



PHASE 2 BAT SURVEY

**MAWLES FARM, SIBFORD GOWER,
BANBURY, OXFORDSHIRE,
OX15 5RW**

Date: 6th July 2020

Client: Mr & Mrs Broom

Ridgeway Ecology Ltd

36 Chichester Lane, Hampton Magna, Warwick,
Warwickshire, CV35 8TG, UK

Tel: 01926 259182

Mob: 07973445101

Email: enquiries@ridgewayecology.co.uk

Web: www.ridgewayecology.co.uk

Control Sheet

General Report Information	
Report title	Phase 2 Bat Survey Report
Client	Mr & Mrs Broom
Location	Mawles Farm, Sibford Gower, Banbury, Oxfordshire, OX15 5RW
Lead ecologist	J. Russ
Report author	Dr. J. M. Russ

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1 Introduction

1.1 Background to activity/development

This report has been prepared by Dr Jon Russ at the request of Aaron Marriott of Ian O'Brien Studio, acting on behalf of Mr & Mrs Broom. Planning consent is being sought from Cherwell District Council to convert the barns at Mawles Farm, Sibford Gower, Banbury and develop the site to provide two dwellings. A Preliminary Ecological Appraisal of the site, which included a Phase 1 bat survey, identified a barbastelle bat roosting within the L-shaped barn (see *Preliminary Ecology Appraisal, Mawles Farm, Sibford Gower, Banbury, Oxfordshire, OX15 5RW, by Ridgeway Ecology Ltd dated 24th September 2019*). The L-shaped barn was assessed as being of moderate bat roosting potential for bats as there are numerous access points under the slates and suitable potential roosting features for both crevice-dwelling bats (e.g. between slates and timber sarking, under ridge tiles, in crevices in the stone walls) and 'attic'-dwelling species (e.g. in the open roof voids, along exposed roof timbers), some of which are suitable for maternity roost and hibernation sites. The outbuilding was assessed as being of low bat roosting potential as although there are numerous openings, there are very few potential roosting sites. The steel-framed barn and timber shed were considered to be of negligible bat roosting potential. As a consequence, it was recommended that "*nocturnal (evening emergence and/or dawn) surveys are carried out between May and August (inclusive) in accordance with the guidelines produced by the Bat Conservation Trust (Collins 2016) to determine the status of the identified barbastelle roost type and to identify whether other bat species are roosting within the stone buildings*".

The current report contains the results of these Phase 2 activity surveys with reference to the Phase 1 bat survey.

1.2 Site description

(see *Preliminary Ecology Appraisal, Mawles Farm, Sibford Gower, Banbury, Oxfordshire, OX15 5RW, by Ridgeway Ecology Ltd dated 24th September 2019*) and Figure 1.

1.3 Proposed works

Planning consent is being sought from Cherwell District Council to convert the barns at Mawles Farm, Sibford Gower, Banbury and develop the site to provide two dwellings.

1.4 Planning and legislative context

The information below is intended only as guidance to the legislation relating to these species. The Acts themselves should be referred to for the correct legal wording.

Bats – Legislative context

All bats are included in Schedule 2 of The Conservation of Habitats and Species Regulations 2010, which implement the requirements of the Habitats Directive in England, Scotland and Wales and in Schedule 2 of the Conservation (Natural Habitats, &c.) Regulations (Northern Ireland) 1995 (as amended) which implement the requirements of the Habitats Directive in Northern Ireland. Bats and their breeding sites or resting places are protected under Regulation 39. An amendment to the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 came into force in Northern Ireland on 21st August 2007 (Conservation (Natural Habitats, etc.) (Amendment) Regulations (Northern Ireland) 2007).

It is an offence for anyone without a license to:

- Intentionally or recklessly/deliberately injure, take or kill a bat;
- To possess a bat (unless obtained legally) whether alive or dead;
- Intentionally or recklessly/deliberately damage, destroy or obstruct access to any place that bats use for shelter or protection whether bats are present or not;
- Intentionally or recklessly/deliberately disturb a bat while it is occupying a structure or place that it uses for shelter or protection.
- deliberately disturb bats in such a way as to be likely significantly to affect—
 - (i) the ability of any significant group of bats to survive, breed, or rear or nurture their young; or
 - (ii) the local distribution or abundance of that species;

Prosecution could result in imprisonment, fines of £5,000 per animal affected and confiscation of vehicles and equipment used.

Recent amendments to the Habitat Regulations in 2007 have removed many of the defences. This includes the commonly relied upon 'incidental result defence', which previously covered acts that were the incidental result of an otherwise lawful activity and which could not reasonably have been avoided. As the incidental result of a lawful operation defence has been removed from legislation (Conservation (Natural Habitats, &c.) (Amendment) Regulations 2007) operators are now open to this strict liability offence, whether the damage occurs by accident or not. An offence will only be committed if the deliberate disturbance is likely to significantly affect a significant group of animals of that species' ability to survive, breed, or rear or nurture its young or is likely to significantly affect the local distribution or abundance of that species. Deliberate disturbance of a protected animal (species on Schedule 5 which includes EPS) in its place of shelter or protection will continue to be an offence under the Wildlife and Countryside Act 1981. However, the incidental result of a lawful operation defence will be available for that offence where the disturbance could not have been reasonably avoided.

