PHASE 1 & 2 BAT SURVEY

THE KENNELS, BICESTER ROAD, STRATTON AUDLEY, BICESTER, OXFORDSHIRE, OX27 9BS

Date: 11th August 2019

Client: Bicester Hunt With Whaddon Chase

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Control Sheet

General Report Information	
Report title	Phase 1 & 2 Bat Survey Report
Client	Bicester Hunt With Whaddon Chase
Location	The Kennels, Bicester Road, Stratton Audley, Bicester, Oxfordshire, OX27 9BS
Lead ecologist	J. Russ
Report author	Dr. J. M. Russ

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Contents

1 Introduction

1.1 Background to activity/development

This report has been prepared by Dr Jon Russ at the request of Gareth Williams of William Green Architects, acting on behalf of their client, Bicester Hunt With Whaddon Chase. Planning consent is being sought from Cherwell District Council to convert the redundant stables located at The Kennels, Bicester Road, Stratton Audley, Bicester, Oxfordshire. The local planning authority has requested that a bat survey is carried out to inform the planning process.

A bat survey carried out by Ecoconsult Wildlife Consultancy in 2010 identified a single common pipistrelle emerging from under a tile on the main stable building (to be comnverted) plus five common pipistrelle bats emerging from the adjacent house (not included within the development plans). Ridgeway Ecology Ltd were commissioned to provide an updated survey.

1.2 Site description

The site proposed for development, The Kennels (GR: SP606258), is located at the western edge of the village of Stratton Audley in rural Oxfordshire (Figure 1). The site is primarily surrounded by open farmland comprising arable and pasture bordered by a network of hedgerows and treelines. Approximately 100m to the east of the site is a garden containing numerous mature trees but generally wooded areas are sparse within the surrounding area but includes Poodle Grose located 1.41 km east of the site and a number of small patches of woodland closer to the village. There are a number of ponds located within 1 km of the site, the closest being located 50m to the south. The woodland, ponds, hedgerows and treelines represent good foraging habitat for bats.

1.3 Proposed works

Planning consent is being sought from Cherwell District Council to convert the redundant stables located at The Kennels, Bicester Road, Stratton Audley, Bicester, Oxfordshire.

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 a 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

As the scale of the proposed development is small, a pre-survey data search of biological records was not carried out. However, see 3.1.2. A search using the MagicGov and Nature on the Map (Natural England) websites was performed to identify sites of nature conservation.

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 owner 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 in the tropics. He has extensive experience of 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: Good Practice Guidelines (Hundt 2012).

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(s)

On the 27th June 2019 the buildings were surveyed by Dr Jon Russ for potential roost sites and signs of bats. The survey utilised a ladder, a high-powered torch, binoculars and a video

endoscope (Ridgid Micro CA-300). The external inspection of the outbuilding involved looking for bat droppings on the ground, stuck to walls or roof slates and on windows and sills and recording suitable entry and exit points. The internal inspection focused on those areas which may be suitable for roosting bats, such as ridge slates, gable walls, joints and crevices in wood, crevices in walls as well as searching for bat droppings and feeding signs on the floors and other surfaces.

The following criteria were used to determine bat roosting potential of the buildings.

Table 1. Description of bat roosting potential categories

Roosting potential	Criteria
Good	Buildings that have many areas suitable for roosting with a large number of potential access points. These are normally in sheltered locations, subject to low variation In temperature. Buildings with good potential could be used for a whole range of roosts including maternity roosts.
Moderate	Buildings with a smaller number of areas suitable for roosting, but still supporting features that could be attractive to bats and potentially support maternity roosts.
Limited	Buildings with limited roosting opportunities. These may be in locations that are subject to wide temperature fluctuations and drafts. They could be used as occasional or transient roosts, but are unsuitable for maternity roosts. Buildings that would otherwise be moderate to good potential but have reduced value due to other factors such as exposed location, separation from nearby foraging habitat, or presence of strong streetlight.
Low	Buildings that have no obvious places for bats to roost, but could be used on a sporadic or occasional basis for feeding or solitary day roosting.
Negligible	Buildings which appear unsuitable for roosting bats due to clear lack of roosting spaces such as voids etc and/or absence of suitable access points. Such buildings in practice are rare.

