



Bat Assessment
Preliminary Roost Assessment
&
Roost Characterisation Surveys

of

Land at The Beeches
Steeple Ashton
Oxfordshire

for

Mr Adrian Shooter

(24th June 2019)

2019-01(03)

PROTECTED SPECIES

This report contains sensitive information relating to protected species.

Survey dates: 15th February 2019, 13th May 2019, 31st May 2019

Report Version	Date	Author:	Quality check by:	Approved by:
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This report has been prepared in accordance with the CIEEM Guidelines for Ecological Report Writing Second Edition (2017) and is compliant with the CIEEM Code of Professional Conduct.

Summary

- An initial walkover survey for bats was carried out at The Beeches, Steeple Aston, in Oxfordshire by a suitably qualified ecologist on 15th February 2019. The survey was undertaken in order to inform a future planning application for a small residential development.
- The proposed development included the demolition of all of the existing outbuildings (buildings 1-7), whilst the existing dwelling was to remain unaffected by the proposed works and, consequently, was scoped out of the survey. Proposals are for the erection of up to 8 dwellings in the domestic curtilage of The Beeches.
- Foraging opportunities for bats nearby were considered good and a lack of bat records in the locality suggested an under-recording issue rather than a likely absence of bats.
- A preliminary roost assessment of buildings 1-7 revealed no evidence of bats and negligible bat roosting suitability in buildings 1, 2, 3, 4, 6 and 7. Building 5 was revealed to have moderate bat roosting potential for crevice-dwelling bats. As this building was to be demolished, it was considered necessary to establish the presence or otherwise of roosting bats in building 5 and, if present, the species, numbers, access points and roost type such that any subsequent bat mitigation could be adequately described and achieved within the scheme. Consequently, two nocturnal bat surveys – a dusk emergence survey and a dawn re-entry survey – of building 5 were recommended to be undertaken during May-August 2019, when bats are at their most active.
- Two bat activity surveys were undertaken in May 2019. These surveys comprised a dusk emergence survey on 13th May and a dawn re-entry survey on 31st May. No bats were identified emerging from or re-entering building 5, although bats were observed foraging around the building and within the surrounding trees. Species recorded included frequent common pipistrelle (*Pipistrellus pipistrellus*), occasional myotis (*Myotis* sp.) and noctule (*Nyctalus noctula*) bats, and possible brown long-eared (*Plecotus auritus*) bats.
- As no bat roosts, or evidence of bats utilising the building, were identified at the time of the survey, it is considered highly unlikely that the demolition works will result in disturbance, damage or destruction to a bat roost. No further survey work or licensing measures are required, provided the demolition is undertaken prior to June 2021. Should works be delayed past June 2021 it is advised that an updated preliminary roost assessment of the building is undertaken, plus any updated bat activity surveys subsequently deemed necessary.
- Precautionary mitigation in the form of a sensitive working methodology for the demolition, is set out within the report. While not absolutely necessary to avoid works during the summer, timing of works is *preferred* between September and April of any given year to minimise the likelihood of encountering bats.
- While no evidence of nesting birds was noted on any of the buildings at the time of survey, it is also recommended that if works are to be carried out in nesting bird season (between March and September inclusive), care is taken and any works that may disturb nesting birds should be delayed until such time as the chicks have naturally fledged.
- Recommendations for enhancements of the Site, through the installation of bat and bird boxes within new buildings or on retained trees, are also made.

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1 Introduction

1.1 Instruction

Ecolocation were commissioned by Mr Adrian Shooter to undertake a preliminary roost assessment of all outbuildings within an area of land at The Beeches, Steeple Ashton in Oxfordshire (hereafter referred to as the 'Site'), which was understood would be subject to a future planning application for the erection of up to 8 dwellings in the domestic curtilage of The Beeches.

1.1.1 Site Location

The Site (grid reference SP 47649 25230) was located within a largely rural setting, on the southern outskirts of the small village of Steeple Ashton, approximately 9km west of Bicester. The survey boundary is shown in Figure 1 below and encompasses buildings 1-7. This red line differs slightly from that within the Ecological Impact Assessment produced for the Site by Ecolocation in 2019. The main residential property at the Beeches is not to be impacted by development works and was therefore scoped out of this survey.



Figure 1: Survey boundary (including building numbers)

1.1.2 Proposed Plans

The Scheme 3 - Indicative Site Plan drawing number 101 Rev C, produced by Malcom Payne Group and dated June 2019, was used in the production of this report and is included in Appendix 1 for reference. The proposals are for the erection of up to 8 dwellings in the domestic curtilage of The Beeches; with the associated removal of a number of trees and other vegetation to facilitate a wider access route.

