during the third survey.

Photos 15 & 16 Bat emergence locations

3.18 Overall bat activity levels were generally moderate to high, although surveyors in position 2 recorded low activity on the second survey. The majority of activity was pipistrelle species, with occasional noctule, Myotis together with occasional brown long-eared passes recorded from survey location 4. Sporadic social calling was recorded during all surveys.

3.19 The IR camera was set up within the barn during the third survey. This recorded multiple bats flying around the barn from the start of the survey. Due to how early these bats were seen, it is assumed that these are bats which were roosting within the barn, possibly 'light sampling' until sufficient darkness outside was reached. The bats were not echolocating inside the barn, however pipistrelle social calling was recorded and attributed to these bats. Although social calling cannot differentiate between pipistrelle species, it is assumed these bats were common pipistrelle due to prior emergences of this species.

Incidental observations

3.20 Two barn owls were recorded flying near the barn during the third survey. Local residents informed the surveyors that these the owls had been seen using the building.

4. Evaluation and Recommendations

4.1 An evaluation and assessment of potential impacts on bats is presented below. This is based on the information available on the proposed development (see below) and the professional judgement of the ecologists that prepared this report. It considers legal requirements (see Appendix C) and relevant national and local planning policies. If the proposals are changed significantly, the assessment will need to be reviewed.

Work Proposals

4.2 The proposed development includes renovation of the barn into a stable, weatherproof structure. This will involve work to the roof and walls.

Designated Sites

4.3 There will be no impacts to designated sites as a result of the proposals.

Importance of recorded roost

4.4 The building is a confirmed roost, with PRFs including various cracks and missing mortar, predominantly on the north end of the building, which may provide access to crevices and / or small cavities. Subsequent dusk emergence surveys of the building indicate that it is used by a small number (<5) of a commonly occurring bat species (common pipistrelle) for roosting, with one roost present within cracks in the northern wall and another roost utilising inside the barn. Given the low number of bats recorded emerging (maximum of two from an individual emergence point and maximum three from the building as a whole during a single survey visit), the building is considered to comprise a non-breeding day roost. However, considering that sporadic social calling was recorded during two surveys, the presence of a small-scale mating site cannot be entirely ruled out. As the building is uninsulated and has large openings to the outside, it is cold and thereby has a decreased suitability for a significant nursery roost. In accordance with Reason and Wray (2023) the building is considered to be important at a **site level,** as outlined in the table below.

	Roost category		
Conservation status/ distribution	***Feeding perches; night-roosts; Individual or very small occasional/ transitional/ opportunistic roosts***	***Non-breeding day roosts (small numbers of species***	***Mating sites (excluding individual trees and larger swarming sites); small numbers of hibernating bats***
Widespread all geographies (Pipistrelle species)	Importance: Site	Importance: Site	Importance: Site

4.5 Despite three emergence points being observed, due to two of these being close and comprising the same functional and qualitative characteristics for the same species (common pipistrelle), for the purpose of assessment and licensing the building can be considered to comprise two roosts (Natural England / Reason and Wray, 2023); for small numbers of common pipistrelle.

Bat impact assessment

4.6 Works are confined to the building roof and structure and do not involve a change of use. Work will be relatively short-term (<6 months).

4.7 In the absence of mitigation, proposals have the potential for direct harm / injury to roosting bats during removal of the existing roof, which would constitute an offence (Appendix C).

4.8 In addition, in the absence of compensation, the proposals will result in the permanent blocking / loss of confirmed roosts, which would constitute an offence (Appendix C). Works will involve the repairing/repointing of stone work, which may block roost features within the walls. There is a risk that the internal roost is located within the roof beams or between the sarking and roof slates, which would be destroyed by proposed re-roofing works.

4.9 The use of artificial lighting has the potential to impact roosting, foraging or commuting bats by deterring them from using certain areas or preventing their movement through the wider landscape.

4.10 In summary, there is potential for works to cause an offence and have a small-scale impact on bat populations in the immediate area, through loss of roosting locations and artificial lighting.

Recommendations

4.11 The project should consider the mitigation hierarchy (avoid > mitigate > compensate / off-set) from the outset.

4.12 To avoid causing an offence, derogation in the form of a protected species licence will be required prior to commencing works. Based on the small number of roosts / bats and the species present, a 'low impact' bat licence (CL21) can be used.

4.13 The project ecologist will be involved during the design stage to advise on incorporation of roosting provision within the new roof. This may involve features such as retaining gaps in soffits, bat access tiles and bat boxes within or affixed to appropriate walls. This detail will be included within the low impact license application.