2.3.3 Bat activity survey(s)

Observations of bat activity were made by two surveyors. One surveyor was equipped with a Pettersson D980 time-expansion bat detector connected to an iRiver H120 recorder and the other was equipped with a Pettersson D240x bat detector connected to an iRiver H120 recorder. Both detectors are capable of scanning in heterodyne mode and recording in time expansion mode. Two M500-384 detectors were also employed. Calls were analysed using the Avisoft-SASLAB v4.15 software package.

Table 2. Timings of nocturnal surveys

Survey Date	Survey Start Time	Survey End Time	Sunset/(Sunrise)
8th July 2019	21:15	23:00	21:27
16th July 2019	21:05	22:50	21:20
7th August 2019	04:00	05:36	(05:36)

Table 3. 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
8th July 2019	14	14	50	1	None
16th July 2019	16	17	20	0	None
7th August 2019	12	12	100	1	None

3 Results

3.1 Pre-survey data search

3.1.1 Designated sites

There are no designated sites within 2km of the site:

3.1.2 Protected species

A bat survey carried out by Ecoconsult Wildlife Consultancy in 2010 a single common pipistrelle emerging from under a tile on the main stable building (to be converted) plus five common pipistrelle bats emerging from the adjacent house.

3.2 Field Surveys

3.2.1 Habitat description

The focus of the survey is three largely redundant agricultural buildings. For detailed descriptions see below.

3.2.2 Bat roost(s)

Building 1 (Figure 2; Photographs 1-3)

Brick stable block comprising four separate bays. The gable roof is covered with clay tiles and is unlined.

Potential Bat Access Points:

The roof is quite well sealed with no obvious access points under or between tiles on the pitches (e.g. Photograph 4) except possibly under the ridge on the north-east side. There are gaps between the barge board and the south-east wall as well as openings in the wall itself (Photographs 2 and 5). There are also gaps under tiles on the edge of the south-east gable (e.g. Photograph 6). Between the rafter tails there are a few gaps between the wall and the soffit (e.g. Photograph 7). There are also open window apertures.

Bat Roosting Potential:

There are four separate bays which contains very little perching opportunities for bats (e.g. Photograph 8).

There is an enclosed roof void which contains exposed timbers suitable for perching (e.g. Photographs 9 and 10). Such roof voids could potentially be used by those species of bat that require a large flying area within the roost such as brown long-eared bats *Plecotus auritus*. However, the roof timbers are very dusty and covered with cobwebs indicating that bats have not been present for some time, if at all.

The lack of a roof lining reduces the potential for crevice-dwelling bats, such as those of the genus *Pipistrellus*.

Evidence of Bats:

No evidence of bats (actual sightings, droppings, feeding remains, scratch marks, associated staining) was recovered during the internal and external inspection of Building 1.

Building 2 (Photographs 11-13)

Brick agricultural building. The gable roof is covered with corrugated asbestos and is unlined.

Potential Bat Access Points:

Open window and door apertures.

Bat Roosting Potential:

There is an open roof void which contains exposed timbers suitable for perching (Photographs 14 and 15). However, the interior is very bright during the day which may deter some species from roosting within this area during this period.

The lack of a roof lining reduces the potential for crevice-dwelling bats, such as those of the genus *Pipistrellus*.

Evidence of Bats:

No evidence of bats (actual sightings, droppings, feeding remains, scratch marks, associated staining) was recovered during the internal and external inspection of Building 2.

Building 3 (Photographs 16 and 17)

Single-storey brick agricultural building. The gable roof is covered with slates and is unlined.