1.2 Survey Purpose

The purpose of the survey and report was to:

- Identify the suitability of the structures being impacted by the proposed works to support roosting bats;
- Identify likely presence/absence of bat roosts at the Site;
- Determine the need for any further bat surveys to inform a mitigation scheme or a bat mitigation licence;

- If bat roosts are present, determine species, access and egress points, roost type and size;
- Assess the impact of the proposed works on bats;
- If bat roosts are present, provide details of a bat mitigation strategy to maintain the favourable conservation status of the bat species in question; and
- Determine the need for a bat mitigation licence from Natural England.

1.3 Legislation & Planning Policies

A number of UK and European legislation and policies deal with the conservation of biodiversity. This section briefly outlines the legal and policy protection afforded to bats and their habitats.

Bats and their roost sites are protected under UK and European legislation including the Wildlife and Countryside Act 1981 (as amended), Countryside Rights of Way Act 2000, the Conservation of Habitats and Species Regulations 2010 and the Habitats Directive. The legislation makes it an offence for any person to:

- Deliberately capture, injure or kill a bat;
- Intentionally or recklessly disturb bats, where that disturbance may affect the ability of those bats to survive, breed, rear or nurture their young, or is likely to significantly affect the local distribution or abundance of any bat species, whether in a roost or not;
- Damage or destroy a place of shelter (roost) of a bat, be that a resting or breeding place;
- Possess a bat, whole or in part, alive or dead;
- Intentionally or recklessly obstruct access to a roost; and
- Sell or offer for sale or exchange whole or parts of bats, alive or dead.

All species of birds are protected from disturbance under the Wildlife and Countryside Act 1981 (as amended) from the time when they begin nest construction until all of the young have naturally fledged. Barn owls benefit from additional protection under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), making it an offence to capture or kill barn owls at all times or disturb them whilst nesting.

The ODPM Circular 06/05 makes the presence of a protected species a material consideration within the planning process. It states that it is essential for the presence of protected species and the extent they may be affected by proposed development be established through appropriate surveys before the planning permission is granted and encourages the use of planning conditions to secure the long-term protection of the species.

The National Planning Policy Framework (NPPF) section 15 outlines how applications need to conserve and enhance the natural environment. Paragraphs 174 to 177 state that sites with biodiversity value should be protected and enhanced, minimising impacts on biodiversity and establishing ecological connectivity. Furthermore, the protection of priority sites and species through developments is outlined and states where significant harm is unavoidable through alternatives or mitigation, planning permission should be refused. Finally, this section concludes that developments with aims to conserve or enhance biodiversity should be supported and any improvement around developments should be encouraged to achieve net gains for biodiversity.

Cherwell's Local Plan 2011-2031 Part One Adopted 2015 contains policy ESD 10 relating to environmental assets. This policy states that when considering proposals for development, a net gain in biodiversity will be sought by protecting, managing, enhancing and extending existing resources, and by creating new ones. It leads on to say that "development proposals will be expected to incorporate features to encourage biodiversity ... and where possible enhance existing features of nature conservation value within the site; in addition to identifying existing ecological networks and maintaining these to avoid habitat fragmentation".

2 Methodology

2.1 Desk Study

Prior to the site visit a desk-top data gathering exercise was undertaken. The MAGIC website was accessed to search for statutory designated sites within a 1km radius of the Site. The Thames Valley Environmental Records Centre (TVERC) was contacted for information on bat species records within a 1km radius of the Site.

2.2 Preliminary Roost Assessment

The Site was visited by suitably experienced and licensed surveyor Anna Scott-Swift (Technical Director, MCIEEM, level 2 bat survey licence: 2015-12952-CLS-CLS) accompanied by Jeff Grant (Senior Ecologist, ACIEEM, level 1 bat survey licence: 2017-25813-CLS-CLS) on Friday 15th February 2019. The survey took approximately 2.5 hours and weather conditions at the time of survey were recorded.

The daytime inspection was carried out in accordance with Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd edition (BCT, 2016). The survey comprised two parts: an evaluation of suitability for roosting and a search for evidence of bats. The inspection was aided by a one million candlepower torch. Extendable ladders, binoculars and a 'Seesnake' rigid endoscope were available for detailed inspections of accessible areas.

Bat evidence:

The interior and exterior of each surveyed building were systematically searched for evidence of bats including:

- Live or dead bats;
- Droppings;
- Staining from bat urine;
- Feeding remains, such as moth wings; and
- An absence of cobwebs on suitable flight lines or access points.

Evaluation of roosting suitability:

This comprised a detailed external and internal assessment of the surveyed buildings to determine the suitability for roosting bats and the likely species, type of roost and numbers of bats the building could support. A number of factors were considered including:

- Surrounding habitats – connectivity for flight lines to the building and areas for foraging;
- Internal light levels and temperature;
- Weather-proof properties;
- Building construction;
- Potential access into the building (e.g. into a roof void, cavity in brickwork, between tiles and lining); and
- Roosting features in roof void (e.g. roof timbers, ridge, wall plate).

