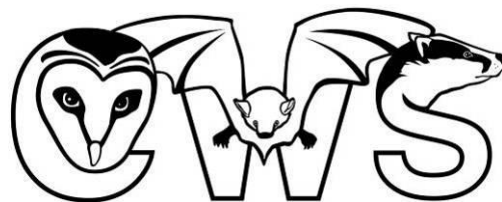


**Bat Survey Report for
Fulford Farm garage and barn,
Shipton Oliffe,
GL54 4LL**



Cotswold Wildlife Surveys

28th July, 31st August and 26th September 2022

QUALITY CONTROL

Date	Version	Name
14.10.21	Daytime inspections	Andy Warren – BSc (Hons), MA (LM), Tech Cert (Arbor A), MCIEM, TechArborA Director
28.07.22		Neil Musgrave – BEng (Hons) Associate
28.07.22 31.08.22 26.09.22	Nocturnal Surveys	Fran Musgrave Associate + assistant
29.11.22	Report prepared	Neil Musgrave – BEng (Hons) Associate
02.03.23	Checked	Innis Greenwood – BSc (Hons) Associate
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The information in this report has been prepared in accordance with the Chartered Institute of Ecology and Environmental Management's (CIEEM) Code of Professional Conduct. The conclusions and recommendations expressed are reasoned judgements based on the evidence.

Every reasonable attempt has been made to comply with BS42020:2013 *Biodiversity – Code of practice for planning and development*, *CIEEM Guidelines for Ecological Report Writing* (CIEEM, 2017) and Bat Conservation Trust's *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edition, Collins, 2016). If there has been deviation from recognised practice, justification/explanation has been given.

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SUMMARY

At Fulford Farm, Shipton Oliffe, planning permission is being sought to re-develop the barn and garage.

As this could impact on features typically used by bats as roosting places, a diurnal inspection was undertaken on 14th October 2021 to assess the buildings for signs of bat occupation. An updated inspection was carried out on 28th July 2022.

All the external and internal structures, especially those associated with the roofs and walls of the buildings were examined.

In the garage close to the southeast gable end, a roosting Lesser Horseshoe Bat *Rhinolophus hipposideros* was present during both inspections. Also noted was a small number of Lesser Horseshoe Bat droppings.

The suitability for roosting pipistrelles *Pipistrellus sp.* was considered negligible as no suitable crevices were observed.

As evidence of bats was found, to characterise the roost and determine the presence or absence of other species, three nocturnal surveys were undertaken on the evenings of 28th July and 31st August, and the morning of 26th September 2022.

During the first emergence survey the Lesser Horseshoe Bat emerged from the garage through the open doorway in the northwest gable, whilst small numbers of Common Pipistrelles *Pipistrellus pipistrellus* and Noctule Bats *Nyctalus noctula* were noted flying round and over the site.

During the second emergence survey no Lesser Horseshoe Bat was present, but Common Pipistrelles and Noctules were again recorded flying round the site.

The dawn return survey recorded three Lesser Horseshoe Bats going to roost in the garage, with a Noctule flying overhead.

Taking all the visits into account, the status of bats at the site is considered thus:

- Lesser Horseshoe Bat – day roost for up to three animals in the garage.

Since the roost will be lost with the re-development of the garage a licence from Natural England.

Given the low status of the roost, the site is eligible for registration under Natural England's Bat Mitigation Class Licence (BMCL) scheme.

Mitigation measures will include a 'toolbox talk' by a Registered Consultant (RC) to contractors about bats and what to do if one is unexpectedly encountered, a pre-works inspection of the garage by the RC, supervision of the destructive roof works by the RC, and the provision of a suitable roost site for Lesser Horseshoe Bats. This will be a new bat loft with a volume of 17.5 m³ which will be created before the re-development of the garage.

It should be noted that under BMCL there will be no timing constraints, and an ecologist will be present at all key stages to ensure the replacement roosting provision is correctly installed.

*

Barn Swallows' *Hirundo rustica* nests were observed in the garage.

