



Newbold Farm Barn, Duntisbourne Abbots, Gloucestershire

Bat Survey Report

A report for Blake Architects Limited

August 2022

Ref: 251/R2 Status: Final Date: 05/08/2022
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1.0 Introduction

1.1 Herdwick Ecology was commissioned by Blake Architects Limited to undertake a Preliminary Roost Assessment and subsequent bat roost characterisation surveys at The Newbold Farm Barn, Duntisbourne Abbots, Gloucestershire, GL7 7JN during March to July 2022 (Grid Reference: SO96960793). The proposals include the conversion of the existing Tithe Barn into residential accommodation.

1.2 This report has been prepared to support a planning application and aims to:

- Describe and evaluate the habitats present within the study area
- Collate relevant biological records and assess their significance
- Identify any protected species issues or potential issues that may exist;
- Set out bat mitigation measures and licence requirements based on the roost status;
- Assess possible ecological constraints to development and make recommendations to avoid, minimise and mitigate for any potential impacts; and
- Set out opportunities for net gain and ecological enhancements in line with relevant planning policy, legislation and other published guidance.

1.3 This report has been prepared by Ceri Griffiths, Director at Herdwick Ecology, who is a Full Member of the Chartered Institute of Ecology and Environmental Management (CIEEM). Reference is made to the Good Practice Bat Survey Guidelines¹ and BS 42020:2013 Biodiversity - Code of practice for planning and development²

2.0 Legislation and Planning Policies

2.1 In carrying out this assessment relevant legislation, planning policies, and best practice guidelines were consulted and include:

- Conservation of Habitats and Species Regulations 2017 (as amended);
- Wildlife and Countryside Act 1981 (as amended);
- Countryside and Rights of Way (CRoW) Act 2000;
- Natural Environment and Rural Communities (NERC) Act 2006;
- National Planning Policy Framework 2021 (NPPF);
- Cotswold District Council Local Plan 2011- 2031.

¹ Collins, J (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd. Ed.) The Bat Conservation Trust, London (p.35)

² BSI (British Standards Institute) BS4202:2013 *Biodiversity – A code of practice for planning and development*. BSI, London.

National Planning Policy Framework (NPPF) 2021

- 2.2 National planning policy on biodiversity and conservation is set out in the National Planning Policy Framework (NPPF). This emphasises that the planning system should seek to minimise impacts on biodiversity and provide net gains in biodiversity wherever possible as part of the Government's commitment to halting declines in biodiversity and establishing coherent and resilient ecological networks. Chapter 15: Conserving and Enhancing the Natural Environment, is of particular relevance to this report as it relates to ecology and biodiversity. Relevant policies are set out below:
- 2.3 Paragraph 179: *"To protect and enhance biodiversity and geodiversity, plans should: a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity..."*
- 2.4 Paragraph 180 states: *"When determining planning applications, local planning authorities should apply the following principles:*
- a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts) adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
 - b) Relates to developments affecting SSSIs*
 - c) Relates to developments affecting irreplaceable habitats, such as ancient woodland*
 - d) "Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity."*
- 2.5 The Government Circular 06/2005, which is referred to by the NPPF, provides further guidance in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system.

Local Planning Policy

- 2.6 The Cotswold District Local Plan was formally adopted on 3rd August 2018. The plan provides an overall strategy for managing growth and development across the District, up to 2031. Policy EN8 'Biodiversity and Geodiversity: Features, Habitats and Species' sets out five statements relating to conserving and enhancing biodiversity across the District. Point 5 states: *Development with a*

detrimental impact on other protected species and species and habitats “of principal importance for the purpose of conserving biodiversity” (Section 41 (England) of the Natural Environment and Rural Communities Act 2006) will not be permitted unless adequate provision can be made to ensure the conservation of the species or habitat.