Following a systematic survey of the buildings and consideration of possible factors, each building was assessed as having negligible, low, moderate or high suitability for roosting bats, in accordance with the BCT guidelines.

2.3 Nocturnal Bat Activity Surveys

Two nocturnal bat activity surveys were carried out on building 5 in accordance with Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd edition (BCT, 2016). These comprised one dusk emergence and one dawn re-entry survey. Surveyors were positioned to give full coverage of the building and potential access points to observe bat activity in the area and identify any bats emerging from or re-entering a roost. The timings of the survey and weather conditions at the start and end of the survey were recorded on each occasion. Dusk surveys were started 15mins before sunset and continued until 1.5-2hrs after sunset. Dawn surveys were started 1.5-2hours before sunrise and continued until 15mins after sunrise.

2.3.1 Dusk Emergence Survey

The dusk emergence survey of building 5 was undertaken on 13th May 2019 by the following surveyors, led by Jeff Grant:

Table 1: Survey personnel and qualifications

Map ID	Personnel	Relevant licences held	Relevant survey experience (years)	Equipment used
JG	Jeff Grant ACIEEM Senior Ecologist	Bat (level 1)	7	Pettersson 240x
AR	Alex Robinson Acting Ecologist		3	Pettersson D230
GV	Georgie Venman Field Surveyor		2	Magenta Bat5

Locations of surveyors are shown with the results of the survey in Figure 3.

A camera was used to focus on the northern elevation immediately adjacent to the Site boundary hedgerow (see location in Figure 3). At 20:50hrs this was set to record in night vision mode for 90 minutes.

A static bat detector (SM4) was placed at the north western corner of the building and set to record in full spectrum mode for the full length of the survey. Sound recordings were analysed using BatSound software. The data was gathered to confirm and consolidate the corresponding bat activity results of the camera and surveyors, as well as detecting any additional bat species in the vicinity.

2.3.2 Dawn Re-entry Survey

The pre-dawn re-entry survey of building 5 was undertaken on 31st May 2019 by the following surveyors, led by Jeff Grant:

Table 2: Survey personnel and qualifications

Map ID	Personnel	Relevant licences held	Relevant survey experience (years)	Equipment used
JG	Jeff Grant ACIEEM Senior Ecologist	Bat (level 1)	7	Pettersson 240x
CG	Charlotte Green Seasonal Field Surveyor		1	Magenta Bat5
GV	Georgie Venman Field Surveyor		2	Magenta Bat5

Locations of surveyors are shown with the results of the survey in Figure 4.

A camera was used to focus on the eastern elevation (see location in Figure 4). At 02:55hrs this was set to record in night vision mode for 90 minutes.

A static bat detector (SM4) was placed at the north western corner of the building and set to record in full spectrum mode for the full length of the survey. Sound recordings were analysed using BatSound software. The data was gathered to confirm and consolidate the corresponding bat activity results of the camera and surveyors, as well as detecting any additional bat species in the vicinity.

2.4 Limitations

There were no significant limitations at the time of survey.

3 Results & Evaluation

3.1 Desk Study

3.1.1 Habitat Connectivity

The habitat connectivity of the Site was considered to be good for bats, as summarised in Figure 2 (below). The Site was situated within a rural setting, largely surrounded by fields bounded by hedgerows and situated within close proximity to parkland, woodland and the River Cherwell.

The hedgerows on Site were found to connect to mature, well-structured hedgerows at a number of points, providing commuting corridors for bats. However, it was noted that where pasture and arable fields extended to the west of the Site the hedgerows appeared to lack further connections, reducing the connectivity in this direction.

Areas of open parkland were noted throughout the locality situated to the north-east and south-east of Site. Parkland with lightly-grazed or managed pasture and scattered trees offered opportunities for foraging and roosting bats.

A number of areas of deciduous woodland were present within the vicinity of the Site, the largest of which was located some 300m to the south of the Site, known as Dean Plantation. Deciduous woodland is a particularly valuable habitat for bats, often supporting a diverse and complex understorey, providing foraging and roosting habitat for a good diversity of bat species. It is likely that this is an important habitat for bats within the locality. The presence of additional woodland pockets to the north of the Site and woodland within the Site boundary would allow for dispersal of local bat populations via the Site.

The River Cherwell ran some 200m to the south of the Site with associated floodplain meadow and tributaries and would provide a foraging and commuting route through the landscape for many bat species. These waterbodies are shown in blue in Figure 2 below.

Finally, the small village of Steeple Ashton was situated approximately 100m to the north of the Site and represented the only built-up habitat within the vicinity of the Site. The village was only considered to represent a partial barrier to dispersal (more so to light-averse bats such as *Plecotus* and *Myotis* species), due to its green and open nature. The village properties are likely to offer a number of potential roosting opportunities for bats.