Potential Bat Access Points:

There are a few openings under the lead ridge covering (e.g. Photograph 18) as well as open window and door apertures, and gaps in and above the walls (e.g. Photographs 19 and 20).

Bat Roosting Potential:

Bats could potentially perch on the timber ceiling (Photograph 21).

There is a small enclosed roof void (Photographs 22-24) which may be suitable for some species of bats, such as whiskered bats. However, the interior is very dusty and covered with cobwebs indicating that bats have not been present for some time, if at all.

The lack of a roof lining reduces the potential for crevice-dwelling bats, such as those of the genus *Pipistrellus*.

Evidence of Bats:

No evidence of bats (actual sightings, droppings, feeding remains, scratch marks, associated staining) was recovered during the internal and external inspection of Building 3.

3.2.3 Bat activity survey(s)

8th July 2019 – Dusk Survey

Surveyors were positioned in the courtyard to the west of Building 1 and to the east of Building 1. One of the surveyors occasionally entering the buildings. Common pipistrelles, noctules and brown long-eared bats were recorded flying in the vicinity of the buildings but no bats were observed emerging (Tables 4 and 5).

Table 4. Summary of bat activity within the site boundary – surveyor positioned to the west of Building 1 with D980 detector.

Time	Activity	Species
22:01	One individual observed foraging from W to E past SE gable of semi-detached stable block	*Pipistrellus pipistrellus*
22:03	One individual observed foraging from W to E past SE gable of semi-detached stable block then S to Dutch barn	*Pipistrellus pipistrellus*

22:05-22:10	One individual observed foraging from W to E past S of shed to SE then under Dutch barn circling repeatedly	*Pipistrellus pipistrellus*
22:13	One individual observed passing overhead from E to W	*Nyctalus noctula*
22:15	One individual observed flying to E of stable building to W	*Plecotus auritus*

Table 5. Summary of bat activity within the site boundary – surveyor positioned at the east of Building 1 with D240x detector.

Time	Activity	Species
22:01	One individual observed foraging from W to E to S of surveyor	*Plecotus auritus*
22:04	One individual observed foraging from W to E to S of surveyor	*Plecotus auritus*
22:05-22:08	One individual observed foraging from W to E to S of surveyor then through gap in buildings to SE and through Dutch barn continuously	*Plecotus auritus*
22:10	One individual observed foraging from W to E	*Plecotus auritus*
22:13	One individual heard passing overhead	*Nyctalus noctula*

16th July 2019 – Dusk Survey

Surveyors were positioned in the courtyard to the west of Building 1 and to the east of Building 1. One of the surveyors occasionally entering the buildings. Common pipistrelles and brown long-eared bats were recorded flying in the vicinity of the buildings and a common pipistrelle was observed emerging from Building 1 and a brown long-eared bats was observed flying and perching within Building 2 (Tables 6 and 7).

Table 6. Summary of bat activity within the site boundary – surveyor positioned to the west of Building 1 with D980 detector.

Time	Activity	Species
21:47	One individual observed emerging from gap under tiles approximately 30 cm from W end of fascia on SE gable of semi-detached stable block	*Pipistrellus pipistrellus*
21:48	One individual heard foraging	*Pipistrellus pipistrellus*
21:54	One individual observed foraging over courtyard to SW	*Pipistrellus pipistrellus*
21:55	One individual observed flying within asbestos roofed shed to SE and landing in between two angled ridge beams at SW end of shed when surveyor entered	*Plecotus auritus*
21:59	One individual observed foraging over courtyard to SW	*Pipistrellus pipistrellus*
22:07	One individual observed foraging over courtyard to SW	*Pipistrellus pipistrellus*
22:07	One individual observed exiting asbestos shed via door	*Plecotus auritus*
22:09	One individual heard foraging	*Plecotus auritus*
22:12	One individual heard foraging	*Pipistrellus pipistrellus*
22:18-22:31	Intermittent foraging	*Pipistrellus pipistrellus*

Table 7. Summary of bat activity within the site boundary – surveyor positioned at the east of Building 1 with D240x detector.