4.14 Given that there is potential of hibernation roosts, it is first advised that works are scheduled outside of the hibernation season, when bats are unlikely to be within the building (November – February). To avoid bat active season, works should take place on either side of the hibernation season (October – September or March – April).

4.15 Work must comply with a Method Statement, to be approved by Natural England as part of the licence application process, which will centre around the following key measures:

- Prior to any potential disturbance / works, all contractors and operatives involved will be given a toolbox talk by the scheme ecologist to make them aware of the presence of roosting bats, their legal duties with regards to bats and the bat licence conditions. A Contractor Information Sheet (Appendix B) and copy of the bat licence will also need to be displayed on site.

- Any dismantling of known or potential roost sites (including soffits, roof tiles etc) will be conducted sensitively by hand under the supervision of an ecologist licenced to handle bats. The ecologist will first inspect relevant areas of the buildings for bats before works commence. Any bats found will be captured by the bat-licenced ecologist by hand (using gloves) or a static net, placed into a cloth bag and relocated to a pre-installed bat box.
- In the highly unlikely event there are any observations that indicate the works pose a higher level of risk than anticipated, works must cease until further guidance has been provided by the project ecologist.

If roost sites / potential roost sites will not be dismantled but will be blocked:

- Mortar will only be applied to gaps in the stonework where essential, and any known roost access points will be retained wherever possible.
- Endoscope inspection of any known or potential roost sites will be undertaken before works commence. This is to be undertaken by a suitably licenced and experienced ecologist.
- If the feature(s) can be thoroughly searched and no roosting bats or evidence of roosting bats is recorded, the features are to be sealed immediately to ensure no bats enter the feature(s).
- If any feature(s) cannot be thoroughly searched or the absence of bats cannot be confirmed, bat excluders will be fitted to all bat access points. As bats do not always leave the roost every night to feed (e.g. due to cold temperatures, heavy rain or winds) the bat excluders will be left in place for at least 14 days of suitable weather to be confident that all bats have left the roost before access points are sealed. Features will need to be sealed immediately after the excluder(s) are removed.
- If any bats are discovered during this process, works will stop until the bat(s) vacate the building, or the licensed bat handler removes the bat(s) and relocates them to a pre-installed bat box.

Bats discovered unexpectedly during non-supervised works (under licence):

- Works must stop immediately. If the named ecologist or an accredited agent is not present, they must be contacted immediately to attend site.
- The bat must not be exposed or 'encouraged' to fly out of the roost of its own accord. It should be left undisturbed unless this would be unsafe.
- Unless it is in immediate danger, the bat must only be handled by the named ecologist or accredited agent. If there is a suitable alternative roosting location on site then, assuming the bat is checked and in good health, it should be placed there to minimise stress and holding time. If not, it must be carefully placed in a lidded ventilated box with a piece of clean cloth and a small shallow container with some wetted cotton wool. The box must be kept in a safe, quiet location.
- The named ecologist must re-assess the location where the bat was found and determine whether works can continue under the licence in force, whether further survey is required, and/or whether a modification to the licence is required before works re-commence. A written record must be kept of this

decision and made available on request. This incident must also be reported on the licence return form.

4.16 It is unlikely that post-development population monitoring will be required for roosts supporting small numbers of common and widespread bats. However, the named ecologist will visit the site, post-development, to check that compensatory roosts have been provided and submit information to Natural England via a licence return.

4.17 Due to the dark location of the barn, any lighting will likely have a large impact on the roost. Therefore, no external lighting should be fitted.

4.18 In addition to compensation for the potential loss of roosts, consideration regarding enhancement of the site for bats should be considered. Considering the surrounding habitats are of high value for bats, there is potential for extra roost provision to have a significant contribution to bat conservation within the local area.

Recommendations – nesting birds

4.19 A pre-works check will be necessary to confirm the presence or absence of barn owl. If barn owl are using the building, to avoid impacts to nesting barn owl and retain roosting potential for them within the barn, a Schedule 1 listed species, any works which will impact the barn internally or externally will be subject to the following RAMS:

- No internal or external works to the building to be conducted during the nesting bird season (March and August inclusive);
- Any internal and external works to the building will be subject to a pre-works check for barn owl, as barn owl have been recorded with eggs and chicks every month of the year. The inspection must be conducted a suitably experienced and licensed ecologist to avoid disturbance to nesting barn owl, which would likely constitute and offence;
- If no evidence of breeding barn owl is recorded, then exclusion measures may proceed under the guidance of a suitably experienced and licensed ecologist. Key measures include the provision of an alternative permanent, long-term nesting/roosting site within 1 km of the barn. The site will be located at least 200 m from the barn and installed at least 30 days prior to a planned exclusion event. The barn owl nesting/roosting feature design and installation must meet the requirements and specifications outlined by the Barn Owl Trust (Barn Owl Trust, 2020). This may be a barn owl nest box on a mature tree close to the site.
- The entrance to the barn should not be blocked at any point during or after the works, allowing continued access to the nesting site by barn owl; and
- If any active nests are recorded, these must be protected until chicks have fledged and/or the nest is abandoned naturally.
- Works will be temporary in nature and the potential value of the barn for roosting/breeding barn owl will be retained post-works. As an enhancement measure, a barn owl box could be erected within the roof structure of the barn,

post-works. Advice in relation to this is available at: https://www.barnowltrust.org.uk/barn-owl-nestbox/barn-owl-nestboxes/

