

Bat Survey Report

Site: Grange Farm, Horn Lane, Evenlode, Moreton-in-Marsh, GL56 0NT

Client: Rupert Holdsworth Hunt



Night Bell Cottage | 55 Main Street | Long Compton | Warwickshire | CV36 5NX

07757 611918 | mollie@paxfordecology.co.uk

www.paxfordecology.co.uk

Author:
Mollie Paxford, Environmental Science BSc (Hons), Conservation Ecology MSc

QUALITY CONTROL

Date	Version	Name
09.08.21	Daytime inspection	Mollie Paxford – BSc (Hons), MSc Director
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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

In 2019 a diurnal inspection of the Grange Farm on Horn Lane in Evenlode was carried out by Cotswold Wildlife Surveys. Their results were as follows; *four clusters of droppings indicative of Lesser Horseshoe Bat *Rhinolophus hipposideros* found in the stone walled stable block. One cluster of 30+ was found on the ground floor in the room next-but-one to the south gable – bat access was through the missing upper half of the stable door. Three clusters of c50, c75 and 100+ were noted in the void above the room next-but-one to the south gable, with the bat entrance presumed to be through a large square opening in the north gable.*

The conclusion by Cotswold Wildlife Surveys was:

To ensure the Continued Ecological Functionality of the bat roost, and hence the Favourable Conservation Status of bats at the site, it is proposed to only convert the ground floor of the stables, retaining the upper floor as a bat loft. This will require the installation of a permanent ceiling before bats return from hibernation (no animals were present at the time of the inspection). Currently only part of the upper floor is boarded out properly, with the rest isolated by hardboard tacked to the underside of the joists. It is therefore proposed to remove the hardboard and replace it with dryboard.

The above works were carried out accordingly.

On 9th August 2021, an inspection was made of the stable building to assess it for signs of bat occupation. This was done in association with a planning application to convert the south end of the stable building.

All the internal and external structures, especially those associated with the roofs and walls of the building were examined. In addition, the Lesser Horseshoe roost was also carefully checked for monitoring purposes.

The suitability for roosting pipistrelles *Pipistrellus sp.* was considered to be negligible, as there were no suitable gaps or crevices. Inside the upper floor of the southern end of the stables there were c50 loosely clustered Lesser Horseshoe Bat droppings, as well as a single bat roosting on the underside of the roof. The bat loft at the northern end of the stables contained at least two Lesser Horseshoe Bats, along with thousands of droppings. The single Lesser Horseshoe in the southern end of the stables had accessed it via a small gap in the wall which separates it from the bat loft.

Given this, two nocturnal emergence surveys were carried out. These were undertaken on the evenings of 10th and 24th August 2021.

The emergence surveys began 15 minutes before sunset and continued for up to one and three quarters hours after.

During the first nocturnal survey on the evening of 10th August a single Lesser Horseshoe Bat was seen to emerge from the bat loft entrance at the northern end of the building. No bats emerged from the southern section of the stables. Other species recorded in the area included Noctule *Nyctalus noctule*, Whiskered/Brandt's *Myotis mystacinus*/*M. brandtii* and Daubenton's *M. daubentonii*.

The second nocturnal survey on 24th August had similar results, with a single Lesser Horseshoe Bat emerging from the entrance of the bat loft on the north gable wall, whilst low levels of Common Pipistrelle *Pipistrellus pipistrellus*, Soprano Pipistrelle *P. pygmaeus*, Natterer's *M. nattereri*, and Brown Long-eared Bats *Plecotus auratus* were recorded foraging around the site.

From the inspection and nocturnal surveys, the status of bats at Grange Farm was considered thus:

- Northern end of stable building – bat loft with at least 3 Lesser Horseshoe Bats.
- Southern end of stable building – occasional day roost for a single Lesser Horseshoe Bat.

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 roof void by the RC, supervision of the destructive roof works by the RC, the latter undertaken by hand, and the provision of a Schwegler 1FD bat box on a retained tree within the adjacent paddock in which to relocate a bat if one is discovered before or during the works. The small gap in the dividing wall will be carefully blocked up to ensure that the bats are able to safely continue to use the bat loft at the northern end of the building throughout the construction process and thereafter.