Time	Activity	Species
22:01	One individual observed foraging from E to W	*Pipistrellus pipistrellus*
22:04	One individual observed foraging from E to W	*Pipistrellus pipistrellus*
22:05-22:08	One individual observed foraging from E to W then through gap in buildings to N continuously	*Pipistrellus pipistrellus*
22:10	One individual observed foraging from E to W	*Pipistrellus pipistrellus*
22:13	One individual heard passing overhead	*Pipistrellus pipistrellus*

7th August 2019 – Dawn Survey

Surveyors were positioned in the courtyard to the west of Building 1 and to the east of Building 1. One of the surveyors occasionally entering the buildings. Common pipistrelles and brown long-eared bats were recorded flying in the vicinity of the buildings but no bats were observed entering roosts (Tables 8 and 9).

Table 8. Summary of bat activity within the site boundary – surveyor positioned to the west of Building 1 with D980 detector.

Time	Activity	Species
04:32	One individual heard foraging	*Plecotus auritus*
04:41	One individual heard foraging	*Pipistrellus pipistrellus*
04:46	One individual observed foraging over courtyard area to S	*Plecotus auritus*
04:48	One individual heard foraging	*Pipistrellus pipistrellus*
04:56	One individual heard foraging	*Plecotus auritus*
04:58	One individual observed foraging over courtyard area to S	*Pipistrellus pipistrellus*
05:03	One individual observed foraging over courtyard area to S	*Pipistrellus pipistrellus*

Table 9. Summary of bat activity within the site boundary – surveyor positioned at the east of Building 1 with D240x detector.

Time	Activity	Species
04:33	One individual heard foraging	*Plecotus auritus*
04:41	One individual observed flying to S	*Pipistrellus pipistrellus*
04:48	One individual observed flying from W to E to S	*Pipistrellus pipistrellus*
04:58	One individual observed foraging in courtyard	*Pipistrellus pipistrellus*
05:03	One individual observed foraging over courtyard to W	*Pipistrellus pipistrellus*

3.2.4 Interpretation and evaluation of survey results

The survey evidence demonstrates that a single common pipistrelle is roosting under the slates on Building 1 (in accordance with the 2010 survey) and a single brown long-eared bat is roosting within the interior of Building 2 (Figure 2). The roost are probably day roosts. Due to the general lack of droppings the brown long-eared bat roost is probably used infrequently. There was no evidence of bats within Building 3.

Site status assessment: In the absence of evidence, Building 1 is considered to be of moderate bat roosting potential (see Table 1) and Building 2 and 3 are considered to be of limited bat roosting potential.

4 Assessment

4.1 Constraints

It was not possible to inspect the cavities between the tiles/slates, lining and laths on Buildings 1 and 3.

4.2 Potential impacts of the development

Planning consent is being sought from Cherwell District Council to convert the redundant stables. This will result in the loss of the identified common pipistrelle day roost in Building 1 and the brown long-eared bat day roost in Building 2.

5 Recommendations and mitigation

The survey evidence demonstrates that a common pipistrelle day roost (1 bat obs.) is located under tiles on Building 1 at The Kennels, Bicester Road, Stratton Audley, and a brown long-eared bat day roost (1 bat obs.) is located within the interior of Building 2 (see 3.2.2, 3.2.3 and 3.2.4; Figure 2). The common pipistrelle roost was present in 2010.

In the absence of evidence, Building 1 is considered to be of moderate bat roosting potential (see Table 1) and Building 2 and 3 are considered to be of limited bat roosting potential.

Planning consent is being sought from Cherwell District Council to convert the redundant stables. This will result in the loss of the identified common pipistrelle day roost in Building 1 and the brown long-eared bat day roost in Building 2. As all bat roosts (places that bats use for shelter or protection) are protected under current legislation (whether bats are present or not) **the site must be registered under Natural England's Bat Low Impact Class Licence (BLICL) scheme to permit the destruction of the existing roost sites and access point(s) within these buildings and to disturb any bats present**. No such work can begin until the site has been registered. The application must be completed by a suitably qualified ecologist. Natural England can take up to 10 working days to process an application which can only be submitted once planning consent has been granted.

