Preliminary Bat Roost & Emergence Survey Report

Client:	**AW&A Architects**
Site:	**Hall Foot Barn, Worston, Clitheroe**
Report Issue Date:	**03/07/2024**
Report Author:	**Carol Edmondson MSc MRSB**

Guidelines

This assessment has been designed to meet:

- Bat Conservation Trust Bat Surveys for Professional Ecologists —Good Practice Guidelines, 4th edition (Collins, 2023)
- British Standard 42020 (2013) 'Biodiversity – Code of Practice for Planning and Development'.
- The Bat Conservation Trust publication *Bat Surveys for Professional Ecologists – Good Practice Guidelines* (Collins, J. (Ed) 2016).
- National Planning Policy Framework 2023 (NPPF, Para 158, 159, and Para 180)
- CIEEM, CIRIA, IEMA *Biodiversity net gain. Good practice principles for development. A practical guide*. CIRIA C776a. London, 2019.

Summary

This report presents the results of a daylight preliminary bat roost assessment (PRA) undertaken on 31st May 2024, at Hall Foot Barn, Worston and the follow up dusk emergence survey. The work has been commissioned to support a proposed planning application to convert the barn.
The scope of the survey has primarily considered roosting and hibernating bats, breeding birds and barn owls.

- **The daytime survey** identified that there was low potential roosting habitat on site for bats, and a further survey was required. The site is not suitable for use by barn owls, and no evidence was found on the site. Evidence of breeding birds was present in the buildings.
- **The Bat Emergence/re-entry Survey** (BERS) was carried out on the 31st May 2024by two Class 2 licenced bat surveyors, both with 10+ years' experience. No bats were recorded emerging from the building, with very low numbers of common and widespread species recorded foraging around the building and adjacent trees. Mitigation recommendations have been made to replace and enhance potential roosting habitat in the local landscape. Full results are presented below at 4.0.

Recommendations – This is work you will need to commission to obtain planning permission or comply with legislation.

Recommendations
• **Bats: Due to the transient nature of bats their presence can never be entirely ruled out, and a precautionary method of working should be adopted & therefore If bats are found during any stage of the development, work should stop immediately, and a suitably qualified ecologist should be contacted to seek further advice.** • **Lighting design should be low level (e.g downward facing wall lights), and avoid shining at any wildlife enhancement features installed.** • **Birds: A close inspection of the building should be undertaken by a suitably qualified ecologist immediately prior to continuation of works. All active nests will need to be retained until the young have fledged.** • **Alternatively works can be resumed after the 31st August without further inspection.** • **Enhancements as recommended at 4.3**

Contents

1.0 Introduction and Context 3
1.1 Background 3
1.2 Site Context 3
1.3 Scope of the report 3
2.0 Methodology 3
2.1 Desk Study methodology 3
2.2 Site Survey methodology 3
2.3 Dusk activity survey methodology 4
2.4 Breeding birds and other incidental observations 4
2.5 Suitability Assessment 4
2.6 Limitations 5
3.0 RESULTS AND EVALUATION 5
3.1 Desk Study Results 5
3.1.1 Landscape 5
3.1.2 Mitigation Licences 6
3.5 Field Survey Results 6
3.5.1 Survey Timings and weather conditions 6
3.5.2 Feature descriptions and photos 7
3.6 Emergence Survey Results 10
4.1 Summary 11
4.2 Evaluation 11
4.3 Enhancements 12
Appendix 1: Survey Plan 14
Appendix 2: Proposed Site Plan 14
Appendix 3: Desk Study Information 15

1.0 Introduction and Context

1.1 Background

Ark Ecology were commissioned to carry out preliminary bat surveys at Hall Foot Barn, Worston BB7 1QA to support a planning application for refurbishment including roof repairs.

1.2 Site Context

The site is located at central National Grid Reference SD 77192 42671, consisting of traditional stone built barn, adjacent to the main house at Hall Foot, which is undergoing major renovation works.