In England, Scotland and Wales all bat species are protected under the Wildlife and Countryside Act 1981 (WCA) (as amended) through inclusion in Schedule 5. The existing offences under the Wildlife and Countryside Act (1981) as amended which cover obstruction of places used for shelter or protection, disturbance and sale still apply to European protected species.

In England and Wales, the WCA was amended by the Countryside and Rights of Way Act 2000 (CRoW), which adds an extra offence ('or recklessly' to S9(4)(a) and (b)), makes species offences arrestable, increases the time limits for some prosecutions and increases penalties.

Exemptions can be granted from the protection afforded to bats under the Habitat Regulations, by means of an EPS (European Protected Species) Habitats Regulations licence obtained from Natural England.

A 'EPS Habitats Regulations Licence' could be required for:

- Demolition of a building known to be used by bats prior to development of a site
- Conversion of barns or other buildings known to be used by bats
- Removal of trees known to be used by bats as well as tree pruning
- Significant alterations to roof voids known to be used by bats
- Road building or widening
- Bridge strengthening

There are three tests, which must be satisfied, before a licence can be issued to permit otherwise prohibited acts;

- Regulation 53(2)(e), for the purpose of preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment; or
- Regulation 53(2)(f) for the purpose of preventing the spread of disease; or
- Regulation 53(2)(g) for the purpose of preventing serious damage to livestock, foodstuffs for livestock, crops, vegetables, fruit, growing timber or any other forms of property or to fisheries; subject to Natural England being satisfied that the application additionally meets:
 - Regulation 53(9)(a) that there is no satisfactory alternative; and
 - Regulation 53(9)(b) that the action authorised will not be detrimental to the maintenance of the species concerned at a favourable conservation status in their natural range.

A European Protected Species License is required before the commencement of any development that might impact on bats or their roosts.

Planning policy and Biodiversity Action Plan context

The National Planning Policy Framework (NPPF) is guidance for local planning authorities on the content of their Local Plans, but is also a material consideration in determining planning applications. The NPPF has replaced much existing planning policy guidance, including Planning Policy Statement 9: Biological and Geological Conservation. However, the government circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact within the Planning System, which accompanied PPS9 remains valid.

The Natural Environment and Rural Communities (NERC) Act 2006, in particular Section 40, places a duty on public bodies to have regard to the conservation of biodiversity. This duty is guided by the habitats and species lists in Section 41 of the Act, within which seven bat species are included: barbastelle (*Barbastella barbastellus*), Bechstein's (*Myotis bechsteinii*), noctule (*Nyctalus noctula*), soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared (*Plecotus auritus*), greater horseshoe (*Rhinolophus ferrumequinum*) and lesser horseshoe (*Rhinolophus hipposideros*) bats. These seven species are also listed as Priority Species within the UK Biodiversity Action Plan (UKBAP), (the UK Government's response to the Convention on Biological Diversity).

1.5 Objectives

The bat survey was commissioned to assess:

- what species of bat are present at the site;
- what types of bat activity are occurring within the site;
- whether or not bats are roosting within the site; what population levels (size and importance) are present at the site;
- and to make recommendations on any further action that may be required to provide sufficient information for the local planning authority to support a planning application

2 Methods

2.1 Pre-survey data search

(see *Preliminary Ecology Appraisal, Mawles Farm, Sibford Gower, Banbury, Oxfordshire, OX15 5RW, by Ridgeway Ecology Ltd dated 24th September 2019*).

2.2 Surveyor information

The survey was carried out by Dr Jon Russ CEnv, MIEEM (Natural England Class 3 & 4 Bat Licences CLS2294) and Steve Russ (Natural England Class 2 Licence CLS00074).

Dr Jon Russ is a terrestrial and behavioural ecologist with a specialist interest in bats. As Director of Ridgeway Ecology Ltd and through his academic research and work with the Bat Conservation Trust he has managed, designed and carried out large and small scale bat surveys and bat monitoring programmes in the UK and the tropics. He has extensive experience of the United Kingdom and European Union legislation regarding bats and has been a fully licensed bat worker for over 15 years, holding bat conservation, education and scientific licences for radio-tracking, mist-netting, ringing, harp-trapping, ultrasonic playback and DNA sampling. His publication record includes a large number of articles in scientific journals as well as other publications including the widely used book, "The Bats of Britain and Ireland: Echolocation, Sound Analysis, and Species Identification", "Review of ASSI designation for bats in Northern Ireland", "The Northern Ireland Bat Action Plans" which he coordinated and delivered and more recently "British Bat Calls: A Guide to Species Identification". In addition, Jon has a great deal of experience of avoidance, mitigation and compensation measures relating to bats and development.

Steve Russ has been involved with bats since 2004 having worked with Ridgeway Ecology Ltd since 2008. He has held a bat 'surveyors' licence since 2010 and obtained an MSc in Conservation Ecology from Oxford Brookes in 2010.

2.3 Field surveys

The bat survey was undertaken in accordance with current best practice guidelines, which include: Bat Mitigation Guidelines (Mitchell-Jones, 2004); The Bat Workers Manual (Mitchell-Jones & McLeish, 2004); and Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins 2016).

2.3.1 Habitat survey

A survey of the habitats that may be used by roosting bats was carried out.

2.3.2 Bat roost survey

(see *Preliminary Ecology Appraisal, Mawles Farm, Sibford Gower, Banbury, Oxfordshire, OX15 5RW, by Ridgeway Ecology Ltd dated 24th September 2019*) and Figure 2.