Since all in-use bird's nests and their contents are protected from damage or destruction, any works which affect buildings should ideally be undertaken outside the period March to August inclusive. If this time frame cannot be avoided, a close inspection of the buildings affected will be undertaken prior to clearance.

Work will not be carried out in close proximity to any in-use nest, and a minimum buffer of 5.0 metres will be established, although this could be more depending on the sensitivity of the species.

Any in-use nest will be allowed to fledge before it is disturbed.

1. INTRODUCTION

In October 2021, Cotswold Wildlife Surveys was instructed by Tyack Architects, on behalf of their clients Mr & Mrs Evans, to undertake a bat survey of the barn and garage at Fulford Farm, Shipton Oliffe. On 14th October 2021, a visit was made to the property to carry out a diurnal inspection of the buildings to check for signs of bat occupation. An updated inspection was carried out on 28th July 2022.

As evidence of bats was found, to characterise the roost and determine the presence or absence of other species, three nocturnal surveys were undertaken on the evenings of 28th July and 31st August, and the morning of 26th September 2022.

The results of the surveys are contained in this report.

In England, Scotland and Wales, all bat species are fully protected under the Wildlife and Countryside Act 1981 (WCA) (as amended), through inclusion in Schedule 5. In England and Wales this Act has been amended by the Countryside and Rights of Way Act 2000 (CRoW) and the Natural Environment and Rural Communities Act 2006 (NERC), which add an extra offence, makes species offences arrestable, increases the time limits for some prosecutions, and increases penalties.

All bats are also included in Schedule 2 of the Conservation (Natural Habitats, & c.) Regulations (the Habitats Regulations), which defines 'European protected species of animals'. In England this is the Conservation of Habitats and Species Regulations 2010, in Scotland the Habitat Regulations 1994 (as amended), and in Northern Ireland the Conservation Regulations 1995.

All bats are also protected under the Bern Convention Appendix II, the Bonn Convention Appendix II, and the Wild Mammals (Protection) Act 1996.

The above legislation can be summarised thus (Mitchell-Jones and McLeish, 2004):

- ❑ *Intentionally or deliberately kill, injure or capture (or take) bats;*
- ❑ *Deliberately disturb bats (whether in a roost or not);*
- ❑ *Recklessly disturb roosting bats or obstruct access to their roosts;*
- ❑ *Damage or destroy roosts;*
- ❑ *Possess or transport a bat or any part of a part of a bat, unless acquired legally;*
- ❑ *Sell (or offer for sale) or exchange bats, or parts of bats.*

The word 'roost' is not used in the legislation but is used here for simplicity. The actual wording is 'any structure or place which any wild animal...uses for shelter or protection' (WCA), or 'breeding site or resting place' (Habitats Regulations).

As bats generally have both a winter and a summer roost, the legislation is clear that all roosts are protected whether bats are in residence at the time or not.

2. METHODOLOGY

To fully assess bat occupation of a particular site, the Bat Conservation Trust (2016) recommends that information gathered from a desk study of known bat records, and a daytime site walkover, is used to inform the type and extent of future bat survey work, potentially including nocturnal surveys.

The diurnal walkover provides an opportunity to check for signs of occupancy, such as droppings, scratch marks, feeding remains, carcasses, or even animals in residence, whilst nocturnal surveys (if required) allow numbers and species of bats to be confirmed. The latter are also used to determine the presence or absence of bats, where signs of bat activity are indeterminate or absent, but suitability of roosting is considered to be medium to high.

Roosting places vary depending on the species. Pipistrelles usually inhabit narrow cracks or cavities around the outside of buildings, but they will roost in similar niches inside larger barns. Typical sites include soffit spaces, gaps behind fascia boards and end rafters, crevices around the ends of projecting purlins, under warped or lifted roof and ridge tiles, or in gaps in stone and brickwork where mortar has dropped out.

Larger species such as Brown Long-eared Bats *Plecotus auritus*, Myotis bats (Natterer's *Myotis nattereri* and Whiskered/Brandt's *M. mystacinus/M. brandtii*), and Lesser Horseshoe Bats, like to roost in the roof voids of buildings, and can often be found hanging singly or in small groups from ridge boards or roof timbers, especially where they butt up against gable walls or chimney breasts. They especially favour older structures with timber frames. Here they squeeze into tight crevices making them difficult to observe.