4.20 No other birds were noted during the surveys. However, the installation of bird boxes could be considered as part of proposals, at suitable locations. For example:

- https://www.nhbs.com/no-10-schwegler-swallow-nest
- https://www.nhbs.com/vivara-pro-woodstone-starling-nest-box
- https://www.nhbs.com/1sp-schwegler-sparrow-terrace

Re-survey of the site

4.21 If works have not commenced prior to May 2025, or if any changes to the proposals are made, a further ecological survey may be necessary. Low Impact licence applications must contain survey data from the most recent bat activity season.

5. References

British Standards Institution (2013) BS 42020:2013 Biodiversity: Code of practice for planning and development. British Standards Institution, London.

BCT (2022) interim guidance note. https://cdn.bats.org.uk/uploads/pdf/Interim-guidance-note-on-NVAs-May-2022-FINAL.pdf?v=1653399882

CIEEM (2017a) Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.

Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edition). The Bat Conservation Trust, London.

Institute of Lighting Professionals (2023) Bats and artificial lighting in the UK. The Bat Conservation Trust, London.

Mitchell-Jones, A.J. (2004) Bat Mitigation Guidelines English Nature, Peterborough

Poulton, S.M., 2006. An analysis of the usage of bat boxes in England, Wales and Ireland. The Vincent Wildlife Trust.

Appendix A – Bat Roost Potential and Habitat Suitability Categories

Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape (Collins, 2023).

Table 4.1. Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement.

Potential suitability	Description	
	Roosting habitats in structures	**Potential flight-paths and foraging habitats**
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flight-lines, or generate/shelter insect populations available to foraging bats).
Negligible[a]	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions[b] and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity and not a classic cool/stable hibernation site, but could be used by individual hibernating bats[c]).	Habitat that could be used by small numbers of bats as flight-paths such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions[b] and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for flight-paths such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure 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 due to their size, shelter, protection, conditions[b] and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight-paths such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

a Negligible is defined as 'so small or unimportant as to be not worth considering, insignificant'. This category may be used where there are places that a bat could roost or forage (due to one attribute) but it is unlikely that they actually would (due to another attribute).

b For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.

c Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten *et al.*, 2016 and Jansen *et al.*, 2022). Common pipistrelle swarming has been observed in the UK (Bell, 2022 and Tomlinson, 2020) and winter hibernation of numbers of this species has been detected at Seaton Delaval Hall in Northumberland (National Trust, 2018). This phenomenon requires some research in the UK, but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in prominent buildings in the landscape, urban or otherwise.

Appendix B - Information Sheets for Contractors

BATS

Information, legal responsibilities and best practice for the construction industry

bowland ecology

Legal Protection

All UK Bat species are protected by European and UK law, in practical terms this means it is an offence to:

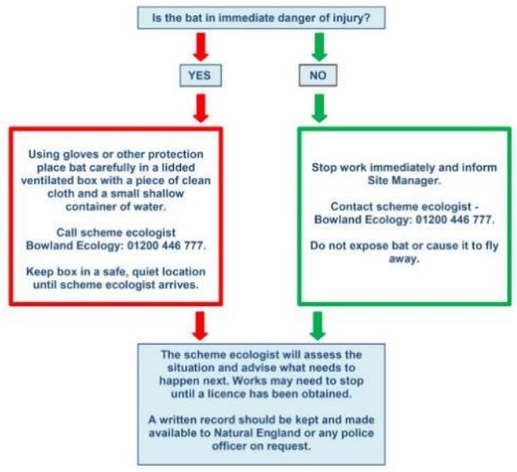
- Deliberately capture, injure or kill a bat;
- Deliberately disturb bats;
- Damage or destroy a breeding site or resting place (even if bats are not occupying the roost at the time);
- Intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb a bat in such a place;
- Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat.

Penalties on conviction: the maximum fine is £5,000 per incident or per bat (some roosts contain several hundred bats), up to six months in prison, and forfeiture of items used to commit the offence, e.g. vehicles, plant, machinery.