2.3.3 Bat activity survey(s)

Observations of bat activity were made by two surveyors. One surveyor was equipped with a with a Pettersson D240x bat detector and one with a Pettersson D980 detector. Both detectors are capable of scanning in heterodyne mode and recording in broadband. Calls were analysed using the BatSound software.

From 1st June 2020 to 9th June 2020 a static detector (Wildlife Acoustic SM2) was placed inside Building A4 (Figure 3).

Table 1. Timings of nocturnal surveys

Survey Date	Survey Start Time	Survey End Time	Sunset/(Sunrise)
5 th May 2020	04:00	05:30	(05:30)
1 st June 2020	21:00	22:45	21:20
1 st July 2020	03:15	05:00	(04:47)

Table 2. Weather conditions during the nocturnal surveys

Survey Date	Temperature at Start of Survey (°C)	Temperature at End of Survey (°C)	Cloud Cover (%)	Wind (0-5)	Rain
5 th May 2020	10	10	0	1	None
1 st June 2020	19	16	0	1	None
1 st July 2020	15	15	40	0	None

3 Results

3.1 Pre-survey data search

3.1.1 Designated sites

(see Preliminary Ecology Appraisal, Mawles Farm, Sibford Gower, Banbury, Oxfordshire, OX15 5RW, by Ridgeway Ecology Ltd dated 24th September 2019).

3.1.2 Protected species

(see Preliminary Ecology Appraisal, Mawles Farm, Sibford Gower, Banbury, Oxfordshire, OX15 5RW, by Ridgeway Ecology Ltd dated 24th September 2019).

3.2 Field Surveys

3.2.1 Habitat description

(see Preliminary Ecology Appraisal, Mawles Farm, Sibford Gower, Banbury, Oxfordshire, OX15 5RW, by Ridgeway Ecology Ltd dated 24th September 2019).

3.2.2 Bat roost survey

(see Preliminary Ecology Appraisal, Mawles Farm, Sibford Gower, Banbury, Oxfordshire, OX15 5RW, by Ridgeway Ecology Ltd dated 24th September 2019).

3.2.3 Bat activity survey(s)

5th May 2020 – Dawn Survey

Surveyors were positioned at the south-west corner of Building A1-A7 and in the courtyard to the east of this building (Figure 3). An infrared video camera was directed into the northern entrance of A1. Activity was very low with only two common pipistrelles being recorded (Tables 3-5).

Table 3. Summary of bat activity within the site boundary – surveyor positioned to the south-west of the building A1-A7.

Time	Activity	Species
	No bats recorded	

Table 4. Summary of bat activity within the site boundary – surveyor positioned to the east of building A1-A7

Time	Location	Species
04:51	1 bat observed flying near the steel-framed barn to the north-east	<i>Pipistrellus pipistrellus</i>
04:53	1 bat observed flying near the steel-framed barn to the north-east	<i>Pipistrellus pipistrellus</i>

Table 5. Summary of bat activity within the site boundary – infrared video camera directed into the entrance of Building A1.

Time	Activity	Species
	No bats recorded	<i>Pipistrellus pipistrellus</i>

1st June 2020 – Dusk Survey

Surveyors were positioned at the south-west corner of Building A1-A7 and in the courtyard to the north-east of this building (Figure 3). An infrared video camera was directed into the northern entrance of A1. A single common pipistrelle was observed emerging from a crevice in the stone wall at the north-east corner of Building A4 and a single barbastelle was observed roosting within Building A4 (Tables 6-8).

Table 6. Summary of bat activity within the site boundary – surveyor positioned to the south-west of the building A1-A7.

Time	Activity	Species
21:48 – 22:45	Intermittent, infrequent activity. Occasionally bats flew along the road but more often than not bats were seen and not heard	<i>Pipistrellus pipistrellus</i>

Table 7. Summary of bat activity within the site boundary – surveyor positioned to the north-east of building A1-A7

Time	Location	Species
21:53	1 bat observed emerging from a crevice at the NE corner of A4	<i>Pipistrellus pipistrellus</i>
21:55 – 22:45	For the first 40 minutes, almost constant foraging activity in the courtyard, the tailing off in activity	<i>Pipistrellus pipistrellus</i>
22:28 – 22:45	1 bat observed alongside the timber beam at the top of Building A4. The bat was not present at the start of the survey.	<i>Barbastella barbastellus</i>

Table 8. Summary of bat activity within the site boundary – infrared video camera directed into the entrance of Building A1.

Time	Activity	Species
	No bats recorded	<i>Pipistrellus pipistrellus</i>

1st July 2020 – Dawn Survey

Surveyors were positioned at the south-west corner of Building A1-A7 and in the courtyard to the north-east of this building (Figure 3). Activity was quite low with common pipistrelles being recorded regularly and a single barbastelle being observed in A4 (Tables 9 and 10).

Table 9. Summary of bat activity within the site boundary – surveyor positioned to the south-west of the building A1-A7.