Diurnal walkovers can be carried out at any time of the year, but nocturnal surveys should only be undertaken when bats are out of hibernation and in their summer roosts. The recommended period is from May to September inclusive, with May to August optimum and September sub-optimum. The season can be extended into October, although particularly cold weather will render this inadvisable. Indeed, the air temperature at the start of each survey must be at least 10°C or above.

Nocturnal survey visits will be a minimum of two weeks apart, and the number of surveys is dependent on the evidence found or the suitability of the site to bats.

Where bats are found, or there is evidence of bat occupation or activity, i.e. that bat use is confirmed, the number and timing of visits will be decided by the ecologist and will be appropriate for the type of roost. In general, at least two nocturnal surveys will be carried out, both of which can be emergence surveys, or one emergence and one dawn re-entry.

Where there is no evidence of bat presence, and no suitability for roosting, no nocturnal surveys will be needed.

For a site with no evidence but low suitability, just one nocturnal emergence survey is required, this to be in the optimum period.

For medium suitability a minimum of two visits are needed, of which one must be in the optimum period, and one must be a dawn re-entry survey. With high suitability, three visits will be necessary, of which two must be in the optimum period. At least one of these must be a dawn re-entry survey, with the third visit either an emergence or a dawn re-entry.

For sites < 5 ha in size, and/or regularly shaped structures, at least two surveyors must be present, with more surveyors at larger sites and more complex buildings, e.g. those with multiple elevations and/or roof structures.

On 14th October 2021 and 28th July 2022, thorough inspections of the barn and garage were made by Andy Warren (Natural England bat licence No. 2015-16489-CLS-CLS) and Neil Musgrave (Natural England bat licence No. 2020-44602-CLS-CLS), including the exterior and interior walls, roof coverings, eaves, gables, window casements and door frames.

10x42 binoculars and a Fenix TK75 torch were used for the inaccessible/unreachable areas. On these occasions an endoscope was not used, as there were no crevices and cavities that could not be inspected with a torch or by use of binoculars from a ladder.

On the evenings of 28th July and 31st August and the morning of 26th September 2022, nocturnal surveys were undertaken by Fran Musgrave and assistant, to confirm the type of roost number of bats using it, and to determine if any other bat species are roosting within the building.

The emergence surveys began 15 minutes before and continued for one and half hours after sunset and the dawn return started one and half hours before sunrise and finished 15 minutes after sunrise.

The surveys were aided by electronic Echo Meter Touch bat detectors and iPads.

The results of the inspections and nocturnal surveys are detailed in Section 3.

3. RESULTS

3.1 Desk Study

In view of the proposed works, the likely low impact on bats, and in line with current guidance on accessing and using biodiversity data (CIEEM, 2016), a detailed background data search was not carried out in this case.

However, within 2.0 km of Fulford Farm the following development licences for bats were issued by Natural England:

- 2013 1.75 km south for Brown Long-eared Bat, Common Pipistrelle and Lesser Horseshoe;
- 2014 2.00 km northeast for Lesser Horseshoe.

3.2 Location

Shipton Oliffe is a village located approximately 1.5 km southeast of Andoversford. Fulford Farm lies 800 m southwest of the village, 150 m northeast off Withington Road, and 250 m southeast of the junction with A436. The Ordnance Survey Grid Reference of the garage is SP 02364 17759 (Appendix 1).

3.3 Site Description

The survey site comprised an 'L-shaped' modern barn and a pitched roofed garage with an open northwest end (Figs. 1 and 2).



Figs. 1 & 2 Barn (L) and garage (R)

To the north, east and south of the barn and garage were open fields and mature trees and to the west was the farmhouse (Figs. 3 and 4).

The layout of the site is shown in the aerial photograph in Appendix 2.