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.

1. INTRODUCTION

In August 2021, Paxford Ecology Ltd was instructed by Rupert Holdsworth Hunt, to undertake a bat survey of the southern end of a stable building at Grange Farm. On 9th August 2021, a visit was made to the property to carry out a diurnal inspection of the outbuilding to check for signs of bat occupation.

The suitability for roosting pipistrelles was considered to be negligible, as there were no suitable gaps or crevices. Inside the upper floor of the southern end of the stables there were c50 loosely clustered Lesser Horseshoe Bat droppings, as well as a single bat roosting on the underside of the roof. The bat loft at the northern end of the stables contained at least two Lesser Horseshoe Bats, along with thousands of droppings. The single Lesser Horseshoe in the southern end of the stables had accessed it via a small gap in the wall which separates it from the bat loft.

Given the above two nocturnal emergence surveys were carried out. These were undertaken on the evenings of 10th and 24th August 2021.

The results of the inspection and nocturnal 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), which adds 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 1994, (or Northern Ireland 1995) (the Habitats Regulations), which defines 'European protected species of animals'.

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

In order 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 the suitability for bat roosting is considered to be low, medium or 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, Myotis bats (Natterer's and Whiskered/Brandt's), and Lesser Horseshoes *Rhinolophus hipposideros*, 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 these 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.

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 9th August 2021, a thorough inspection of the stables was made by Mollie Paxford (Natural England bat licence No. 2020-47378-CLS-CLS), including the exterior and interior walls, roof coverings, roof spaces, eaves, gables, fascias, roof and ceiling timbers, window casements and door frames.

10x42 Nikon binoculars and a Clulight CB2 torch were used for the inaccessible/unreachable areas. On this occasion 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.

On the evenings of 10th and 24th August 2021, nocturnal surveys of the stable building were undertaken by Mollie Paxford and an assistant.

The emergence surveys began 15 minutes before sunset and continued for up to one and three quarters hours after.

The surveys were aided by the use of electronic Echo Meter Touch and BatBox Duet bat detectors and i-pads. This facilitates the detection of bats, and computer analysis of recordings aids in the identification of individual species, in particular those which might be utilising different frequencies simultaneously.

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

3. RESULTS

3.1 Desk Study

In view of the small scale 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 background data search was not carried out in this case.

3.2 Location

Evenlode is a small village located approximately 3.5 km southeast of Moreton in Marsh in Gloucestershire. Horn Lane runs east out of the village, with Grange Farm situated on the south side of the road at Ordnance Survey Grid Reference SP 22767 28821 (Appendix 1).

3.3 Site Description

The survey site comprised the southern end of a brick and stone stable building with a pitched tile roof (Figs. 1 and 2).



Figs. 1 & 2 Southern end of stable building

The site was set within a rural village, with farm buildings and open pastoral and arable farmland beyond.

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

3.4 Building Survey

The daytime inspection was carried out on 9th August 2021, commencing at 10:30. The weather conditions during the time of the survey were recorded and are presented in Table 1 below.

Parameter	Value
Temperature (°C)	17.0
Cloud cover (%)	20
Precipitation	None
Wind speed (Beaufort scale)	1-2

Table 1 Weather conditions during the diurnal survey

3.4.1 Bats

The slate ridge and roof tiles were all in good condition and tightly overlapping, with none raised, broken, missing or dislodged (Figs. 3 and 4).



Figs. 3 & 4 Ridge and roof tiles

The gable ends were finished with the roof tiles sealed to the end rafter which was exposed (Figs. 5 and 6). These were tight, with no gaps.



Figs. 5 & 6 Gable ends

The eaves were clipped and sealed, whilst the stone and brickwork was sound throughout, with no gaps or cracks. The window casements and doorframes were all tightly fitting and were all kept closed at all times, other than a gap above the stable door leading into the downstairs room (Fig. 7).



Fig. 7 Interior downstairs



Fig. 8 Roof space

The upper floor could only be accessed by a ladder to the external hay door which was kept closed and sealed. Upstairs the room was open to the underside of the roof which was lined with tarred felt and chicken wire (Fig. 8).