Time	Activity	Species
03:15 – 04:14	Occasional passes along the road	<i>Pipistrellus pipistrellus</i>

Table 10. Summary of bat activity within the site boundary – surveyor positioned to the north-east of building A1-A7

Time	Location	Species
00:05	1 bat observed flying and perching in A4 (Photograph 1)	<i>Barbastella barbastellus</i>
03:15 – 04:21	1 bat regularly observed foraging in the courtyard area	<i>Pipistrellus pipistrellus</i>

1st June 2020 – 9th June 2020 - Static detector survey

From 1st June 2020 to 9th June 2020 a static detector (Wildlife Acoustic SM2) was placed inside Building A4 (Figure 3). A variety of species were recorded within this building. Based on the structure of the calls, the noctules were almost certainly flying outside the building as were some, but not all, of the pipistrelle bat calls. The remainder of the calls were recorded from bats flying inside the building. Most notable is the recordings of lesser horseshoe bats which were clearly from a bat flying, and possibly perching, within the building.

Table 11. Bat roosting potential of the buildings and evidence of bats

Night (starting date)	Whiskered/Brandt's bat	Noctule	Common pipistrelle	Soprano pipistrelle	Lesser horseshoe bat
01/06/2020	1	18	35	12	35
02/06/2020	1	1	3		35
03/06/2020		21	18	5	2
04/06/2020			9	3	34
06/06/2020				2	28
07/06/2020		1	2		2
08/06/2020			10	2	
09/06/2020		3	9	18	14

3.2.4 Interpretation and evaluation of survey results

A single barbastelle bat was consistently present within Building A4 (Figure 4). The bat was present both during the day and through the night. The roost is therefore likely to be a day roost and night roost.

A static detector recorded lesser horseshoe bats entering Building A4 on seven nights out of eight. The bat(s) entered the building regularly throughout the night (Table 12) and it is likely therefore that this part of the building is being used as a night roost/feeding perch (Figure 4).

Table 12. Counts of lesser horseshoe bat passes recorded hourly over an eight-night period.

Time period	Bat count
21:00 - 22:00	
22:00 - 23:00	57
23:00 - 00:00	16
00:00 - 01:00	40
01:00 - 02:00	4
02:00 - 03:00	26
03:00 - 04:00	7
04:00 - 05:00	
05:00 - 06:00	

A single common pipistrelle is using a crevice near the corner of A3 and A4 as a day roost (Figure 4).

4 Assessment

4.1 Constraints

None.

4.2 Potential impacts of the development

Planning consent is being sought from Cherwell District Council to convert the barns to provide two dwellings. The conversion of Building A1-A7, will result in the loss of the identified barbastelle night roost/day roost (1 bat obs.), the lesser horseshoe bat night roost/feeding perch (1 bat obs.) and the common pipistrelle day roost (1 bat obs.) (Figure 4).

5 Recommendations and mitigation

The survey evidence demonstrates that a barbastelle night roost/day roost (1 bat obs.) and a lesser horseshoe bat night roost/feeding perch (1 bat obs.) are located within Building A1-A7 at Mawles Farm, Sibford Gower and that a common pipistrelle day roost (1 bat obs.) is located in a crevice in the external wall near the corner of Building A3 and A4 (Figure 3; see 3.2.2, 3.2.3 and 3.2.4).

Planning consent is being sought from Cherwell District Council to convert the barns to provide two dwellings. The conversion of Building A1-A7, will result in the loss of the identified barbastelle night roost/day roost (1 bat obs.), the lesser horseshoe bat night roost/feeding perch (1 bat obs.) and the common pipistrelle day roost (1 bat obs.) (Figure 3).

As all bat roosts (places that bats use for shelter or protection) are protected under current legislation (whether bats are present or not) a European Protected Species (EPS) licence is required to destroy the roost sites and access points identified and to disturb any bats present. The licence must be applied for after full planning permission is obtained and any relevant conditions have been discharged. The application must be completed by a suitably qualified ecologist.

Mitigation to protect the bats that are currently occupying the building and to provide roosting opportunities will be required. The following agreed measures are site-specific taking into account the roost types and the status of the identified species at the local, regional and national level and will be implemented to reduce the impacts of the proposed work on bats and their roost sites.

Barbastelle (*Barbastella barbastellus*) – night roost/day roost (1 bat obs.) and Lesser horseshoe bat (*Rhinolophus hipposideros*) – night roost/feeding perch (1 bat est.)

- A bat loft will be constructed above the proposed south entrance measuring at least 4m by 4m with a floor to ridge height of 2m.
- The roof will be covered with tiles or slates and will be lined with a traditional bitumastic lining (BS747, 1F Felt).
- Access to the bat loft will be via two openings under tiles or slates (Figure 6; Photographs 2 and 3) as well as a 200mm wide by 150mm opening in the floor of the loft. Above this opening there will be a wooden surround of approximately 400mm in height to deter birds from entering the loft. A cowl will be added to reduce light spill.
- The loft will contain 3 x Greenwoods EcoHabitats Three Crevice Bat Boxes (Photograph 4), suitable for barbastelle bats, or similar.
- A small loft hatch (400mm x 400mm) will be constructed for monitoring purposes.
- A sign will be attached to the loft stating that it contains protected species and that any disturbance or destruction is an offence. The phone number of the ecologist will be included.