Figs. 3 & 4 Views to the northeast (L) and southeast (R)

3.4 Buildings Survey

3.4.1 Bats

The daytime inspections were carried out on 14th October 2021 at 16.00 and 28th July 2022 at 19:30. The weather conditions during the times of the surveys were recorded and are presented in Table 1 below.

Parameter	Value 14.10.21	Value 28.07.22
Temperature (°C)	14.0	19.0
Cloud cover (%)	100	100
Precipitation	None	None
Wind speed (Beaufort scale)	0	0

Table 1 Weather conditions during the diurnal surveys

Barn

The barn was ‘L-shaped’ and open-sided, with walls comprising railway sleeper bases and slatted timber uppers. The roof consisted of corrugated metal panels, with a steel support frame (Figs. 5 and 6).



Figs. 5 & 6 External (L) and internal (R) views of the barn

Light penetrated the barn through the open side, and no evidence of bat activity or occupation was found either inside or outside the barn.

Garage

The ridge was intact and sealed and all the corrugated metal roof panels were tightly overlapping (Figs. 7 and 8).



Figs. 7 & 8 Ridge and roof panels to the east (L) and west (R)

The north gable was finished with the roof verge tightly fitting against the gable wall plate (Fig. 9) it also had a large open doorway (Ref. Fig. 2). The south gable was covered with vegetation (Fig. 10).



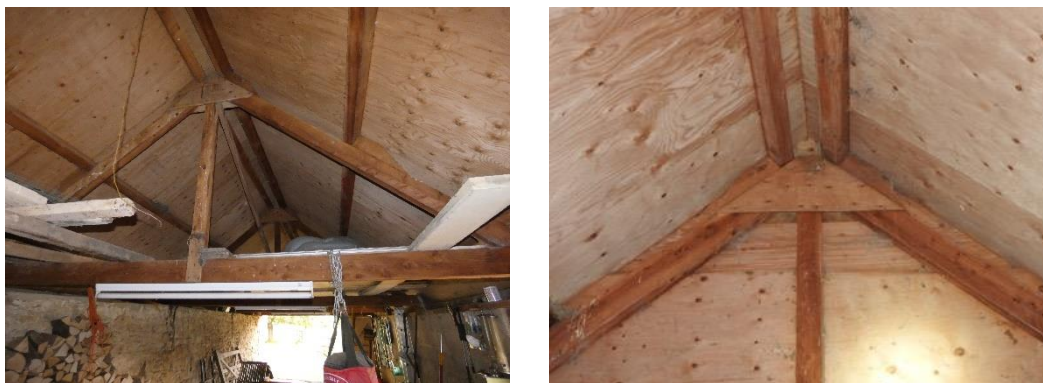
Figs. 9 & 10 Sealed north gable (L) and vegetation covered south gable (R)

The eaves and walls were also covered with vegetation (Ref. Figs. 7 and 8).

No evidence of bat activity or occupation was found outside the garage.

Internally the building was open to a hardboard lined underside of the roof (Figs. 11 and 12).

The only light to penetrate the garage was through the open doorway in the northwest gable and this only penetrated about half the length of the building.



Figs. 11 & 12 Hardboard lined underside of garage roof

During both inspections, close to the southeast gable, a Lesser Horseshoe Bat was found at roost (Fig. 13). A small number of Lesser Horseshoe Bat droppings were also noted.



Fig. 13 Roosting Lesser Horseshoe Bat

The location of the roosting bat is shown in Appendix 3.

3.4.2 First Emergence Survey

The emergence survey was carried out on 28th July 2022, commencing at 20:45 and finishing at 22:30. The weather conditions during the time of the survey were recorded and are presented in Table 2.