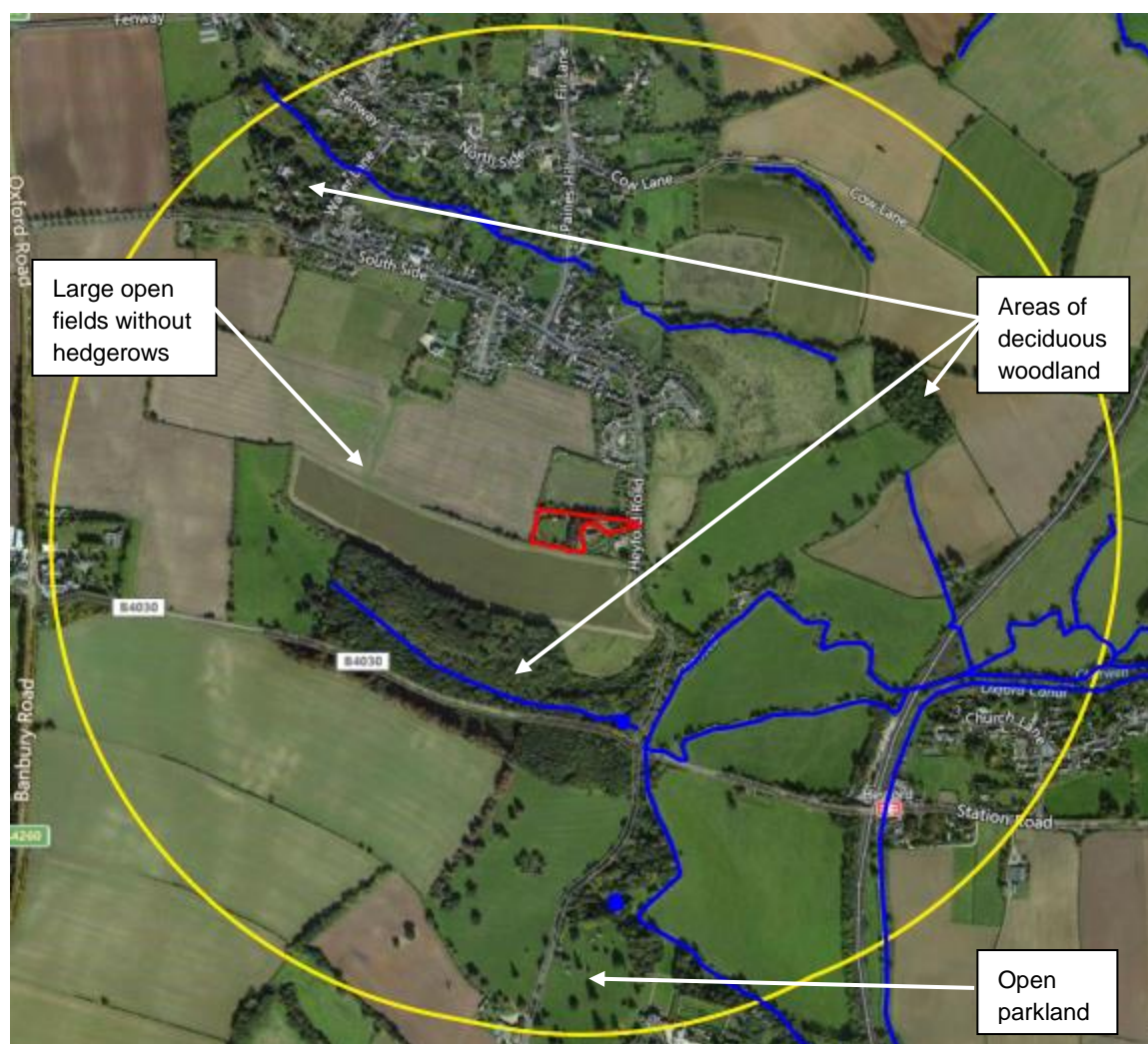


Figure 2: Habitat connectivity features within a 1km radius of the Site (watercourses and waterbodies shown in blue).

3.1.2 Bat Records

A single bat record of common pipistrelle (*Pipistrellus pipistrellus*) was returned from within a 1km radius of the Site. This was from 1997 and associated with the village of Steeple Ashton. The record did not provide any information as to whether the bat was roosting or was recorded grounded or in flight.

The lack of historical records was not considered likely to indicate a lack of presence based on the local habitats but rather was attributed to likely under-recording.

There were no statutory or non-statutory Sites designated for bats within 1km of the Site.