Common pipistrelle (*Pipistrellus pipistrellus*) – day roost (est. 1 bat) and Further enhancements

- Access will be provided to six cavities under slates/tiles on the south and west facing roof pitches of Building A1-A7 (Figure 5). Access will be via bespoke access tiles/slats (Figure 7; Photographs 2 and 3). A bitumastic lining (e.g. 1F Roofers (BS747) Felt) will be laid over the modern breathable membrane (if this is used) within these cavities to prevent bats becoming entangled in the fibres of the breathable membrane. To prevent

bats moving onto the breathable membrane at the end of the cavities, a block of wood will be installed between the laths.

- Two Greenwood Small or Medium Hollow Bat Boxes (e.g. Photograph 4) or Woodstone Bat boxes (Photograph 5) will be installed in or on the south-facing side of Building C (Figure 5).

General mitigation requirements for bats include:

- A licensed ecologist will be appointed by the owner/developer before work commencing to oversee the mitigation measures.
- Contractors will be given a “toolbox talk” by the licensed ecologist at the commencement of works so that they are aware of the particular issues relating to bats at this site and their responsibilities in the event of a bat being found in the absence of a licensed ecologist.
- An inspection of the buildings will be carried out by the licensed ecologist immediately before work commencing to establish that the status of the bat roost has not changed and that work can proceed in accordance with the licence.
- As the identified bat roosts are of low conservation significance (Mitchell-Jones 2004) work will commence at any time once the EPS licence has been obtained (see above)).
- The roofs of the buildings will be removed carefully by hand under the supervision of a licensed bat worker.
- New lighting around the site will consider bats and will be low-level with UV filters and directional shrouding/shields to prevent unnecessary light spill above the top of the ground floor level. Floodlighting will be avoided unless it is on a short timer (<2 mins). Lighting near to bat access points and flight lines will be avoided.
- All bat roosts and access points will be checked by a licensed ecologist once they are in place.
- Timber treatments toxic to mammals will be avoided. Pre-treated timber will only use the CCA (copper, chrome, arsenic) treatment and chemicals used for timber treatment will be based on permethrin and cypermethrin compounds.
- Monitoring, consisting of an emergence survey and an inspection of the bat roosting features will be undertaken in Year 2 following completion of works.

6 References

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Figures



Figure 1. Location of the site (arrowed). 2006. Crown Copyright; Ordnance Survey. Scale 1: 25 000