Generally, Natural England do not expect compensation for roosts lost at sites registered under BLICL (see above). However, under the provisions of the NERC Act and NPPF local planning authorities have a wider remit to maintain, enhance and restore biodiversity over and above just mitigation for the loss of a roost site. The following agreed measures are site-specific taking into account the roost type and the status of the identified species at the local, regional and national level and will be implemented in order to reduce the impacts of the proposed work on bats and their roost sites.

<u>Common pipistrelle (*Pipistrellus pipistrellus*) – day roost – 1 bat observed</u>

- A bat box will be installed near the apex of the south-east facing gable wall of Building 1 and at the apex of the south-east elevation of Building 3 (Photograph 25). The boxes will be located well away from windows and other light sources.
- Access to a minimum of six crevices (in total) will be created between the tiles/slates, laths and lining on south-west and south-east facing roof pitches. The cavities will be approximately 1.5m in length and located on or up to 0.5m under the ridge. Access to the cavities will be via a lead saddle or modified ridge tile (Figure 3; Photograph 26). A small section of traditional bitumastic roof lining will be placed on top of the modern breathable membrane (if used) to prevent bats becoming entangled in the modern lining. To prevent bats moving onto the breathable membrane a block of wood will be installed at each end of the cavity between the laths.

<u>Brown long-eared bat (Plecotus auritus) – day roost – 1 bat observed</u>

- For a rarely used brown-long-eared at day roost used by a single individual, the proposed bat boxes and access to the cavities between the tiles/slates, battens and lignin are considered to be an acceptable alternative to the roost site lost (see above).

General mitigation requirements for bats include:

- A licensed ecologist will be appointed by the contractor prior to 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 building will be carried out by the licensed ecologist immediately prior to 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 roost is of low conservation significance (Mitchell-Jones 2004) work may commence at any time once the site has been registered under the BLICL scheme (see above). Note that the application will be submitted at least three weeks in advance of the intended start date but not more than 12 weeks in advance.
- Prior to work commencing a Schwegler 1F bat box will be erected on a tree to the west of the site to temporarily house any bats discovered during works.
- The roof and fascias will be removed carefully by hand under the supervision of a licensed bat worker.
- New lighting around the site will take bats into consideration and will be low-level with 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.

6 References

Altringham, J. (2003). British Bats. HarperCollins Publishers.

Barn Owl Trust (2010) *Survey techniques*. Leaflet no. 8. The Barn Owl Trust, Ashburton, Devon.

Barratt, E. M., Deaville, R., Burland, T. M., Bruford, M. W., Jones, G., Racey, P.A. & Wayne, R.K. 1997. DNA answers the call of pipistrelle bat species. Nature 387: 138-139.

Blake, D., Hutson, A. M., Racey, P. A., Rydell, J. & Speakman, J. R., 1994 Use of lamplit roads by foraging bats in Southern England. J. Zool. Lond. 234: 453 - 462.

Battersby, J. (2005) UK Mammals: Species Status and Population Trends. JNCC/Tracking Mammals Partnership 2005.

Elliot, P. (2005). Warwickshire, Coventry & Solihull Local Biodiversity Action Plan: Bats. Warwickshire County Council.

English Nature (2002) *Barn owls on site: A guide for developers and planners 2nd Edition*. English Nature, Peterborough.

Entwistle, A.C., Harris, S., Hutson, A., Racey, P.A., Walsh, A., Gibson, S.D., Hepburn, I. & Johnston, J. (2001). Habitat management for bats. A guide for land managers, land owners and their advisors. Joint Nature Conservation Committee, UK.

Harrison, B. & Burton, P. 1985. Field Guide to Nests, Eggs and Nestlings of British and European Birds (Collins Field Guide).