3.2 Preliminary Roost Assessment

3.2.1 Weather

The weather conditions during the Site visit on 15th February 2019 were as follows:

Table 3: Weather conditions during site visit

Parameter	Recorded Figure
Temperature	14°C
Cloud cover	100%
Precipitation	None
Wind speed (Beaufort scale)	1 – light air

3.2.2 Site Description

The Site was an area of land approximately 1.3 hectares in size associated with a single residential dwelling (albeit this was not included in the application boundary) and garden. It included seven detached outbuildings, which were mostly used for storing vehicles or materials, a managed lawn with planted borders, mature trees at the boundaries and a private narrow-gauge railway.

The trees at the Site had already been subjected to an assessment of their suitability for roosting bats during the Preliminary Ecological Appraisal undertaken in January 2019. A closer inspection on 15th February 2019 did reveal a mature ash tree with a large split in one of its branches that was suitable for bat roosting. However, according to the proposed plans, this was not to be impacted at all by the works and is therefore not considered further within this report.

The seven surveyed outbuildings and associated structures within the Site are described below, with the building numbers mapped on Figure 1.

3.3 Building 1

This was a large metal ‘shed’ (Photo 1) used for the storage of train carriages. Its walls and roof were constructed from corrugated metal sheeting, with bat access available at the eaves. The finish of the metal was considered to be too smooth for bats to land and crawl on, hence access to the inside of the building for bats was considered highly unlikely. Internally, the building was constructed from a steel frame with no timber trusses or ridgeboard present. Consequently, there was not considered to be any roosting potential for bats.



Photo 1: Building 1

Suitability for roosting bats: NEGLIGIBLE

3.4 Building 2

3.4.1 External

Building 2 was a single storey train station building (Photo 2). Its walls and gabled roof were constructed from corrugated metal, which was very smooth and unsuitable for bats to cling to. Whilst access was possible for bats behind signs fixed to the external walls or via gaps at the corner of a soffit on the southern elevation (Photo 3), these would only permit bats access to roost against the corrugated metal, which would heat and cool too rapidly

to support sustained roosting. A window was left slightly ajar at the southern elevation of the building (Photo 4) and it is possible that bats could have landed on the external window ledge and gained access to the inside of the building.



Photo 2: Building 2 exterior



Photo 3: Potential bat access but poor roosting suitability



Photo 4: Open window providing access into interior of building 2

3.4.2 Internal

Internally, all of the walls and ceiling of building 2 had been plastered, with no exposed roof structure and nothing for bats to cling to. Equally, the room was vaulted, offering no roof void above for roosting bats (Photo 5). No evidence of bats using the building was recorded during the inspection.

Three mouse droppings were recorded on a table within the vaulted room and it was considered likely that this was from a mouse that had entered via the slightly open window on the southern elevation.



Photo 5: Building 2 internal, plastered ceiling

Suitability for roosting bats: NEGLIGIBLE

3.5 Building 3

3.5.1 External

Building 3 was a timber clad and timber framed stable building overlooking the garden (Photo 6). Its gabled roof was finished with corrugated metal sheeting and did not benefit from any sarking to the underside. The roof overhung the southern elevation to create a porch, although no access for bats was possible at the eaves in this location. A walk around the building revealed occasional gaps between timber panels as well as a gap between roof timbers on the north elevation (Photo 7), which would permit bats access to the inside of the building.



Photo 6: Building 3 exterior



Photo 7: Potential bat access to interior of building 3

3.5.2 Internal

Internally, roof lights of translucent corrugated plastic were visible in the roof (Photo 8), resulting in moderate light levels internally. A lack of ridgeboard or rafters severely limited any bat roosting opportunities, although plyboard baffles at the ridgeboard did create a dark tunnel potentially suitable for bats (as seen in Photo 9). However, upon detailed inspection, these areas were found to be densely cobwebbed with no evidence of bats.

The remainder of the building did not offer any suitable crevices for roosting bats and overall had little/no opportunities for roosting bats. No evidence of bats was recorded in the building during the inspection.



Photo 8: Building 3 interior



Photo 9: Plyboard 'baffle' at ridgeboard, full of cobwebs

Suitability for roosting bats: NEGLIGIBLE

3.6 Building 4

Building 4 was a large metal 'shed' (Photo 10) used for the storage of train carriages. Its roof and walls were constructed from corrugated metal sheeting, with bat access available at the eaves. However, the finish of the

metal was considered to be too smooth for bats to land and crawl on, hence access to the inside the building for bats was highly unlikely. An inspection pit was present towards the southern end of the building, but this was concrete lined with no gaps, cracks or crevices in which bats could roost. Internally, the building was constructed with a steel frame with no timber trusses or ridgeboard present (Photo 11), consequently, there was not considered to be any roosting potential for bats.



Photo 10: Building 4 exterior



Photo 11: Railway carriages inside building 4

Suitability for roosting bats: NEGLIGIBLE

3.7 Building 5

3.7.1 External

Building 5 comprised a series of adjoined garages with the addition of a second storey to the most northern section, which had been converted to an office (Photos 12 and 13).

