BARN AT GREEN FARM, DOWNHEAD, SOMERSET

PROTECTED SPECIES SURVEY & MITIGATION STRATEGY

Final Report

21st January 2021

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1 Introduction

The client is seeking planning permission from Mendip District Council to convert one agricultural barn into a residential dwelling on land at Green Farm, Downhead, Somerset, BA4 4LQ.

Malford Environmental Consulting was commissioned to undertake a bat roost inspection and protected species survey of the building and immediate surrounding land. The survey was undertaken by Dr Stephen Dangerfield who has over 25 years' professional experience, is a Natural England licensed bat worker (NE Class Licence Level 1 WLM-CL17), Chartered Environmentalist and full member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

The survey concentrated on identifying the presence of, or potential for, roosting bats and other protected species (e.g. nesting birds, badger) inhabiting or using the building or immediate surrounding land. This report sets out the findings of the survey, 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), revised February 2019, requires the planning system should conserve and enhance the natural environment (Section 15) by, *inter alia*, 'protecting and enhancing sites of biodiversity value' and minimising impacts and providing net gains for biodiversity' (para 170).

2 Scope of Work and Methodology

A bat roost inspection and protected species survey was undertaken on 19th January 2021. The survey was undertaken by a licensed bat surveyor 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 available and were used where necessary to examine roof space, gaps/crevices and other small spaces potentially 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 and immediate surrounding land for the presence of nesting birds and other protected species.

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

3 Results

3.1 Building description

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

This is a double-height 'Dutch-style' barn, which is set into a vegetated earth bank, with mature hedgerow on either side. The barn is fronted by a green lane, with improved, grazed pasture surrounding it.

The barn is constructed with a metal frame and is open or has large openings on three sides. Walls comprise low (maximum 2m high) concrete blockwork, which are sealed on the sides and top leaving no gaps. The upper walls are single-skin corrugated metal that attach directly to the metal frame and are unlined.

The roof is rounded with a mono-pitched lean-to section, and both are clad in single-skin corrugated metal sheets that attach directly to the metal frame and are un-lined. There are no roof timbers and no ridge board. The building is open to the roof structure, and the floor is split into three levels being lined with concrete or earth.

There are no external or internal gaps/crevices or hidden voids or exposed roof timbers associated with this building. The building is very open, light, draughty (thermally unstable) as well as being enclosed or shaded by mature hedgerow that will keep much of the building interior cold, all of which significantly reduces its suitability for roosting bats.

The barn sits within a vegetated earth bank and is surrounded by self-set young/semi-mature trees and shrubs including ash (*Fraxinus excelsior*) [one growing within and through the roof at the rear of the barn], holly (*Ilex aquifolium*), hawthorn (*Crataegus monogyna*), elder (*Sambucus nigra*) and bramble (*Rubus fruticosus* agg). Some of this vegetation directly adjacent to the barn will need to be removed to facilitate the development.

3.2 Bats

There are no potential bat roosting features associated with the barn as there are no gaps, hidden voids or exposed roof timbers. The barn provides totally unsuitable environmental conditions for roosting bats being very open, light, draughty and shrouded by vegetation. There is no evidence to suggest that the building is being, or has ever been, used by roosting bats or by bats seeking a place of rest. No bats were present, no bat droppings were found anywhere either on the floor, surfaces or caught in webs on the walls/corners etc., and the inspection found no other evidence of the presence of bats. The barn is classed as Category 1 (not a roost) and is deemed to have no potential to support roosting bats in the future.

The adjacent trees and shrubs that will need to be removed to facilitate the development do not support any potential bat roosting features given their size/age, and as such are also classed as Category 1 (not a roost/negligible roost potential).

Roosting bats are therefore not a constraint for the proposed development, and no further bat survey is required.

The green lane and hedges adjacent to the barn are likely to be used by foraging/commuting bats. This habitat will remain physically unaffected, and a precautionary approach to any external lighting on the new dwelling is recommended to ensure no significant adverse impacts of foraging/commuting bats. No further bat survey is required.

3.3 Other protected species

There was no evidence of previous bird nesting within the barn or adjacent vegetation, and there is no evidence of owl nesting in the barn. However, it is acknowledged that a few common hedgerow birds or small passerines could nest within the adjacent shrubs/trees or possibly within the barn interior. Precautionary mitigation is recommended to ensure no adverse impact on nesting birds.

There was no evidence of any other protected species using this building or the immediate surrounding land within the development plot, for example, no badger sett, reptiles etc.