Hundt L (2012) Bat Surveys: Good Practice Guidelines, 2nd edition, Bat Conservation Trust

IEEM. 2005. Guidelines for Ecological Impact Assessment. Consultation Draft. Institute of Ecology & Environmental Management, UK.

Joint Nature Conservation Committee (2007). UK Biodiversity Action Plan. www.ukbap.org.uk

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

Mitchell-Jones, A.J. & McLeish, A.P. 2004. The Bat Workers Manual (3rd ed.). JNCC, Peterborough.

Office of the Deputy Prime Minster, under licence from the Controller of Her Majesty's Stationery Office (2005). Planning Policy Statement 9: Biological and Geological Conservation.

Russ, J. M. (1999). The Bats of Britain and Ireland: Echolocation calls, sound analysis and species identification. Alana Books, Powys, UK.

Rydell, J. 1992 Exploitation of insects around street lamps by bats in Sweden. Functional Ecol. 6: 744 - 750.

Simpson, P. 2007. New species protection legislation: opportunities and risks for consultant ecologists. In: In Practice. Bulletin of the Institute of Ecology and Environmental Management. 58, 24-27.

Simpson, P. 2009. Ecology legal update. In: In Practice. Bulletin of the Institute of Ecology and Environmental Management. 66, 36-38.

Swift, S.M. 1998. Long-eared bats. Poyser Natural History, London.

Figures

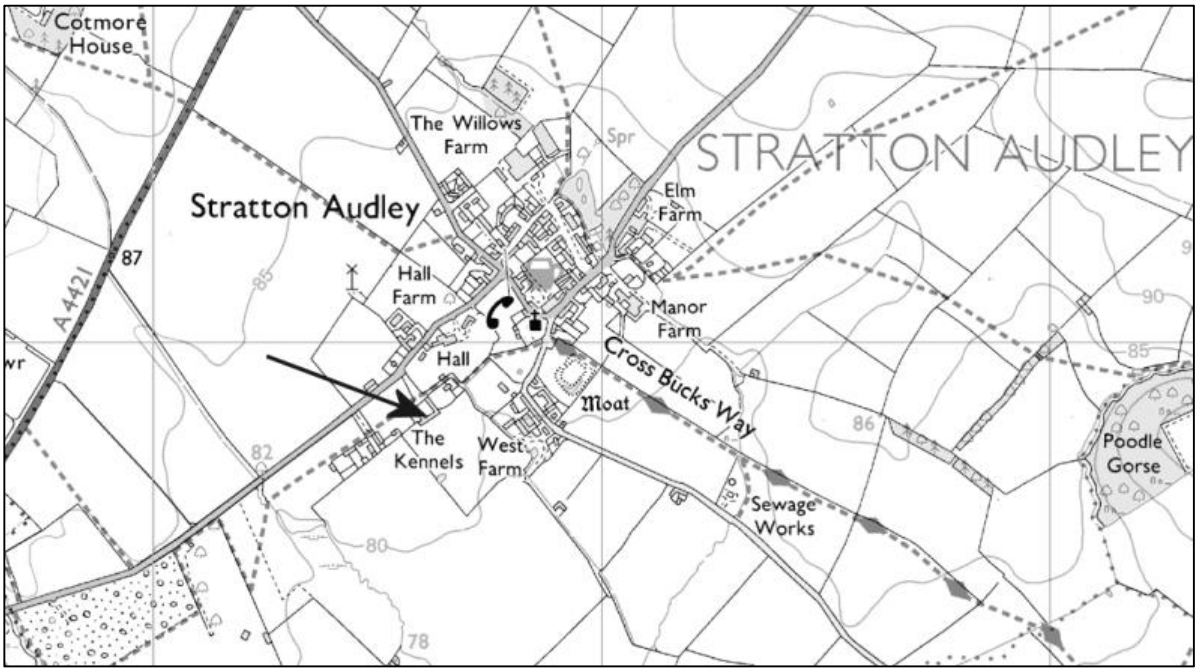

Figure 1. Location of the site (arrowed). 2006. Crown Copyright; Ordnance Survey. Scale 1: 50 000