The building was constructed in solid brickwork with render and had a series of gabled roofs finished with interlocking tiles. Rooflights were present in the converted two-storey office section as well as in the southern single storey garage areas.

Access for bats was possible on the eastern elevation where a barge board was flush with the external wall but finished short along the slope of the roof and a large gap was present at its southern end (Photo 14). A close inspection did not reveal any bat evidence by way of droppings or staining; neither did it reveal any evidence of bird nesting.

Other potential bat access points were noted under lifted tiles across all elevations of the building, via an open window on the southern elevation and via a gap where the bitumen felt was visible at the roof valley on the eastern elevation.



Photo 12: Building 5 garages – eastern elevation Photo 13: To storey section of building 5, eastern elevation



Photo 14: Potential bat access at eastern elevation



Photo 15: Potential bat access point under tiles

3.7.2 Internal

Internally, the first floor office of building 5 was vaulted and plaster-boarded, resulting in no roof void above and nowhere internally for bats to roost in the office rooms.

On the ground floor, the garages below the office had a flat roof with an Artex ceiling with no exposed ceiling joists and no concealed roosting opportunities, with the exception of a small blockwork lean-to at the western elevation. Where the lean-to met the ground floor garage, there were gaps at the lintel (Photo 16), although these were heavily cobwebbed at the time of survey. Potential roosting opportunities for bats were also present on top of the blockwork wall in this area. However, again, dense cobwebs hung from floor to ceiling in this location at the time of visit, indicating that no animal had disturbed these recently. No evidence of bats was recorded in these areas.

The single-storey garages present at the southern half of this building (one of which was in use as a workshop) were both vaulted with no exposed ridgeboard. The workshop had rooflights resulting in a light internal environment unsuitable for bat roosting, but the underside of the roof here benefited from timber sarking (Photo 17), which could provide suitable crevice-roosting opportunities for pipistrelle bats or similar, between the sarking and the tiles above.

The other southern section of garage was vaulted and plasterboarded (Photo 18) with no exposed timbers and no roosting opportunities for bats. A gap was present in the lintel by the window on the southern elevation but upon closer inspection this was only 1 inch deep and not suitable for roosting bats.



Photo 16: Gap in lintel by lean-to, full of cobwebs



Photo 17: Building 5 interior - workshop



Photo 18: Building 5 interior - vaulted and plaster-boarded garage

No roof voids were available for use by void-seeking bats, such as long-eared species, but numerous opportunities existed for crevice-dwelling bats to roost between the tiles and the sarking or plasterboard below as well as on top of the walls at the eastern elevation.

Suitability for roosting bats: MODERATE

3.8 Building 6

This was a timber-framed and timber-clad garage with a gabled roof finished with tight-fitting felt shingles (Photo 19). Overhanging eaves were present to the western elevation, but these were well-sealed, offering no internal access to bats. An internal inspection revealed that the felt shingles were fitted directly onto the chipboard sarking below (Photo 20), offering no gaps and hence no roosting opportunities for bats. The internal structure of the garage included king post timber trusses in a vaulted roof, but the joints of the timbers were all well-sealed and no crevices existed for bats to conceal themselves; consequently, any bat roosting opportunity was considered to be too exposed. Furthermore, bat access inside the building was not possible unless the garage door was frequently left open, and this was understood not to be the case.



Photo 19: Building 6 west and south elevations



Photo 20: Building 6 interior

Suitability for roosting bats: NEGLIGIBLE

3.9 Building 7

Building 7 was a long, low level timber shed building, measuring approximately 2.5m from floor to ridge, which was open along part of its southern elevation (Photo 21) and along its western elevation (Photo 22). It was timber-clad and timber-framed with a mono-pitch roof finished with corrugated metal sheeting. It was used as a log store and

the open nature of the building resulted in very light and draughty internal conditions unsuitable for roosting bats. There was potential for it to be used occasionally by bats as a feeding perch, given it was a covered area next to mature trees and with exposed timber rafters, but a close inspection of the building revealed no such evidence. Furthermore, no gaps or crevices were noted anywhere in the building, in which bats could conceal themselves.



Photo 21: Building 7, southern elevation



Photo 22: Interior of building 7, looking west

Suitability for roosting bats: NEGLIGIBLE

3.10 Bat Activity Surveys

Following the results of the initial bat survey, and the identification of moderate potential for roosting bats within building 5, two bat activity surveys were subsequently carried out to encompass building 5. The remainder of buildings at the Site were considered to have negligible potential for roosting bats and as such no further surveys of these buildings were undertaken.

3.10.1 Dusk Emergence Survey

The dusk emergence survey of building 5 was undertaken on 13th May 2019, using 3 surveyors. Sunset was at 20:49hrs.