Parameter	Value
Temperature (°C)	19.0 start; 19.0 finish
Cloud cover (%)	100
Precipitation	None
Wind speed (Beaufort scale)	0
Sunset	21:03

Table 2 Weather conditions during the emergence survey

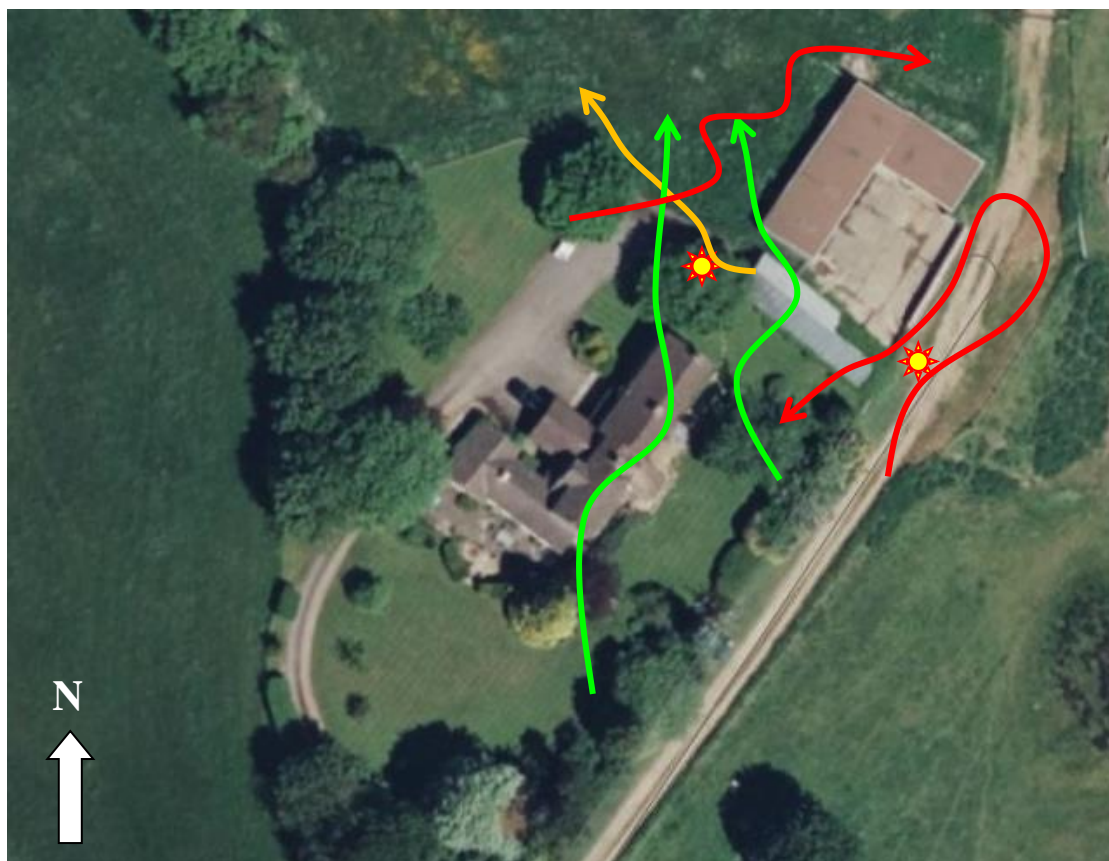
A Lesser Horseshoe Bat emerged from the open doorway of the garage. Common Pipistrelles and Noctules flew round and over the site.

The times of bat observations and detections are shown below.

Time	Observation
21:01	Noctule flew overhead
21:04	Noctule flew overhead
21:16	Noctule flew over the field to the rear of the barn / garage
21:19-21:24	Noctule flying over the field to the rear of the barn / garage
21:25	Lesser Horseshoe Bat emerged from the garage through the open doorway
21:51	Common Pipistrelle heard in the field to the front of the garage
22:01	Common Pipistrelle heard to the rear of the barn and garage
22:30	No further observations or detections and survey ended

The bat flight paths at emergence are shown on Plan 1.

Plan 1 Bat flight paths at emergence on 28th July 2022



Common Pipistrelle Bats → Positions of observers ★

Lesser Horseshoe Bat →

Noctule Bats →

3.4.3 Second Emergence Survey

The second emergence survey was carried out on 31st August 2022, commencing at 19:45 and finishing 21:30. The weather conditions during the time of the survey were recorded and are presented in Table 3.