4 Conclusions

The barn is not used by bats for roosting, and provides no future opportunities for roosting bats given the construction/condition and environmental conditions of this building. The conversion of this barn does not require a Natural England licence under the provisions of the Conservation of Habitats and Species Regulations 2017. No mitigation for the protection of roosting bats is necessary.

Recommendations for external lighting on the proposed new dwelling to protect commuting/foraging bats and a feature that can be incorporated into the new dwelling to provide an enhancement for roosting bats are presented in Section 5.1 and 5.2.

There is no evidence of previous bird nesting within the barn or surrounding vegetation, but there is some potential for a few common nesting birds to be present in the future. All wild birds, their nests and eggs are legally protected. Precautionary mitigation to protect nesting birds is defined in Section 5.3, while a habitat feature that can be incorporated into the new dwelling to provide an enhancement for nesting birds is presented in Section 5.4.

There are no other protected species associated with this building or proposed development, and as such no further mitigation is required.

5 Mitigation and Enhancement

5.1 External lighting

In line with paragraph 125 of the National Planning Policy Framework, the proposed development should limit the impact of light pollution on foraging/commuting bats by keeping external lighting on the new dwelling to a minimum (both in terms of coverage, use and type/luminosity) and directed away from adjacent hedges that can be used by foraging/commuting bats to ensure there is no significant increase in ambient night-time light levels.

The new property should restrict external lighting, for example to just over doorways, and should be designed in compliance with guidelines on Bats and Lighting in the UK[2] to ensure adverse impacts on foraging/commuting bats are avoided or minimised to an acceptable level. This includes the following elements:

- Use of correct low powered LED lighting to minimise/avoid ultraviolet and infrared emissions and which have a sharp cut-off;
- Minimising outward light spill and avoiding upward light spill through the correct positioning of luminaires and use of shields/hoods.
- The artificial lighting will not operate through the night preferably being set on a motion detector so as to be used as and when required, thereby ensuring a long period of complete darkness during each night.

These design features mean there is no predicted adverse effect on foraging/commuting bats.

5.2 Bat roosting features

To provide an enhancement for bats one bat roosting brick should be incorporated, if practicable, into the fabric of an external wall, installed to provide isolated roosting habitat for crevice-dwelling bat species. The bat brick will be installed as high above the ground as possible at the apex of the south-facing elevation.

If an integrated bat brick cannot be incorporated then an alternative is to install one 'off-the-shelf' general purpose bat box on the exterior of the refurbished building or on an adjacent mature tree. The box should be placed as high as possible (minimum 3m above ground level) and with the box entrance facing south-east to south-west.

Alternative bat bricks and boxes can be viewed on-line (e.g. www.nhbs.com or www.wildcareshop.co.uk), with examples shown here including the Habibat bat brick (which can be faced with stone or timber) and the Schwegler 1FF general purpose bat box.

[2] Bat Conservation Trust and Institution of Lighting Professionals (2018). *Bats and artificial lighting in the UK (Guidance Note 08/18)*. Bats and the built environment series.

No external lighting must be used adjacent to or shine directly at the bat roost brick/box entrance slot. Clear lines of flight to the entrance slot must be maintained at all times.

5.3 Protecting nesting birds

Precautionary mitigation to ensure future protection of nesting birds the following action should be implemented as required:

- If refurbishment of the barn (especially roof removal or sealing of the building) and any shrub/tree removal is undertaken outside the bird breeding season (bird breeding season is considered to be from 1st March to 31st August) then this avoids the need for a pre-works inspection to determine the presence of nesting/breeding/roosting birds.
- If refurbishment work has to be undertaken inside the bird breeding season then a nesting bird inspection immediately prior to the commencement of work will be undertaken. If nesting birds or birds constructing a nest are subsequently identified to be present, then work in that area must cease until the nest is clear (i.e. birds have vacated the nest).