Species Protection

- 2.7 All species of bat found in the UK are listed under Schedule 5 of The Wildlife and Countryside Act 1981 (as amended) and are afforded protection under Section 9(4) (b&c) and Section 9(5) of Part 1 of the Act.
- 2.8 Under this legislation, a person is guilty of an offence if a person intentionally or recklessly:
- disturbs any bat while it is occupying a structure or place which it uses for shelter or protection;
 - obstructs access to any structure or place which any bat uses for shelter or protection.
- 2.9 In addition the protection afforded through UK legislation, further protection is provided to a small group of species, commonly referred to as ‘European Protected Species’ under the Conservation of Habitats and Species 2017 (as amended) (also known as the Habitats Regulations).
- 2.10 With regards to European Protected Species listed under Schedule 2 of the Act, it is an offence to:
- Intentionally or deliberately capture or kill, or intentionally injure the animal;
 - Deliberately disturb the animal or intentionally or recklessly disturb them in a place used for shelter or protection;
 - Damage or destroy a breeding site or resting place;
 - Intentionally or recklessly damage, destroy or obstruct access to a place used for shelter or protection.
- 2.13 The NERC Act also listed species of principle importance under Section 41 of the Act. This places further duties on the LPA to have due regard for the conservation of these species, such as hedgehog or certain bird species, which may be present on-site.

3.0 Methodology

Data Search

- 3.1 A data search was undertaken to look for designated sites, relevant to the application, and bat records within the locality. This can provide important contextual information to gain an

understanding of the site and surrounds. Online sources were reviewed, such as MAGIC³ and NBN Gateway⁴. In addition, the Cotswold District planning portal was searched for nearby applications.

- 3.2 A data search request from the local environmental records centre was not considered necessary to inform this report due to the scale of the proposals and size of the site.

Preliminary Roost Assessment

- 3.3 The Preliminary Roost Assessment was undertaken on the 1st March 2022. Weather conditions were dry and sunny, with a temperature of 3°C. There had been a heavy frost overnight. The perimeter of the building was systematically inspected, and the exterior assessed, with the aid of binoculars (Pentax 10 X 36), endoscope and high powered torch, where necessary. A description of the building was made, and the location of any potential access points or roost locations were noted. These included:

- Suitable cracks and crevices within stone or brick work;
- Suitable access points via head of gable end and within lintels and gaps around windows

- 3.4 The surrounding habitat was also assessed for its suitability for foraging and commuting quality.

- 3.5 The internal assessment involved a search to look for bats, or evidence of bats such as droppings or staining around common roost locations. A high-powered torch and endoscope were used where necessary to inspect the building more closely.

- 3.6 Following the inspection, an assessment was made of the building's suitability to support a bat roost, following the criteria set out in Table 1 below.

Table 1 Suitability Assessment⁵

Suitability	Roosting Habitat
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats
Moderate	A building 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

³ <https://magic.defra.gov.uk/>

⁴ <https://nbnatlas.org/>

⁵ Collins, J (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd. Ed.) The Bat Conservation Trust, London (p.35)

High	A building 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 and surrounding habitat.
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3.7 In many situations it is not possible to inspect all locations where bats may be present, or any bats that may be present, may not be visible at the time of the survey. Hence, an absence of bats does not necessarily mean that a roost is not present and further activity surveys may be required to confirm presence or absence.

Bat Activity (Roost characterisation) surveys

3.8 The building inspection identified droppings from two separate species within the building, and the external features were assessed the building has having potential to support a bat roost. Hence, bat surveys were recommended to ascertain whether a roost was present, and if so, its status and population size. As set out in best practice guidance⁷, a building that has high potential requires three surveys respectively.

3.9 Surveyors/thermal imagery cameras were positioned around the buildings in suitable weather conditions, to look for bats emerging from their roosts (see Table 2). Dusk surveys commenced 15mins prior to sunset and continued for 1hr30mins thereafter. EMT2 Touch Pro bat detectors to record the bat echolocation calls to analyse following the survey

3.10 A Pulsar Helion XP50 Pro and Guide Infrared TRACKIR Pro 19 were used. As stated within the BCT Interim Guidance Note⁶ (May, 2022) Nigh Vision Aids (NVA) can negate the need to undertake dawn surveys as access points can be accurate determined. The Pulsar and Guide has a resolution of 640x480 17 µm and 12µm respectively.

Static Detector Survey

3.11 In addition to the roost characterisation surveys, a static detector (AnaBat Express) was left within the barn for eight consecutive nights between 21st June to 28th June 2022. The records were analysed using Analook W software.

Limitations

3.12 The western gable end was not fully visible as is overlooking the neighbouring property. However the thermal camera was well positioned to see the apex of the roof line.