Parameter	Value
Temperature (°C)	19.5 start; 19.0 finish
Cloud cover (%)	40
Precipitation	None
Wind speed (Beaufort scale)	0
Sunset	19:58

Table 3 Weather conditions during the second emergence survey

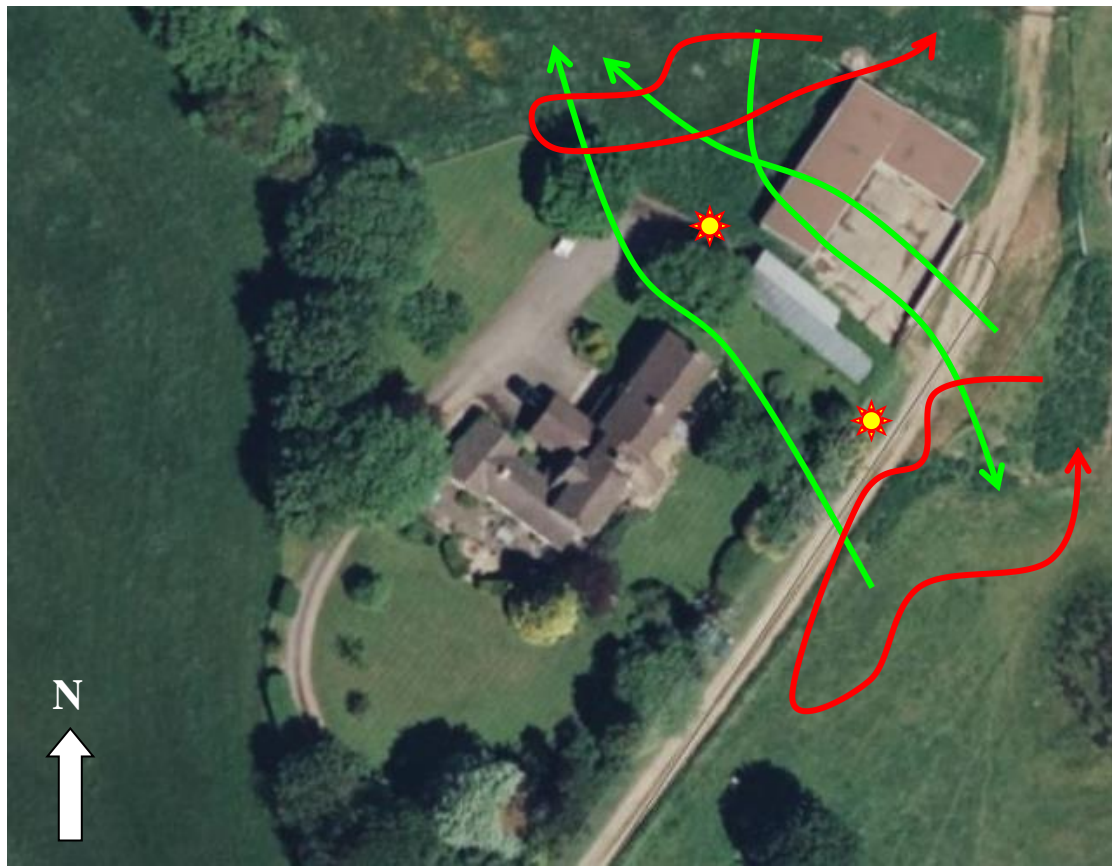
Common Pipistrelles and Noctules again flew round and over the barn and garage. No bats emerged from the garage.

The times of bat observations and detections are shown below.

Time	Observation
20:10	Noctule flew overhead
20:21-20:25	Noctule flew over the field to the rear of the barn / garage
20:31	Noctule flew overhead
20:39-20:45	Common Pipistrelle heard in the field to the front of the garage
20:57-21:04	Common Pipistrelle heard to the rear of the barn and garage
21:30	No further observations or detections and survey ended

The bat flight paths at emergence are shown on Plan 2 overleaf.

Plan 2 Bat flight paths at emergence on 31st August 2022



Common Pipistrelle Bats →

Noctule Bats →

Positions of observers ☀

3.4.4 Dawn Return Survey

The dawn return survey was carried out on 26th September 2022, commencing 05:30 and finishing at 07:15. The weather conditions during the time of the survey were recorded and are presented in Table 4.