Approximately 50 bat droppings were seen in a loose cluster at the southern end of the building, on the floor. These appeared to be from a Lesser Horseshoe Bat. Indeed, a single Lesser Horseshoe Bat was seen roost above the cluster (Fig. 9).



Fig. 9 Roosting Lesser Horseshoe Bat

3.4.2 Other species

A single old Swallows' *Hirundo rustica* nest was found inside the ground floor room of the southern end of the stable building. Given that there are numerous other buildings within the same ownership which will not be impacted on by the proposed works, no specific mitigation measures are considered necessary.

3.5 Nocturnal Surveys

3.5.1 1st Emergence Survey

The 1st emergence survey was carried out on 10th August 2021, commencing at 20:20 and finishing at 22:15. The weather conditions during the time of the survey were recorded and are presented in Table 2.

Parameter	Value
Temperature (°C)	17.0 start, 16.0 finish
Cloud cover (%)	30
Precipitation	None
Wind speed (Beaufort scale)	0
Sunset	20.40

Table 2 Weather conditions during the 1st emergence survey

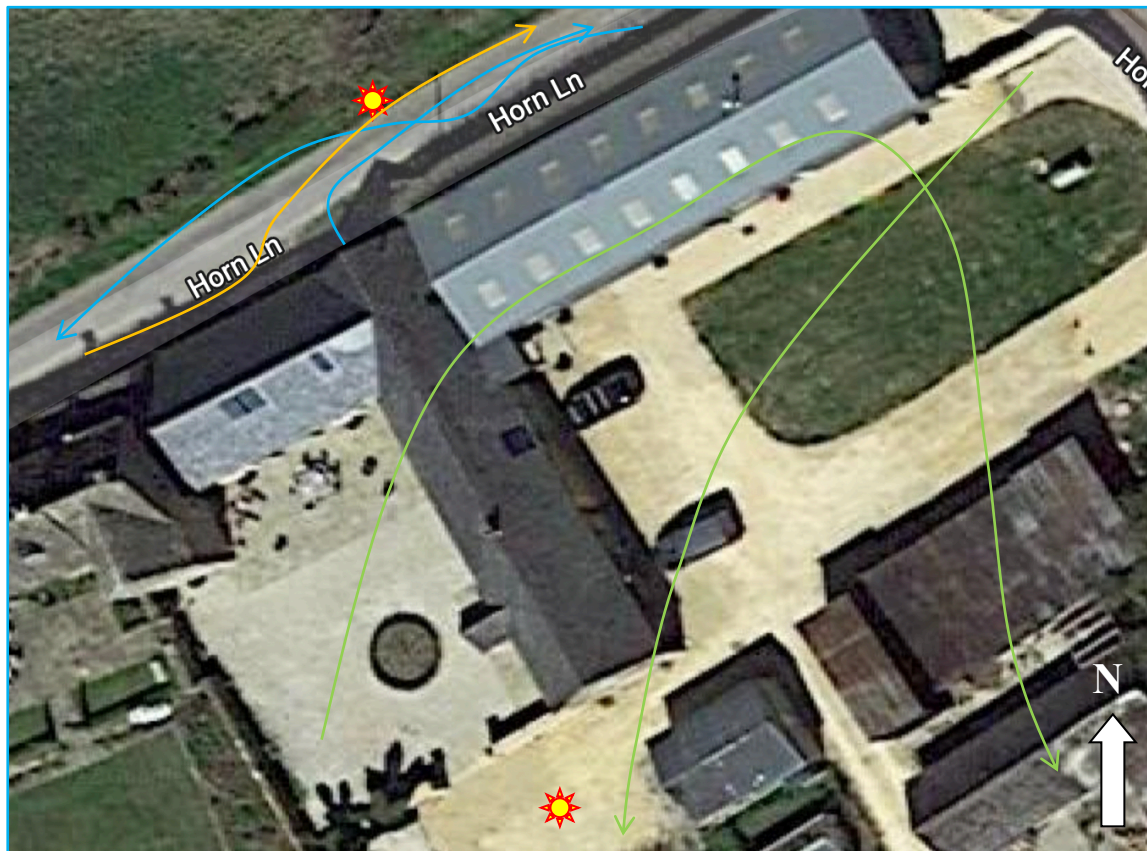
A single Lesser Horseshoe Bat was seen to emerge from the bat loft entrance at the northern end of the building. No bats emerged from the southern section of the stables. Other species recorded in the area included Noctule, Whiskered/Brandt's and Daubenton's.