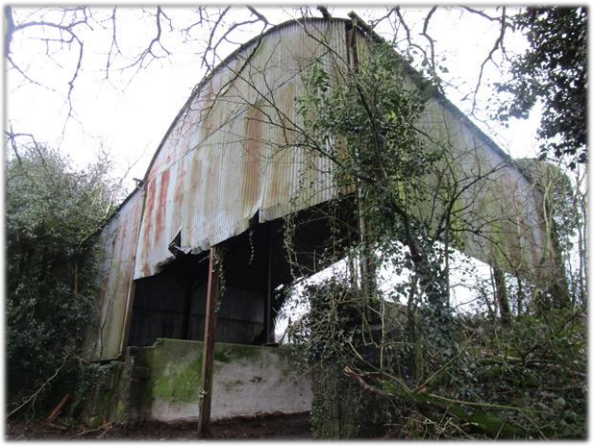
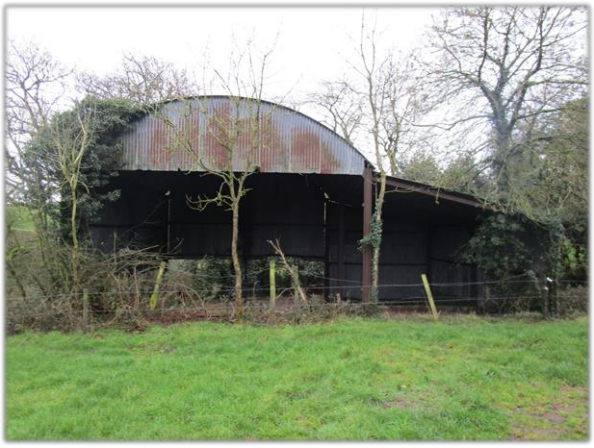
Regardless of timing or findings of previous surveys, if nesting birds are found within the site during any part of the construction / site clearance phase, then work will stop and a qualified ecologist consulted.

5.4 Bird nesting box

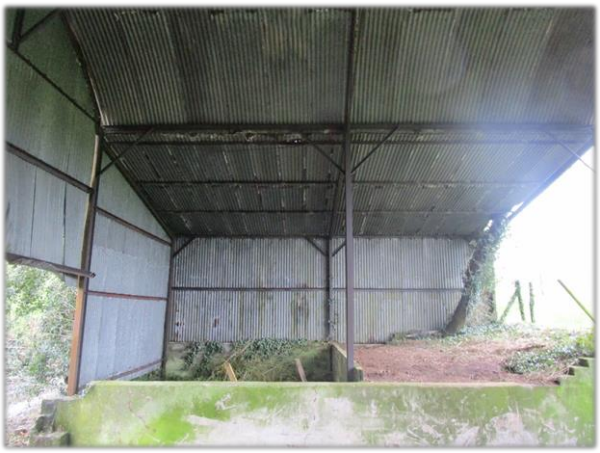
To provide new habitat for nesting birds, it is recommended that one sparrow (*Passer domesticus*) nest-box be included on the new dwelling. Bird boxes can either be integrated into the fabric of a wall (preferable) or bolted onto a wall as far above the ground as possible near to the roof apex of the north-facing elevation of the building, which provides shelter from direct sunlight.

Alternative bird boxes can be viewed on-line (e.g. www.nhbs.com or www.wildcareshop.co.uk), with an example of an integrated and bolt-on sparrow terrace box shown here.

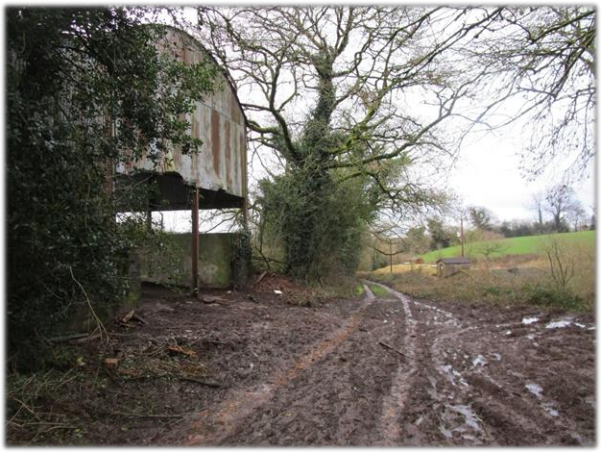
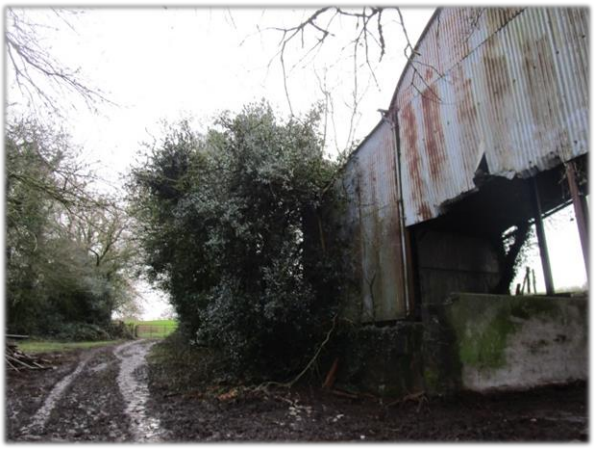
Appendix A Site Photographs

Barn exterior showing south-facing elevation (left) and north-facing elevation (right)

Barn interior showing main Dutch-style section (left) and lean-to (right)

Green lane looking east (left) and west (right)