1.3 Scope of the report

The survey was carried out to determine roost potential of the building, current usage by bats and other protected species of the site and to establish the status of the bat species using the site prior to development work being carried out.

A survey plan is presented in Appendix 1.

2.0 Methodology

2.1 Desk Study methodology

A review of the following information sources has also been undertaken to inform the assessment:

- Landscape structure using aerial images from Google Earth and OS maps
- Designated sites, habitat and granted EPSL records held on Magic.gov.uk.

2.2 Site Survey methodology

The assessment is informed by the Bat Conservation Trust publication *Bat Surveys for Professional Ecologists – Good Practice Guidelines* (Collins, J. (Ed) 2023).

All features that will be impacted by the project proposals were assessed for their bat roosting and/or commuting habitat. The surveyor systematically surveyed all features suitable and for signs of bat activity.

<u>For any surveyed buildings:</u>

A non-intrusive visual appraisal from the ground using binoculars, inspecting the external features of the building for potential access/egress points, and for signs of bat use. An internal inspection of the building was also made, including areas of derelict or abandoned buildings and the accessible roof spaces of all buildings, using an endoscope & torch. The surveyor paid particular attention to the floor and flat surfaces, window shutters and frames, lintels above doors and windows, and carried out a detailed search of numerous features within the roof space taking into consideration:

- The availability of access to roosts for bats.
- The presence and suitability of cracks, crevices, tiles, soffits, hollows, ivy growth and other places as roosts.

- Signs of bat activity or presence, such as: bats themselves, droppings, bat grease marks, bat scratch marks, bat urine spatter and bat prey remains.

2.3 Dusk activity survey methodology

The surveys involved surveyors positioned around the buildings ensuring that all elevations and roof sections could be clearly observed. Particular attention was paid to the areas of the buildings identified as providing suitable access points to bat roosts. The location of each surveyor during each survey is shown in Appendix 1.

Each surveyor was assigned an area of the building to observe for the duration of the survey. Surveyors used Peersonic RPA3 (with full spectrum recording) bat detectors, and Echo Meter Touch 2 pro detector connected to an iPad. Bat echolocation calls recorded during the surveys were analysed using Wildlife Acoustics sound analysis software Kaleidoscope V3.1.7. In line with current BCT interim guidance Infrared night vision cameras were also used to cover areas of high PRF or confirmed roost exit points, and the footage viewed following the survey at a slower rate (max. .67) to determine bat passes and/or emergences. Cameras used were Nightfox Whisker IR x 2, 1 x unbranded night vision binocular, additional infrared lighting provided by 3 x Nightfox IR torches. The resulting video was subsequently viewed **in full**, cross-checked with survey sheets and a summary of activity collated from each camera. These night vision aids improve the quality of data collected on each survey, providing a visual context where surveyors can no longer see features due to low light levels.

2.4 Breeding birds and other incidental observations

The surveyor also made note of any other ecological constraints observed during the survey, notably the likelihood of presence of breeding birds, and the suitability of the buildings for and presence of barn owls *Tyto alba*.

2.5 Suitability Assessment

All affected survey buildings on site were categorised according to the likelihood of bats being present, in line with best practice guidelines (Collins, J. (ed) 2023). The features that dictate the likelihood of roosting bats are summarised in Tables 1 below. Roost suitability is classified as high, moderate, low and negligible and dictates any further surveys required before works can proceed.

***Table 1**: Features of a building that are correlated with use by bats*

Likelihood of bats being present	Feature of building and its context
Higher	Buildings/structures with features of particular significance for roosting bats e.g. mines, caves, tunnels, icehouses and cellars. Habitat on site and surrounding landscape of high quality for foraging bats e.g. broadleaved woodland, tree-lined watercourses and grazed parkland.

	Site is connected with the wider landscape by strong linear features that would be used by commuting bats e.g. river and or stream valleys and hedgerows. Site is proximate to known or likely roosts (based on historical data).
Lower	A small number of possible roost sites/features, used sporadically by more widespread species. Habitat suitable for foraging in close proximity, but isolated in the landscape. Or an isolated site not connected by prominent linear features. Few features suitable for roosting, minor foraging or commuting.