⁶ [Interim-guidance-note-on-NVAs-May-2022-FINAL.pdf \(bats.org.uk\)](#)

Table 2 Survey Information

Date	Sunset/ Sunrise Time (Start/finish time)	Weather Conditions
17/05/2022	20:57 (20:35/22:27)	16C at start, light drizzle prior to start BF0; 100% cloud. 12C at finish
14/06/2022	21:28 (20:13/23:00)	15C at start, BF0, 0% cloud. 14C at finish
29/06/2022	21:31 (21:15/23:02)	13C at start, no rain, BF1, 100% 11C at finish

**Plate 1: Surveyor/thermal camera locations**

3.0 Baseline Conditions

Site Location

- 3.1 The site lies in a rural location within the small village of Duntisbourne Abbots. There are a number of residential properties within the locality and is surrounded by mature gardens and trees.
- 3.2 The wider landscape comprises agricultural and equestrian land, with a mix of arable and pasture/silage crop. The fields are interspersed by hedgerows, which appear well managed. There are small parcels of woodland within 1km of the barn, which are highlighted as Deciduous woodland

Priority Habitat. The surrounding habitat and properties are considered to offer good opportunities for bats.

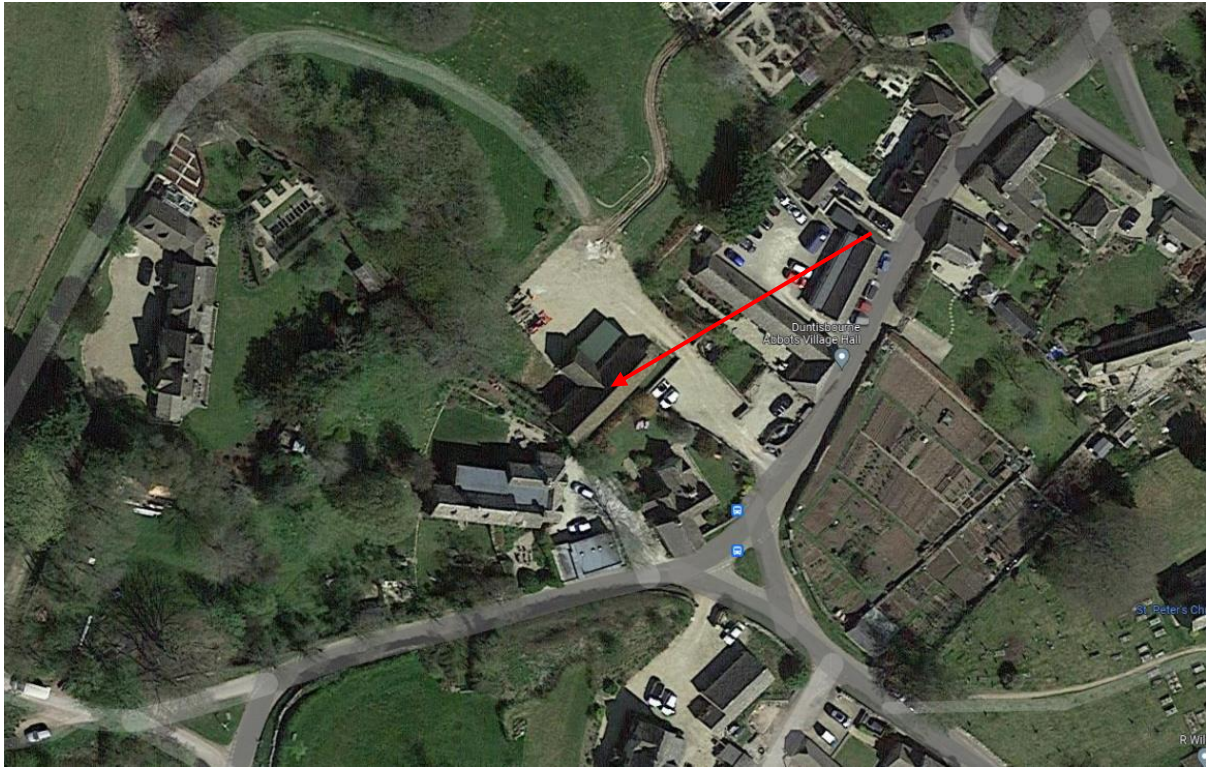


Plate 1: Site Location (Google, April 2022)