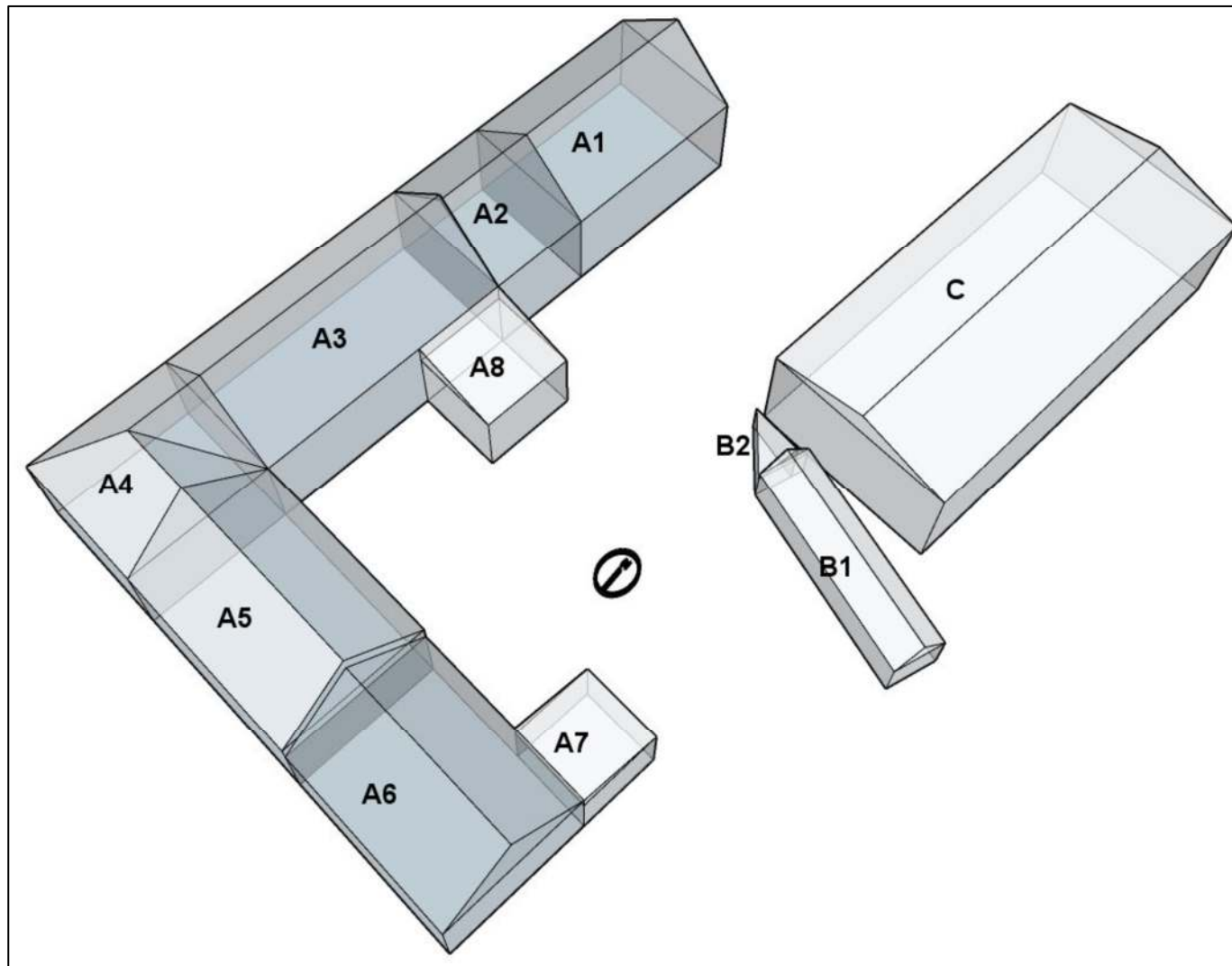


Figure 2. Plan of the buildings

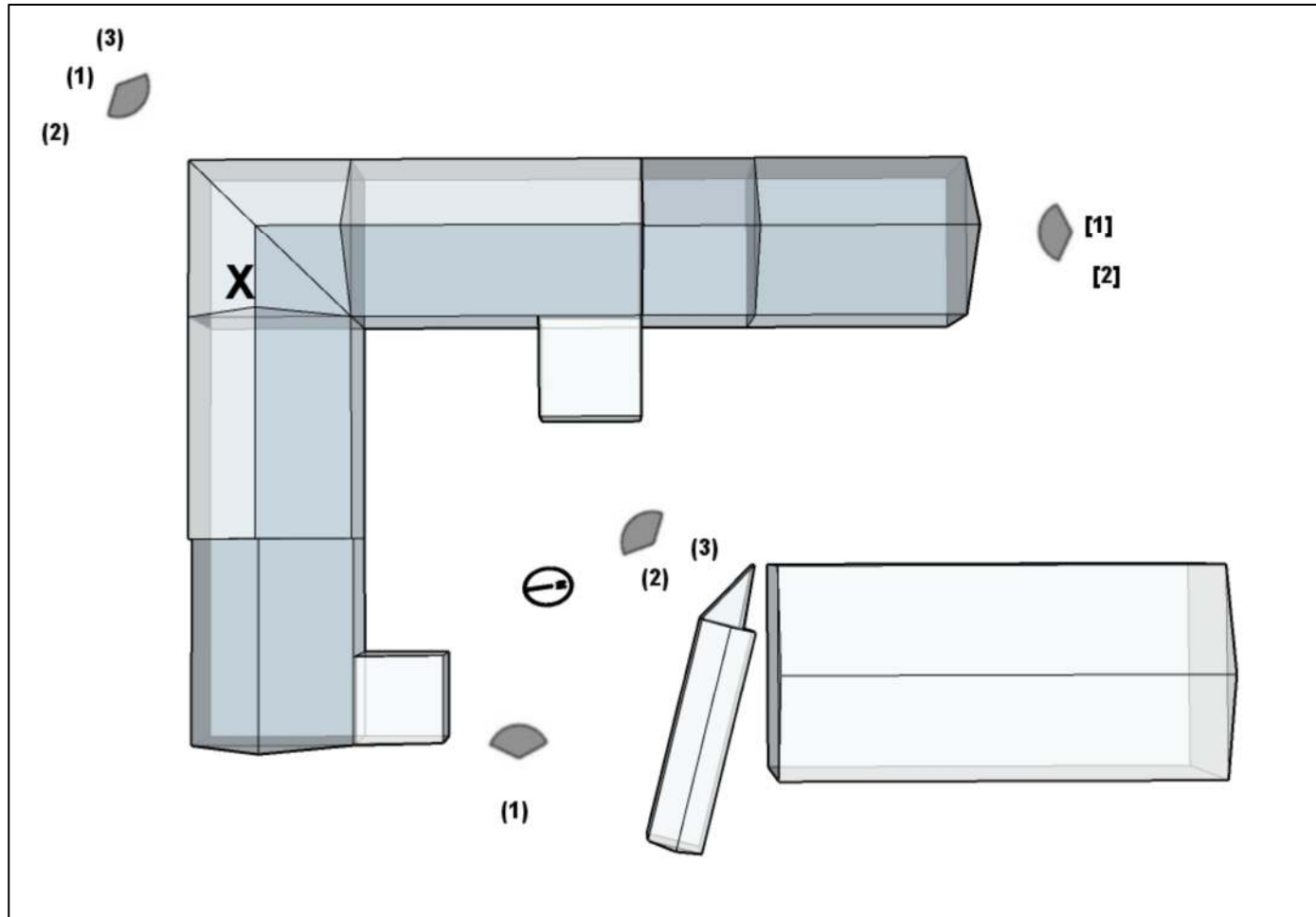


Figure 3. Location of surveyors during nocturnal surveys. Parenthesis indicate the location of surveyors; square brackets indicate the location of the infrared video camera and an X marks the location of static detectors. Surveys were carried out on (1) 5th May 2020, (2) 1st June 2020 and (3) 1st July 2020. Shaded sectors represent the direction in which the surveyors/camera were predominantly facing.