2.6 Limitations

These surveys follow best practice guidance to confirm presence of roosting bats and where present characterise the roost. However, this information is collected at finite dates and times, and provides an indication of the conditions on site at that time only. Due to the transient nature of bats, the use of the building, and the site as a whole by bats at all times cannot be established based on this information i.e. whilst these surveys are used to determine presence of bats, they can only prove *likely* absence of bats due to their transient nature.

- There were no specific limitations to the surveys.

3.0 RESULTS AND EVALUATION

3.1 Desk Study Results

A summary of desk study results is provided below.

3.1.1 Landscape

The site is located in a rural location on the outskirts of Worston village. The site is connected to the surrounding countryside by hedgerows & lanes lined with mature trees, which will provide suitable foraging and commuting habitat for most species of bats.

Figure 1: Aerial photo of site, showing landscape structure.

3.1.2 Mitigation Licences

A search of the magic database for granted European Protected Species Mitigation Licences (EPSMLs) within a 2km radius found two licenced sites which include damage to a resting site for common pipistrelle *Pipistrellus pipistrellus,* soprano pipistrelle *P.pygmeus* and whiskered bat *Myotis mystacinus*. This is evidence of the presence of these species within the proximity of the site but does not exclude the presence of other bat species. These species of bat are known to roost in residential areas and buildings, foraging along hedgerows and under trees around urban areas and parks.

3.5 Field Survey Results

The surveys were undertaken on 31/05/2024 by Carol Edmondson (Natural England bat licence number: 2015-12195 CLS-CLS), an MSc qualified ecologist with 11 years' experience in specific bat surveying and Catherine Wood (Natural England Bat Licence Number: 2015-11257-CLS-CLS) 13 years of bat survey experience.

There is one survey building on the site which is illustrated in the map in Appendix 1. The environmental variables recorded at the time of the survey are shown in Table 2.

3.5.1 Survey Timings and weather conditions

Daytime survey: Date 31/05/2024	
Temperature	15°C
Cloud Cover	10%
Wind	5km/h
Rain	none

Emergence Survey date	***Survey Start and End Times Sunset/sunrise time***	***Weather Conditions Start***	***Weather Conditions END***
31/05/2024	*21:00 – 11.03* *Sunset: 21:29*	*Temp: 15°C* *Cloud Cover: 20%* *Wind: 0* *Rain: None*	*Temp: 10°C* *Cloud Cover: 20%* *Wind: 1 BS* *Rain: None*

3.5.2 Feature descriptions and photos

Building description

The property is constructed of random solid stone & granite wall construction with earth floor. Random positioned openings dominate
the front elevation. A single storey annex is attached to the rear, which follows the slope of the roof.
The dual pitched roof is traditional timber purlin and rafter construction off oak kingpost trusses supporting stone slate coverings. The roof is hipped at both gables formed off the end trusses.

At the time of the survey there was evidence of structural repairs, and some cosmetic repairs e.g removal of rendering, removal of first floor boards and supports and levelling of internal floor spaces.

Figure 2: Aerial view of the site.

Figure 3: North elevation of the building.

Potential bat roosting features:

The removal of the rendering had exposed may gaps in the pointing between the stonework, however the majority of these were too wide for crevice dwelling bats. Those that appeared more suitable were inspected by endoscope.

There were no gaps behind any of the barge boards, or at the eaves.

On the front (North elevation; Fig.3), there was some structural movement, with some missing stone from the wall. The resultant gaps were inspected by high power torch & endoscope.

There was no evidence of bats roosting in any of these gaps.

Figure 4: West elevation.

Figure 5: South elevation.

Internally

Most ceilings have been removed, with the laths & purlins exposed. In some roof spaces the tiles have no lining, whereas the repaired areas have breathable roof membrane installed as the lining.

Figure 6: Example of exposed timbers and roof tiles.