Data Search

- 3.3 There are no statutory designated sites within 4km of the site. The Juniper Hill, Edgeworth Site of Special Scientific Interest (SSSI) lies 4.8km to the west. This site is notified for its calcareous scrub habitats. The closest statutory designated site of relevance (i.e. those for which bat species are the qualifying feature, or reason for notification) is the Woodchester Park Site of Special Scientific Interest (SSSI). This site support a large maternity roost of greater horseshoe bats and lies over 15km to the west.
- 3.4 A number of European Protected Species (EPS) licences were identified from Magic:
- Common pipistrelle, lesser horseshoe and brown long eared bat resting place 1.4km to the north (dated 2011 - 2012)
 - Brown long-eared, common pipistrelle, lesser horseshoe and natterer's bat resting place 1.9km to the north (dated 2018-2023)
 - Brown long-eared, common and soprano pipistrelle, lesser horseshoe, serotine, whiskered/Brandt's and natterer's bat roost (both breeding and resting place) 2.3km southwest (dated 2011-2016)

- Brown long eared and common pipistrelle bat resting place 2.7km to the northeast (dated 2013)
- Brown long eared bat breeding place 3.2km to the north (dated 2017-2027)

Preliminary Roost Assessment

- 3.5 The Tithe Barn is large stone 'T'- shaped building with a pitched clay tile roof. There is a single storey timber framed lean-to to the rear (northern) elevation, which has a sloping corrugated metal roof. In addition, there is an original small lean to on the side (NE) elevation, which has a sloping stone tiled roof.
- 3.6 There are large traditional timber barn doors to the side elevations with timber lintels. The eaves and gable ends sit flush to the wall and no soffits are present. An open 'arrow slit' is present on the rear elevation and there are a number of other gaps and crevices within the stonework and around the door lintels that allow direct access into the barn. There is some ivy growth across the building and up onto the roof. The roof tiles are generally in a good condition, with only a few slipped tiles noted that could provide access for bats beneath.



Plate 2: Side (NW elevation) of the barn showing more recent single storey lean-to

- 3.7 Internally, the building open with the exposed timber beams, and there is no separate roof void. The roof is lined with bitumastic felt, which appears to be in a good condition. Light ingress is visible around the barn doors and through some of the gaps within the stone work. There are numerous crevices through the internal stonework that go far back into rubble filled cavities or behind the stones. There are also crevices within the mortise and tenon joints and where the timber frame joins the stone walls. The southern gable appears to have received some repair work and is partially constructed of breeze block.
- 3.8 Whilst no bats were seen during the inspection, a number of bat droppings were identified throughout the barn, and were considered to be from at least two different species of bats. There was a general scattering of droppings but also an accumulation of around 100+ below the ridge beam towards the eastern side of the barn. These were considered to be from a serotine bat. A small accumulation was also found within a crevice in the northern wall. The droppings were characteristic of a pipistrelle species.
- 3.9 As evidence of bats have been identified, the building is considered to support a bat roost although further surveys will be required to ascertain the type and status of the roosts. In addition, the external features are considered to offer high potential for bats. A detailed inspection was undertaken of accessible crevices and no hibernating bats were found but the building is likely to offer some potential for individual/low numbers of crevice dwelling bat species.
- 3.10 An update building inspection during the placement and collection of the AnaBat in June 2022. There were no droppings within the crevice, but additional scatterings of droppings below the ridge line (<50). Again on the 29th June, droppings (<10) were found in the same location beneath the ridge. The droppings were considered to be from a serotine bat.



Plate 3: Internal view of barn showing doors.

- 3.11 No bird nests were noted during the survey, but the building is likely to offer suitable nesting opportunities for a number of species.

Presence/absence surveys

- 3.12 In summary, the surveys identified:
- Serotine day roost, with a maximum count of three bats; and
 - Common pipistrelle day roost, with a maximum count of two bats.

Dusk emergence survey 17th May 2022

- 3.13 The survey identified three serotine bats along the ridge line as shown in Plate 4 below. In addition, two common pipistrelles emerged from close to the ridge of the lower section



Plate 4: Emergence points during the surveys (Two common pipistrelles emerged at yellow star, two serotine bats from the red star and one from the blue star)

Dusk emergence survey 26th May 2022

- 3.14 The survey identified a single serotine bat emerging from the red star in Plate 4. A single common pipistrelle emerged from the same location, as illustrated in Plate 4.