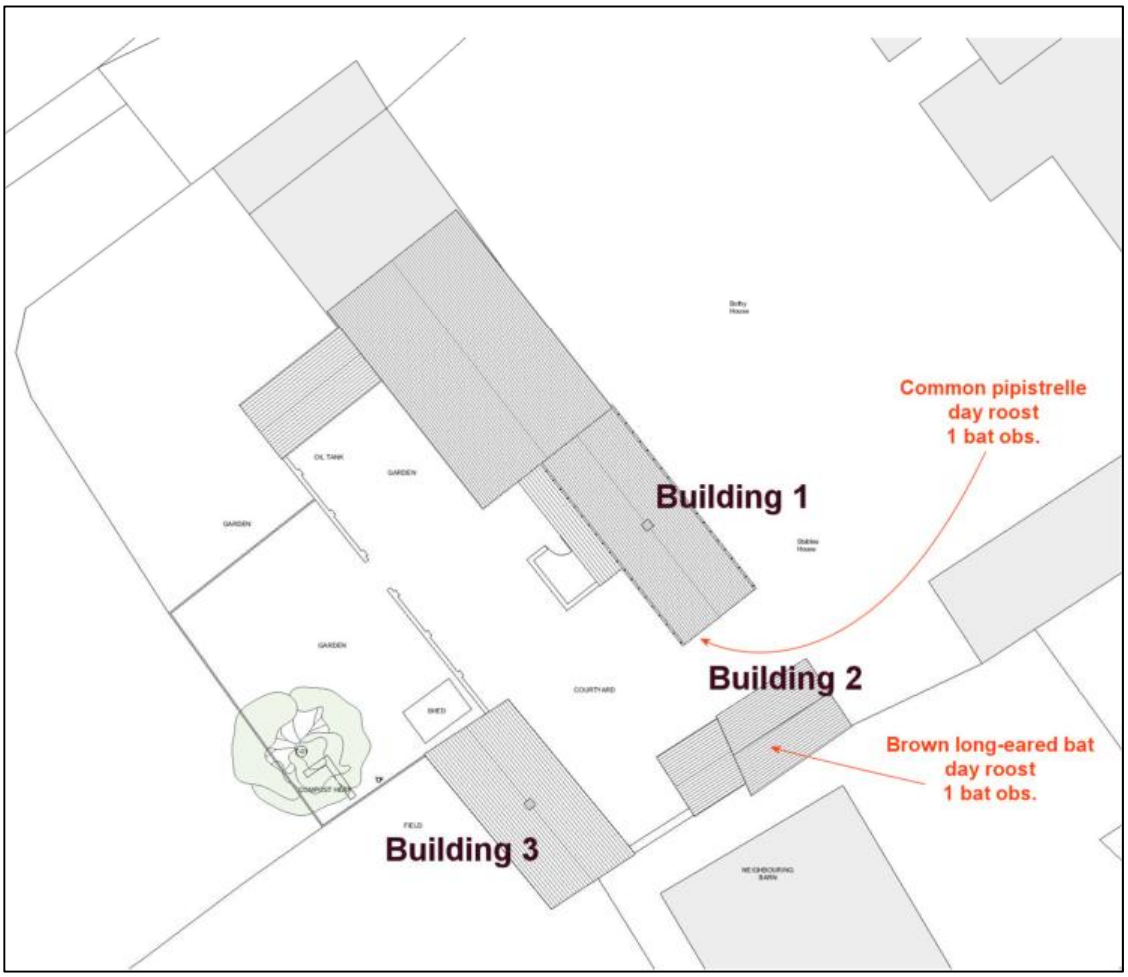

Figure 2. Plan of the site showing the location of the surveyed buildings and the identified bat roosts (from William Green Architects Drawing No: 19246 1_102)