Defences include:

1. Tending/caring for a bat solely for the purpose of restoring it to health and subsequent release.
2. Mercy killing where there is no reasonable hope of recovery (provided that person did not cause the injury in the first place – in which case the illegal act has already taken place).

Found a bat during unsupervised works?



Field signs of bat presence:

- Live or dead bats: the smallest UK bat species, the pipistrelle is only 3.5-4.5cm long.
- Droppings: bat droppings look like mouse droppings but will crumble between your fingers (they are dry and made entirely of insects).
- Feeding remains: piles of butterfly/moth wings are often left below bat feeding perches.

Schematic from www.bats.org.uk

Bats can roost in the following places:

- The top of gable end or dividing wall;
- The top of chimney breasts;
- Ridge and hip beams and other roof beams;
- Mortise and tension joints;
- All beams/ceilings/pipework (free hanging bats);
- The junction of roof timbers, especially where ridge and hip beams meet;
- Behind purlins;
- Between tiles and the roof lining;
- Under flat felt roofs;
- Under barge boards;
- In cavity walls;
- In cracks in stone or concrete;
- Behind peeling paint/wall coverings;
- Gaps behind window and door frames;
- Between window panes and timber boarding.
- In trees (cracks/holes/ivy cladding).

Why wear gloves?

There is a small risk that some bats carry a rabies virus – European Bat Lyssavirus. The purpose of wearing gloves is to reduce the chance of being bitten, as the virus is transmitted via bat saliva. Thick leather gloves are appropriate for removing a bat from imminent danger but these should be clean.

In the event that you are bitten, wash the wound, gently but thoroughly, with soap and water. Speak to a health professional immediately, advising them that you have been bitten by a bat.

References:
Bat Conservation Trust. August 2016. Why wear gloves when handling bats?
BCT Bat Surveys for Professional Ecologists, Good Practice Guidelines, 3rd Edition, 2016

version 1 August 2017

Appendix C – Legal Information

This report provides guidance of potential offences as part of the impact assessment. This report does not provide detailed legal advice and for full details of potential offences against protected species the relevant acts should be consulted in their original forms i.e. The Wildlife and Countryside Act, 1981, as amended, The Countryside and Rights of Way Act 2000, The Natural Environment and Rural Communities Act, 2006 and The Conservation of Habitats and Species Regulations 2017.

Species	Legislation	Offences	Notes on licensing procedures and further advice
Species that are protected by European and national legislation			
Bats *European protected species*	Conservation of Habitats and Species Regulations 2017 Reg 41	Deliberately[1] capture, injure or kill a bat; Deliberate disturbance[2] of bats; Damage or destroy a breeding site or resting place used by a bat. The protection of bat roosts is considered to apply regardless of whether bats are present.	An NE licence in respect of development is required in England. https://www.gov.uk/bats-protection-surveys-and-licences *European Protected Species: Mitigation Licensing- How to get a licence* (NE 2010) *Bat Mitigation Guidelines* (English Nature 2004) *Bat Workers Manual* (JNCC 2004) *BS8596:2015 Surveying for bats in trees and woodland* (BSI, 2015)
	Wildlife and Countryside Act 1981 (as amended)[4] S.9	Intentionally or recklessly[3] obstruct access to any structure or place used for shelter or protection or disturb a bat in such a place.	Licence from NE is required for surveys (scientific purposes) that would involve disturbance of bats or entering a known or suspected roost site.

[1] Deliberate capture or killing is taken to include "accepting the possibility" of such capture or killing [2] Deliberate disturbance of animals includes in particular any disturbance which is likely a) to impair their ability (i) to survive, to breed or reproduce, or to rear or nurture their young, or (ii) in the case of animals of hibernating or migratory species, to hibernate or migrate; or b) to affect significantly the local distribution or abundance of the species to which they belong. Lower levels of disturbance not covered by the Conservation of Habitats and Species Regulations 2017 remain an offence under the Wildlife and Countryside Act 1981 although a defence is available where such actions are the incidental result of a lawful activity that could not reasonably be avoided. Thus deliberate disturbance that does not result in either (a) or (b) above would be classed as a lower level of disturbance. [3] The term 'reckless' is defined by the case of Regina versus Caldwell 1982. The prosecution has to show that a person deliberately took an unacceptable risk, or failed to notice or consider an obvious risk. [4] The Wildlife and Countryside Act (1981) has been updated by various amendments, including the Countryside and Rights of Way Act 2000 and the Natural Environment and Rural Communities Act 2006. A full list of amendments can be found at https://jncc.gov.uk/our-work/wildlife-countryside-act/

Appendix D – Surveyor Locations Map