Dusk emergence survey 29th June 2022

- 3.15 The survey did not record any bats emerging from the property and overall activity was significantly lower than the previous two surveys.

Static detector

- 3.16 The static detector recorded a variable amount of bat activity, from one distant common pipistrelle pass, with a higher number of common pipistrelle passes between midnight and 04:00. Faint serotine passes were only recorded on two of the eight nights.

Overall bat activity

- 3.17 Both common and soprano pipistrelles were recorded during the survey, although activity decreased after this first hour as the bats probably moved onto foraging grounds. Serotines were frequently recorded during the first survey, with constant foraging around the trees to the northern of the Tithe Barn. An occasional brown long-eared bat and noctules were also recorded.

4.0 Avoidance, Mitigation and Enhancement Measures

- 4.1 In line with National and Local planning policies, developments should seek to ensure the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species populations. Therefore the following section sets out avoidance and mitigation measures that should be implemented, together with enhancement opportunities, with the aim of delivering a net gain in biodiversity.
- 4.2 There will be no anticipated habitat loss as a result of the proposals and there are significant opportunities to improve and enhance the wider habitats through a sensitive planting scheme, as detailed below.

Roost Assessment Summary

- 4.3 In summary, the surveys identified:
- Serotine day roost, with a maximum count of three bats; and
 - Common pipistrelle day roost, with a maximum count of two bats.
- 4.4 Both roosts are considered to be of a low conservation significance.

Bat Mitigation Strategy

- 4.5 As a roost has been identified, a Natural England bat mitigation licence will be required, post planning but prior to works commencing onsite. The low impact bat licence (BMCL) is not currently applicable for serotine roosts within Gloucestershire, hence a individual traditional Natural England Bat Mitigation Licence will be need to be obtained.
- 4.6 The Tithe Barn is to be renovated and converted into a residential dwelling. This will involve the re-roofing on the building. It is proposed to retained roosting opportunities for both species with bat access tiles reinstated along the ridge line, at the apex/gables and beneath the common roof tiles. In addition, access should be retained into the cavity wall by leaving existing mortar gaps to allow for day roosting and hibernation opportunities.

- 4.7 Previously, only traditional bitumen Type 1F felt could be used in known bat roosts, however there is now the option to use specific types of breathable membranes that have been approved by Natural England, such as TLX bat safe.
- 4.8 Once planning has been received, the bat mitigation licence will be applied that will set out the specific mitigation and enhancement measures. In addition, the following measures will need to be implemented:
- Timings: There is greater flexibility over the timings of the works due to the lower conservation significance of the roosts, although winter (Nov -mid-March) should be avoided. The optimum months for the roofing works would be the shoulder months, which are mid-March/April and mid-sept/October.
 - Prior to works starting, a bat box would be placed on a nearby tree so that any bats identified during the works can be relocated.
 - A licensed bat worker would be present to provide a tool box talk to all contractors and to oversee the tile removal.
- 4.9 Should a bat be found during works, then it will be moved by the licensed ecologist into the tree mounted bat box.

Other Mitigation Measures

- 4.10 The following measures should be implemented:
- The lighting design will need to be sensitively designed to avoid all impacts to the hedgerows/trees and trees to ensure a dark continuous corridor is maintained. Any lighting should adhere to the principles set out in the ILP Guidance Note 08/18 Bats and artificial lighting in the UK⁷
 - Foundation trenches and all excavations must either be covered overnight or must have scaffolding boards, or similar, placed within them to ensure that any animals that fall in are able to escape.
 - Raise stored materials (that might act as temporary resting places for species such as amphibians and reptiles) off the ground, e.g. on pallets.

Enhancement Opportunities

- 4.11 The proposed development should seek to achieve a net gain in biodiversity in line with National and Local planning policies. The following could be incorporated into the design:

⁷ <https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/>

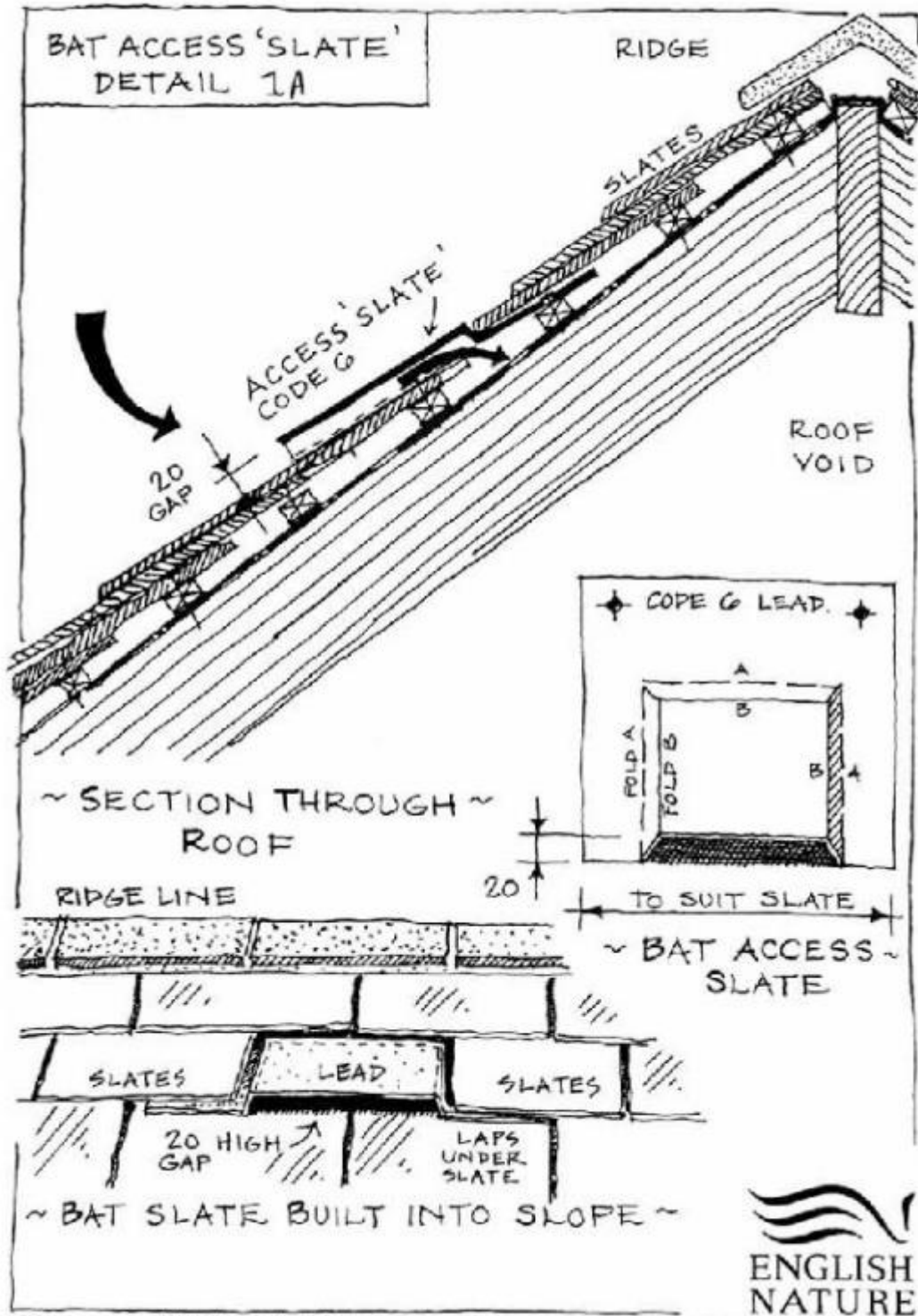
- Swifts were recorded around the village during the survey and integrated swift boxes could be installed within stone work during restoration⁸
- A sensitive planning scheme could be implemented for the wider site, that could include a more relaxed management of some of the grassland to allow for species diversity to increase.
- Bird boxes can be placed on the new building or on the larger fruit trees within the garden.
- Additional habitat boxes or log piles for invertebrates, hedgehogs and amphibians/reptiles could be placed adjacent to the hedgerows to provide further opportunities for species.

4.12 Taking the above into account, no ecological constraints have been identified and hence it is considered the proposed development does not contravene the local planning policies and will seek to deliver a net gain in biodiversity in line NPPF.

⁸ [Nichoir à martinets à encastrer Vivara Pro \(wildcare.co.uk\)](http://wildcare.co.uk)

Appendix 1:

Bat access tile/slate under 'common' tiles



SP The above information is for guidance only and may not be appropriate in all circumstances. If in doubt seek professional advice.
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Ridge Access