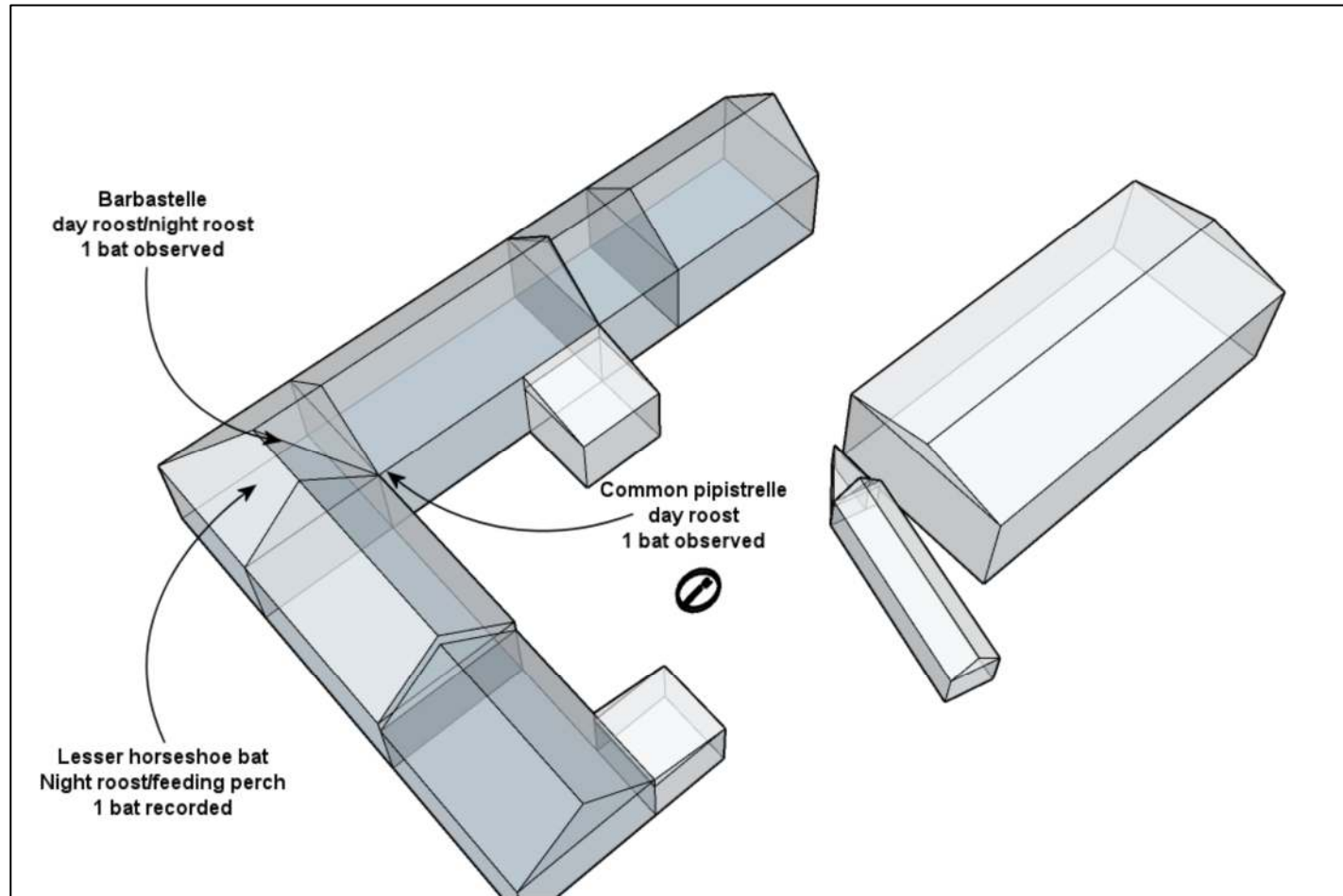


Figure 4. Plan of the buildings showing the location of the identified roost sites