Table 4: weather conditions during dusk emergence survey on 13th May 2019.

Parameter	Start	End
Time	20:29	22:19
Temperature	13°C	10°C
Cloud cover	10%	0%
Precipitation	None	None
Wind speed (Beaufort scale)	1	1

No bats were seen to emerge from the building during the survey. Multiple records of passing and foraging common pipistrelle were noted in association with the wooded areas around the building, with constant foraging amongst the trees to the east of the building for much of the survey. The majority of records were of individual bats, though two individual common pipistrelles were noted at 21:06 and 21:13.

The static bat detector, placed adjacent to the western elevation of the building, recorded a single myotis bat, thought to be a barbastelle (*Barbastella barbastellus*) based on sound analysis of the call, and common pipistrelle at the Site during the survey.

The surveyor, static and camera locations; along with summarised findings of the bat activity noted during the dusk survey, are shown in Figure 3 of the following inserts.

3.10.2 Dawn Re-Entry Survey

The dawn re-entry survey of building 5 was undertaken on 31st May 2019, using 3 surveyors. Sunrise was at 04:55hrs.

Table 5: weather conditions during dawn re-entry survey on 31st May 2019.

Parameter	Start	End
Time	02:55	05:10
Temperature	13°C	13°C
Cloud cover	<10%	100%
Precipitation	None	None
Wind speed (Beaufort scale)	1	1

No bats were seen to enter the building during the survey. Multiple records of passing and foraging common pipistrelle were noted in association with the trees surrounding the building, though no swarming behaviour or re-entry was observed around the trees. There were several instances of bats being observed but not being heard on detectors. These were noted 04:17, 04:18 and 04:24 and may have been brown long-eared bats; all of these flew off to the south and did not display swarming behaviour or re-enter the building surveyed. At 04:24 a noctule bat was noted commuting over the Site. The majority of records were of individual bats, although two individual common pipistrelles were noted at 03:45.

The static bat detector, placed adjacent to the western elevation of the building, recorded a single myotis bat, thought to be a whiskered/brandt's (*Myotis mystacinus/brandtii*) based on sound analysis of the call, and common pipistrelle at the site during the survey.

The surveyor, static and camera locations; along with summarised findings of the bat activity noted during the dawn survey, are shown in Figure 4 of the following inserts.

4 Discussion & Conclusions

A planning proposal to demolish seven outbuildings to facilitate a small residential development resulted in the need for an assessment of these buildings for their potential to support roosting bats.

A preliminary roost assessment of buildings 1-7 was undertaken in February 2019 by a licensed bat ecologist. Buildings 1, 2, 3, 4, 6 and 7 were all found to have negligible suitability for supporting roosting bats and no evidence of bats was found in association with any of these buildings. Consequently, no further survey effort of these buildings for bats is required to facilitate the development.

Building 5 also did not reveal any evidence of roosting bats during the daytime inspection in February 2019, but it did highlight that there were numerous areas between the tiles and the sarking/plasterboard or on top of walls at the eastern elevation where crevice-dwelling bats, such as pipistrelle species, could roost, and any such evidence could possibly be concealed. Consequently, building 5 was assessed as having moderate suitability for roosting bats. As this building would be demolished to facilitate the proposals, in line with accepted guidance by the Bat Conservation Trust, two nocturnal bat surveys of this building were recommended to be undertaken during May-August 2019.

A dusk emergence and a dawn re-entry survey of building 5 were subsequently undertaken during May 2019. The results did not identify any bats emerging from, swarming at, or re-entering the building during the surveys, and as such building 5 is not considered to contain a bat roost. Bat activity was observed in the vicinity of the building throughout the surveys, with common pipistrelle foraging amongst the trees and passes by occasional noctule, myotis bats and possible brown long eared bats. Based on the nature of the Site and its surroundings, this level of activity during the surveys was not unexpected. The rural location of the Site, the maturity of the trees, the watercourses and woodland in the surrounding area are all likely to support a diverse range of bat species, which are likely to utilise the Site for foraging and commuting to suitable habitats in the wider landscape.

As no bat roosts or evidence of bats have been identified within building 5, the proposed demolition works are free to proceed without the need for further survey effort, provided works are undertaken prior to June 2021. Due to the rural location of the Site and the potential of the building to support a bat roost, precautionary mitigation, in the form of a sensitive working methodology for the demolition, is set out below. If works are delayed past June 2021, it is recommended that an updated preliminary roost assessment of the Site be undertaken May-early August in order to inform the works and any further survey required with respect to bats.

No incidental evidence of nesting birds was recorded in any of the outbuildings during the preliminary roost inspection, although there is potential for birds to nest in any of the buildings at the Site. As such, a nesting bird check should be made prior to the start of works to ensure there are no birds in the process of nest-building, egg-laying or chick-rearing within the buildings when any disturbing works begin. In addition, nesting opportunities for birds should be provided post-development in order to provide biodiversity enhancements in accordance with the NPPF; these are noted in section 5.