Parameter	Value
Temperature (°C)	13.0 start; 12.5 finish
Cloud cover (%)	100
Precipitation	None
Wind speed (Beaufort scale)	0
Sunrise	07:00

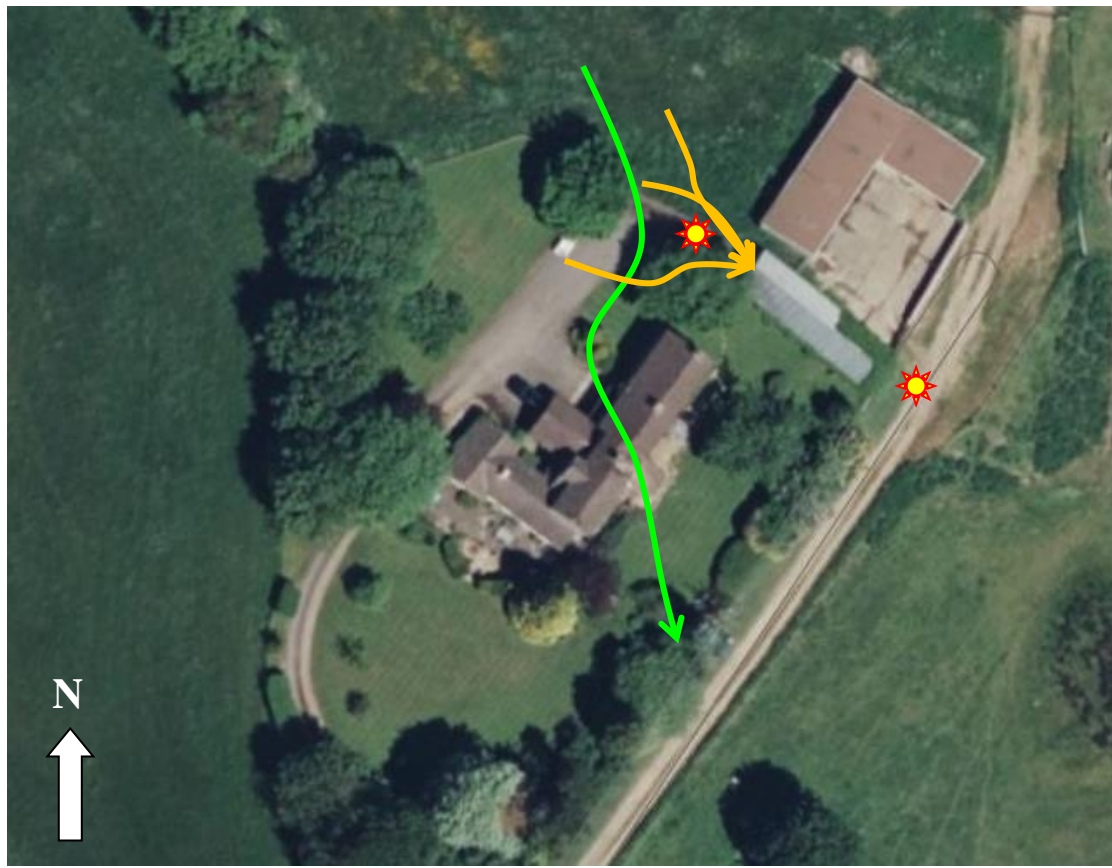
Table 4 Weather conditions during the dawn return survey

Three Lesser Horseshoe Bats went to roost in the garage and a Noctule flew overhead.

The times of bat observations and detections are shown below.

Time	Observation
06:00-06:15	Three Lesser Horseshoes went to roost in the garage
06:31	Noctule flew overhead from north to south
07:15	No further observations or detections and survey ended

The bat flight paths at dawn return are shown on Plan 3 overleaf.

Plan 3 Bat flight paths at dawn return on 26th September 2022

Lesser Horseshoe Bats →

Noctule Bat →

Positions of observers *

3.4.5 Other species

Several Barn Swallows' nests were observed in the garage (Figs. 14 and 15).