The floor had a reasonable layer of dust and debris (i.e. not recently swept). There were mice and swallow droppings evident but no bat droppings.

Some areas of flooring have been concreted and covered by insulation boards.

Some of the windows were open spaces with no glass or frames present, allowing wildlife entry to the interior.

Figure 7: Roof open to the underside of the roof tiles.

Evidence of bats

There was no evidence of bats having used the structure as a resting or breeding site. No droppings, grease marks or urine stains were recorded during the inspection.

Breeding birds and other incidental observations.

There was some evidence of nesting/roosting birds inside the building (feathers and some nesting material). There were swallows flying in and out of both sections of the building, with some nesting material present in the rafters. A wren was seen entering a hole in the garden wall on the inside of the east elevation (Fig.8) and another into the main barn entrance, carrying feeding material.

Figure 8: Location of wren nest in the inside of the east garden wall.

3.6 Emergence Survey Results

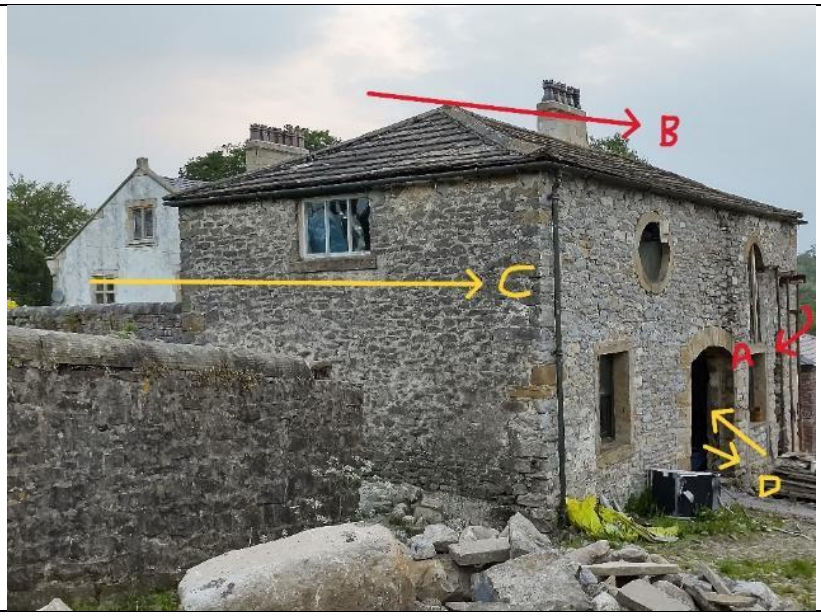
Position 1 – CW

Low level of foraging by single common pipistrelle bats, including entering and exiting the barn (D) from 22:01 – 22:30.

Single brief forage of a myotis & single BLE heard 22:18 & 22:25.

No additional activity recorded on NVA.

Wren entered building at 21:42 carrying insects.



Position 2 CE (2 x NVA's one covering roof area, one covering walls & gable end) Occasional foraging (arriving from behind surveyor from southwest, looping round the courtyard and exiting to the northeast of the building) single common pipistrelle from22:06 to 22:48	

4.0 Conclusions, Impacts and Recommendations

4.1 Summary

The surveys undertaken to date following current guidelines provide sufficient information to conclude that this building is not currently being used by bats for roosting.

- The emergence survey recorded low numbers of commuting and foraging by common pipistrelle (*Pipistrellus pipistrellus*) and myotis sp. bats from the surrounding area.
- No emerging or roosting bats were recorded either by surveyors or recorded on any camera.
- The site contained active bird nests at the time of survey.

4.2 Evaluation

There is some foraging habitat present in the courtyard, and along the access track under the mature trees. This area will be retained under the current plans, and with the correct lighting, will continue to be suitable for foraging bats.

Survey assessment conclusions:

- No bat roost was present in this building at the time of survey.
- Evidence showed that both swallows and wrens had active nests at the time of survey.