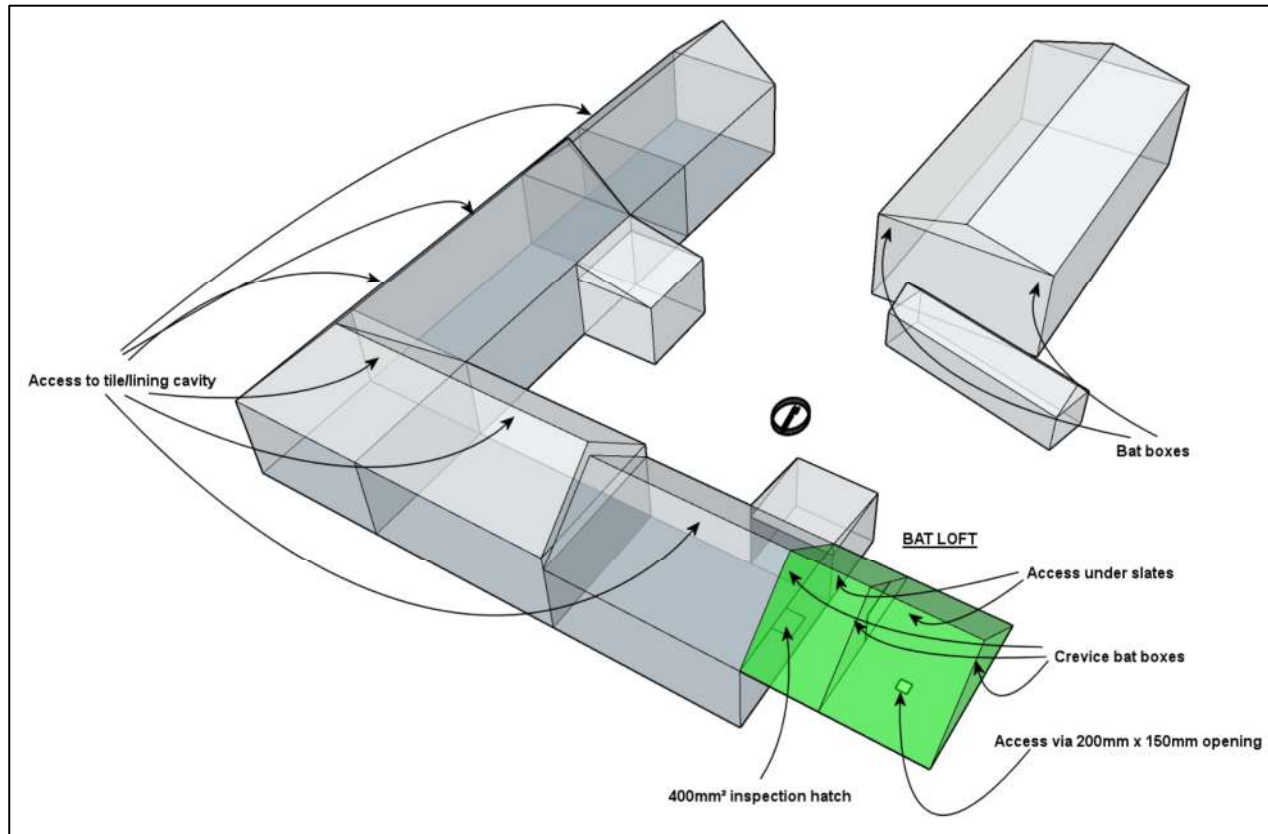


Figure 5. Rough proposed plan of the site showing the location of the proposed bat roosting features

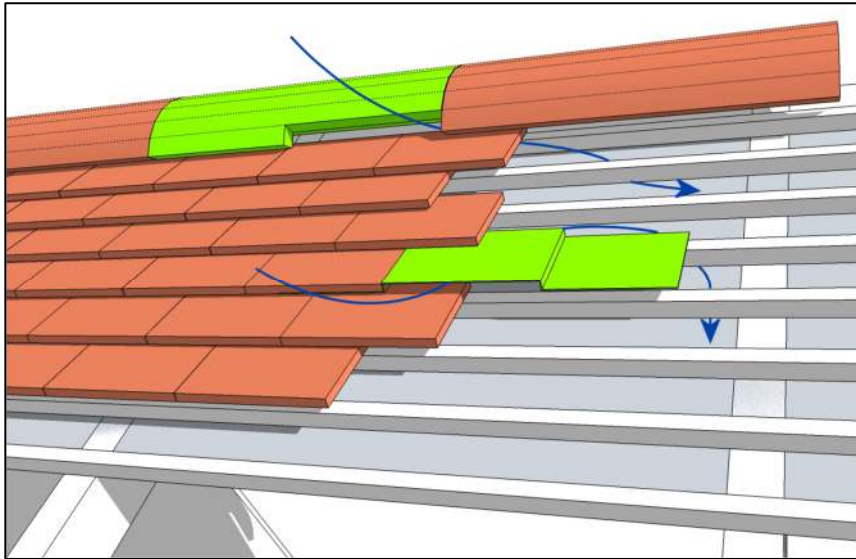


Figure 6. Access into the roof void via a lead saddle or a modified ridge tile.

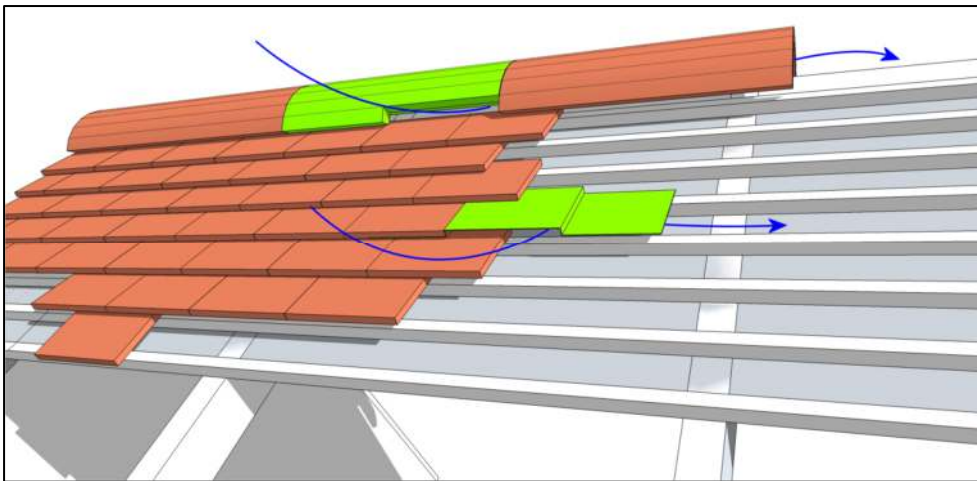


Figure 7. Access to the tile/lining cavity via a modified ridge tile and a lead saddle

Photographs



Photograph 1. Barbastelle image captured using an infrared video camera at 00:05 on 2nd July 2020



Photograph 2. Example of a bat access tile



Photograph 3. Example of a bat access slate



Photograph 4. Greenwoods EcoHabitats Medium Hollow Bat Box



Photograph 5. Woodstone bat box