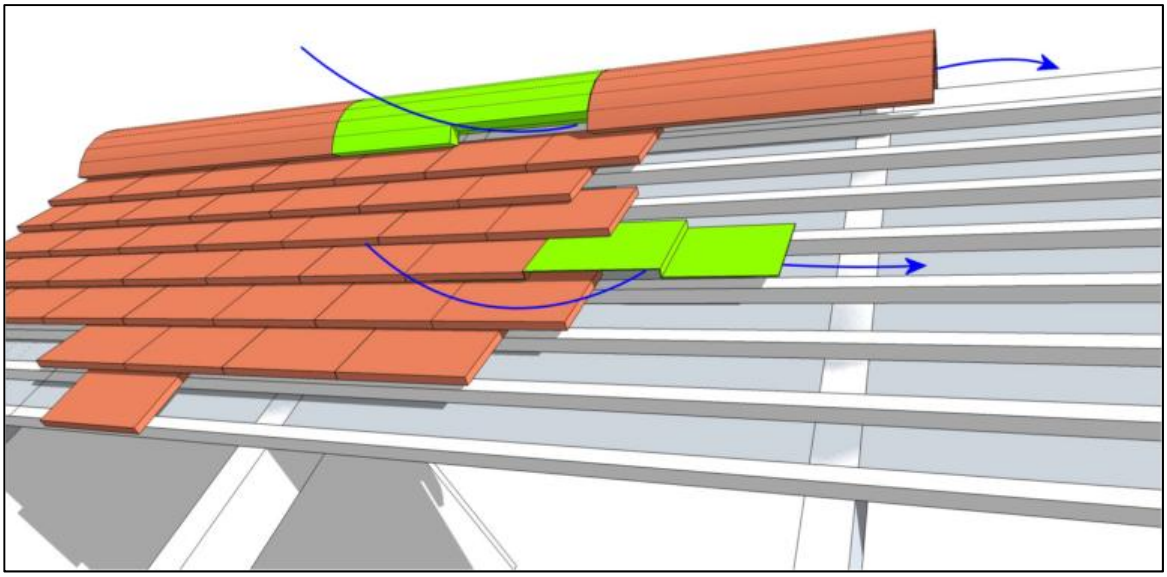

Figure 3. Access to the tile/lining cavity via a modified ridge tile and a lead saddle

Photographs

Photograph 1. The north -east elevation of Building 1

Photograph 2. The south-east elevation of Building 1

Photograph 3. The south-west elevation of Building 1

Photograph 4. Example of the tiles on the roof of Building 1

Photograph 5. Openings under the bargeboard and in the south-east gable wall of Building 1

Photograph 6. Openings under tiles along the edge of the south-east gable wall of Building 1

Photograph 7. Example of an opening between the soffit and the north-east wall of Building 1

Photograph 8. Example of one of the bays in Building 1

Photograph 9. Part of the enclosed roof void within Building 1

Photograph 10. Example of the underside of the roof in Building 1

Photograph 11. The north-west and south-west elevations of Building 1

Photograph 12. The south-east elevation of Building 2

Photograph 13. The north-east elevation of Building 2

Photograph 14. The interior of the main part of Building 2

Photograph 15. The interior of south-western part of Building 2

Photograph 16. The north-east elevation of Building 3

Photograph 17. The south-west and south-east elevations of Building 3

Photograph 18. Example of an opening under the lad flashing on the ridge of Building 3

Photograph 19. Example of gaps between the roof and the south-east gable wall of Building 3

Photograph 20. Example of a gap at the corner of the wall of Building 3

Photograph 21. Example of a bay within Building 3

Photograph 22. The enclosed roof void within Building 3 (view to north-west)

Photograph 23. The enclosed roof void within Building 3 (view to south-east)

Photograph 24. The underside of the roof within Building 3

	
Photograph 25. Woodstone Bat Box	Photograph 26. Example of bat access tile