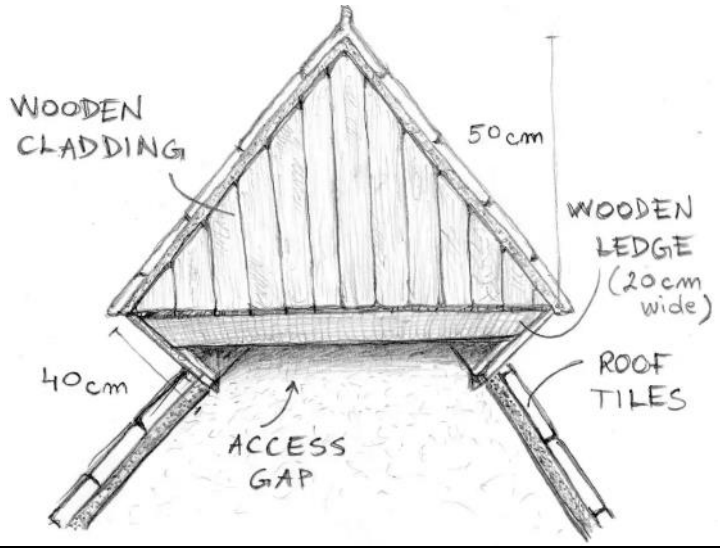
Recommendations / Mitigation:

- Due to the transient nature of bats their presence can never be entirely ruled out, and a precautionary method of working should be adopted.
- **If bats are found during any stage of development, work should stop immediately and a suitably qualified ecologist should be contacted to seek further advice.**
- **No further work should be undertaken until the young have fledged from active nests. A breeding birds check will be required before work can be continued on this building, or can be resumed after the 31st August.**

4.3 Enhancements

Enhancements : Bats *The Local Planning Authority has a duty to ask for enhancements under the NPPF and circular 06/2016: Biodiversity and Geological Conservation. Para.99*	The installation of a minimum of 1 bat boxes prior to the commencement of works on adjacent trees, and a further box on the south elevation once complete will provide additional roosting habitat for bats in the area e.g. • Greenwoods Ecohabitats • https://www.greenwoodsecohabitats.co.uk/bats • Kent Bat Box (timber). Bat boxes should be positioned 3-5m above ground level facing in a south/south-westerly direction with a clear flight path to and from the entrance. BCT's book, *'Designing for biodiversity: A technical guide for new and existing buildings' (RIBA Publishing 2013, 2nd edition)* discusses this in detail, and is a valuable resource for designing bat & bird enhancements in a new development.