5 Recommendations

The National Planning Policy Framework paragraph 174 states that "To protect and enhance biodiversity and geodiversity, planning policies should: ...promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species populations". In order to ensure no net loss of biodiversity in accordance with NPPF & Circular 06/2005 recommendations are made below.

5.1 Bats

5.1.1 Buildings 1-4 and 6-7

No further survey work in respect of buildings 1, 2, 3, 4, 6 or 7 is recommended at this stage. It should be noted that buildings can deteriorate over time, creating additional access points for bats. As bats are very mobile, they can occupy a building with suitable features at any time. If in doubt as to whether bats may have moved onto the site in the period since the writing of this report, the advice of an appropriately licensed and experienced ecologist should be sought on how best to proceed.

Due vigilance should be maintained during the course of works to buildings 1, 2, 3, 4, 6, and 7 (particularly any works at roof level) and should evidence of bats (such as individuals or droppings) be found, then works must cease whilst advice is sought from Natural England or a licensed ecologist.

The results of this assessment for buildings 1, 2, 3, 4, 6 and 7 are considered valid for up to two years, after which an updated assessment will be necessary.

5.1.2 Building 5

While no evidence of roosting bats was identified in building 5, due to the mobile nature of bats the following measures are recommended to minimise any risk of encountering bats during the demolition works of building 5. If works are delayed past June 2021, it is advised that an updated preliminary roost assessment of the Site be undertaken to assess the suitability of the building for bats at that time, as buildings are known to deteriorate and potentially become more suitable for bats over time. This updated survey would inform the proposed works and any further survey work that may be required at that time.

Sensitive timing of works

It is not considered *absolutely necessary* to avoid works during the summer months as no maternity roost of bats was found, although this is a strong preference for minimising impacts to the bats. Timing of works are therefore *preferred* between September and April of any given year, to minimise the likelihood of encountering bats.

Hibernation opportunities within building 5 are considered to be negligible. While there was limited hibernation potential within the blockwork lean-to at the western elevation of the building, dense cobwebbing in this area indicated that no fauna had been present in the area recently. The remainder of the building had solid walls and the potential for a bat to protect itself adequately from external variations in climate through the winter months were very limited.

Works at roof level

Works to the roof of the building, such as the removal of roof tiles, should be undertaken with care and in the unlikely event of any bats or bat droppings being identified works should cease and Ecolocation and/or Natural England should be contacted regarding the best way to proceed.

5.1.3 Lighting

Any temporary lighting to be installed during works, and any permanent lighting installed once the development has been completed, should be directed down and away from linear features such as tree lined boundaries of the Site in order to maintain dark corridors around the Site and prevent disturbance to the commuting routes of bats and other protected species that may utilise the Site boundaries.

5.2 Birds

Whilst no evidence of nesting birds was recorded during the surveys, there remains a good suitability for birds to utilise the buildings and nest against steel or timber frames, or on top of walls. The majority of species of nesting bird are protected under the Wildlife & Countryside Act 1981 and as amended by the Countryside & Rights of Way Act 2000. The Site should therefore be surveyed for nesting birds prior to commencement of works by a person competent to do so and due vigilance also be maintained during construction to ensure that no breeding birds are disturbed during the construction process should nesting commence thereafter. Birds typically nest between March-September inclusive though some species will nest at any time of year. If evidence of nesting birds is found, no works should be undertaken that may cause disturbance until after all the chicks have naturally fledged.

The National Planning Policy Framework paragraph 175 states that "Opportunities to incorporate biodiversity in and around developments should be encouraged". Therefore, additional recommendations for biodiversity enhancements across the Site are provided below:

5.3 Enhancements

Bats: A small number (4 to 6) of bat boxes could be erected on retained trees or new buildings, in order to provide additional opportunities for roosting bats. Boxes should be placed in a south-facing direction between 4 and 5m high and comprise a mix of box types suitable for the bats identified during the bat activity surveys. These may include Schwegler 2F bat boxes, Kent bat boxes or similar.

Birds: 10 nest boxes could be provided across the wider Site to maintain and enhance the existing breeding possibilities for birds. Such nesting facilities should be sited away from roads, erected on any retained trees or suitable proposed buildings and facing away from prevailing wind and rain.

Ecolocation would be happy to offer further advice on these if necessary.

5.4 Other recommendations

The Site was also subject to an Ecological Impact Assessment (EclA) carried out by Ecolocation in January 2019. This report should be read in conjunction with the EclA report (Ecolocation, 2019) and any additional recommendations within that report adhered to.

6 References

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Appendix 1 – Proposed Plans