Figs. 14 & 15 Barn Swallows' nests

4. CONCLUSIONS AND RECOMMENDATIONS

Bats tend to be seasonal visitors to properties and are not usually in occupation all year round. The females normally form maternity colonies during May or June and then leave for adjacent trees and/or woodland during July or August once the young bats are able to fly and become independent. Here they will spend the winter months in hibernation before returning to the building or barn the following spring.

Male bats generally live alone and have a number of favoured roosts. During the summer they visit each of these for a few days at a time, before moving to their chosen hibernation site in mid-late October. Different species have different habits, but this seasonal movement is common to all.

Bats choose their roosts carefully. During the summer they look for sites which are warmed by the sun, and as a result are most often found on the south and western side of buildings.

Pipistrelles, our smallest and commonest bats, prefer to roost in very confined spaces around the outside of buildings, typical places being behind hanging tiles, weather boarding, soffit, barge and eave boarding, between roof felt and roof tiles or in cavity walls. As such they can be difficult to find, so the suitability for roosting was also assessed.

This was considered negligible, as no suitable crevices or gaps were noted.

The absence of roosting pipistrelles was subsequently confirmed by the nocturnal surveys, when no bats emerged from or went to roost in the garage or barn. However, a small number of Common Pipistrelle Bats were recorded flying round, these having emerged elsewhere.

Another bat frequently encountered in buildings is the Brown Long-eared Bat. This is also a common species, but unlike pipistrelles, they prefer the dry, warm space of the loft or roof void, and can often be found hanging from roof timbers, especially rafters and the ridge board next to chimney breasts.

No evidence of Brown Long-eared Bat activity was found either in the garage or barn, but small numbers of Lesser Horseshoe Bat droppings were noted in the garage, with a single roosting Lesser Horseshoe Bat recorded on 14th October 2021 and 28th July 2022.

No Lesser Horseshoe Bat was present on 31st August 2022, but during the dawn return survey three Lesser Horseshoe Bats went to roost in the garage.

Taking all the visits into account, the status of bats at the site is considered thus:

- Lesser Horseshoe Bat – day roost for up to three animals in the garage.

Since the roost will be lost with the re-development of the garage a licence from Natural England. Given the low status of the roost, the site is eligible for registration under Natural England's Bat Mitigation Class Licence (BMCL) scheme.

Mitigation measures will include a 'toolbox talk' by a Registered Consultant (RC) to contractors about bats and what to do if one is unexpectedly encountered, a pre-works inspection of the garage by the RC, supervision of the destructive roof works by the RC, and the provision of a suitable roost site for Lesser Horseshoe Bats.

This will be a new bat loft with a volume of 17.5 m³ which will be created before the re-development of the garage.

It should be noted that under BMCL there will be no timing constraints, and an ecologist will be present at all key stages to ensure the replacement roosting provision is correctly installed.

*

Barn Swallows' nests were observed in the garage.

Since all in-use bird's nests and their contents are protected from damage or destruction, any works which affect buildings should ideally be undertaken outside the period March to August inclusive. If this time frame cannot be avoided, a close inspection of the buildings affected will be undertaken prior to clearance.

Work will not be carried out in close proximity to any in-use nest, and a minimum buffer of 5.0 metres will be established, although this could be more depending on the sensitivity of the species.

Any in-use nest will be allowed to fledge before it is disturbed.

5. REFERENCES

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APPENDICES

Appendix 1: Location plan

Appendix 2: Site layout

Appendix 3: Location of bat droppings and roosting bat

Appendix 1: Location plan



Barn and garage, Fulford Farm, Shipton Oliffe

Appendix 2: Site layout



Garage and barn

Appendix 3: Location of bat droppings & roosting bat



Lesser Horseshoe Bat droppings ★

Lesser Horseshoe Bat at roost 🦇

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Fulford Farm barn and garage, Shipton Oliffe – Bat Survey Report

To: Mr & Mrs Evans

Report Number: 4238-CWS-02

Version: 01

Date: 7th March 2023