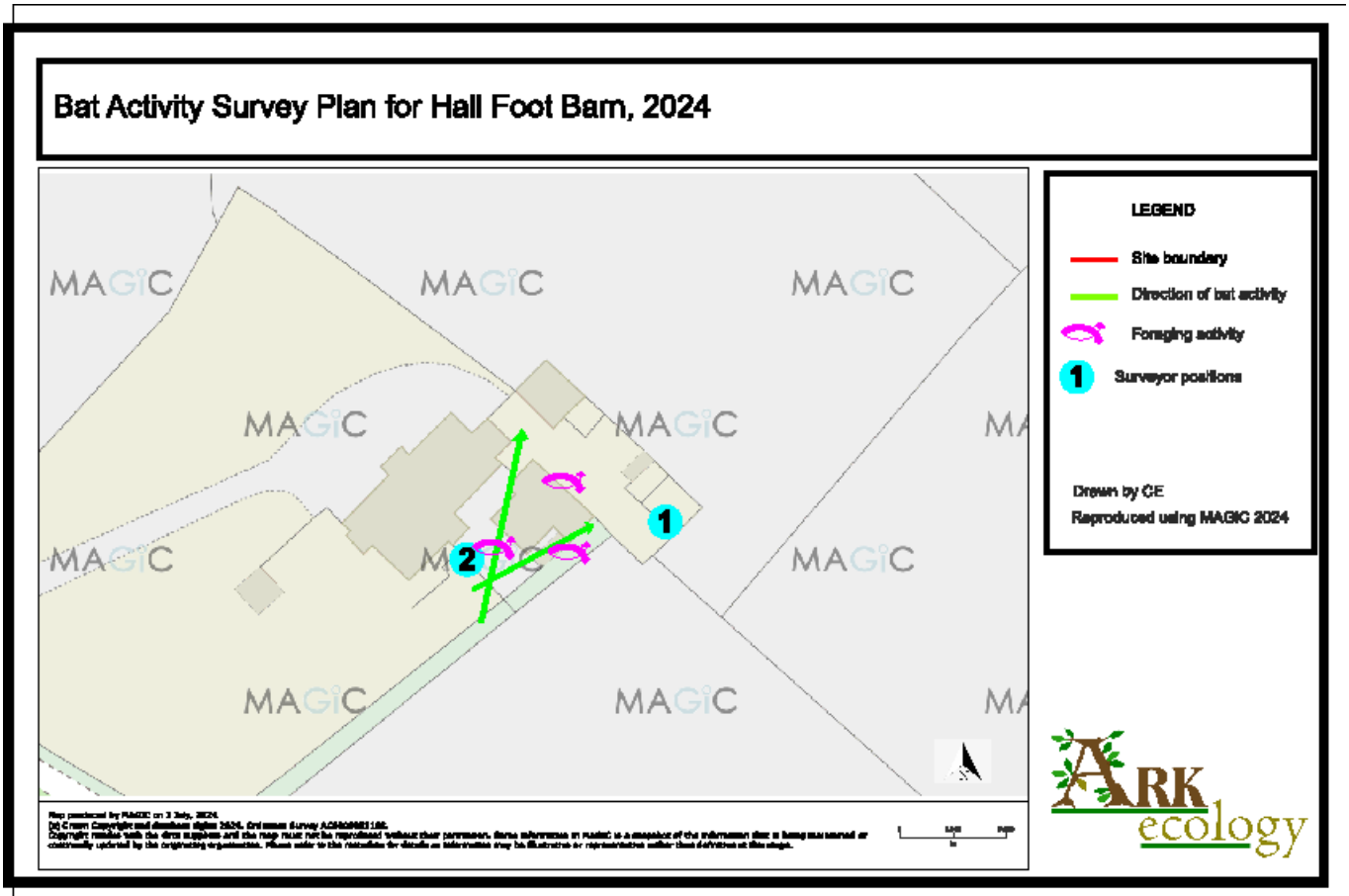
Enhancements & mitigation : Birds	Install 2 bird boxes on adjacent trees e.g. • National Trust Green WoodStone 32mm Nest Box • Schwegler 1B nest boxes • Schwegler 2H Robin Boxes Nest boxes should be positioned approximately 3m above ground level where they will be sheltered from prevailing wind, rain and strong sunlight. House martin/swallow boxes should be placed under the eaves with clear entrance/exit paths. A suitable provision for nesting swallows will be required for mitigation of nesting areas lost. This will require an overhang over nesting cups or purpose-built addition in keeping with the building e.g *Acer ecology 2024*



5.0 References

- Andrews H and Gardener M 2016, *Bat Tree Habitat Key – Database Report 2016.* Bridgewater:AEcol.
- Andrews H *et al.* 2016. *Bat Tree Habitat Key,* 3rd edn. Bridgewater: AEcol
- British Trust for Ornithology (2016) www.bto.org/about-birds/nnbw/putting-up-a-nest-box
- Collins, J. (ed.) (2023). Bat Surveys for Professional Ecologists —Good Practice Guidelines, 4th edition, Bat Conservation Trust, London.
- Garland & Markham (2008) Is important bat foraging and commuting habitat legally protected?
- Google Earth Pro (2023)
- Magic database (2023) http://www.magic.gov.uk/MagicMap.aspx
- Mitchell-Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature, Peterborough.

Appendix 1: Survey Plan



Appendix 2: Proposed Site Plan

Not suppluied

Appendix 3: Desk Study Information

MAGIC

EPSML's within 2km