The times of bat observations and detections are shown below.

Time	Observation
20.59	Noctule heard in the distance
21.05	Lesser Horseshoe emerged from the northern gable end of the stables
21.16	Lesser Horseshoe flew along Horn Lane
21.26	Noctule flew over
21.27	Lesser Horseshoe heard in the distance
21:34	Whiskered/Brandt's flew along Horn Lane
22.52	Daubenton's heard but not seen
22.04	Noctule passed over
22:15	No further detections were made and survey ended

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

Plan 1 Bat flight paths at 1st emergence on 10th August 2021



Whiskered/Brandt's Bat →

Lesser Horseshoe Bat →

Noctule Bat →

Positions of observers ✨

3.5.2 2nd Emergence Survey

The 2nd emergence survey was carried out on 24th August 2021, commencing at 19:50 and finishing at 21:45. The weather conditions during the time of the survey were recorded and are presented in Table 3.

Parameter	Value
Temperature (°C)	18.0 start, 18.0 finish
Cloud cover (%)	50
Precipitation	None
Wind speed (Beaufort scale)	0
Sunset	20.11

Table 3 Weather conditions during the 2nd emergence survey

A single Lesser Horseshoe Bat was seen emerging from the entrance of the bat loft on the north gable wall, whilst low levels of Common Pipistrelle, Soprano Pipistrelle, Natterer's, and Brown Long-eared Bats were recorded foraging around the site.

The times of bat observations and detections are shown below.

Time	Observation
20.29	Common Pipistrelle (CP) foraging along Horn Lane
20.32	Lesser Horseshoe emerged from the north gable end of the stables
20.45	Soprano Pipistrelle flew through the yard
20.56	Brown Long-eared seen along Horn Lane
21.03	Natterer's flew from Horn Lane into the farm
21.17	Lesser Horseshoe heard along Horn Lane
21.32	CP flew through the yard
21.45	No further detections were made and survey ended

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

Plan 2 Bat flight paths at 2nd emergence on 24th August 2021




Brown Long-eared Bat 

Lesser Horseshoe Bat 

Natterer's Bat 

Common Pipistrelle Bat 

Soprano Pipistrelle Bat 

Positions of observers 

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 house 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 suitability for roosting was also assessed.

This was considered to be negligible, as there were no suitable gaps or crevices in the building.

However, the absence of roosting pipistrelles was confirmed by the nocturnal surveys, when none were seen to emerge from the building.

Another bat frequently encountered in buildings is the Brown Long-eared. 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.

Inside the upper floor of the southern end of the stables there were c50 loosely clustered Lesser Horseshoe Bat droppings, as well as a single bat roosting on the underside of the roof. There was a bat loft at the northern end of the stables which contained at least two Lesser Horseshoe Bats, along with thousands of droppings. The single Lesser Horseshoe in the southern end of the stables had accessed it via a small gap in the wall which separates it from the bat loft. The bat loft is not part of the development area.

Given this, two nocturnal emergence surveys were carried out. These were undertaken on the evenings of 10th and 24th August 2021.

From the inspection and nocturnal surveys, the status of bats at Grange Farm was considered thus:

- Northern end of stable building – bat loft with at least 3 Lesser Horseshoe Bats.
- Southern end of stable building – occasional day roost for a single Lesser Horseshoe Bat.

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 roof void by the RC, supervision of the destructive roof works by the RC, the latter undertaken by hand, and the provision of a Schwegler 1FD bat box on a retained tree within the adjacent paddock in which to relocate a bat if one is discovered before or during the works. The small gap in the dividing wall will be carefully blocked up to ensure that the bats are able to safely continue to use the bat loft at the northern end of the building throughout the construction process and thereafter.

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.

5. REFERENCES

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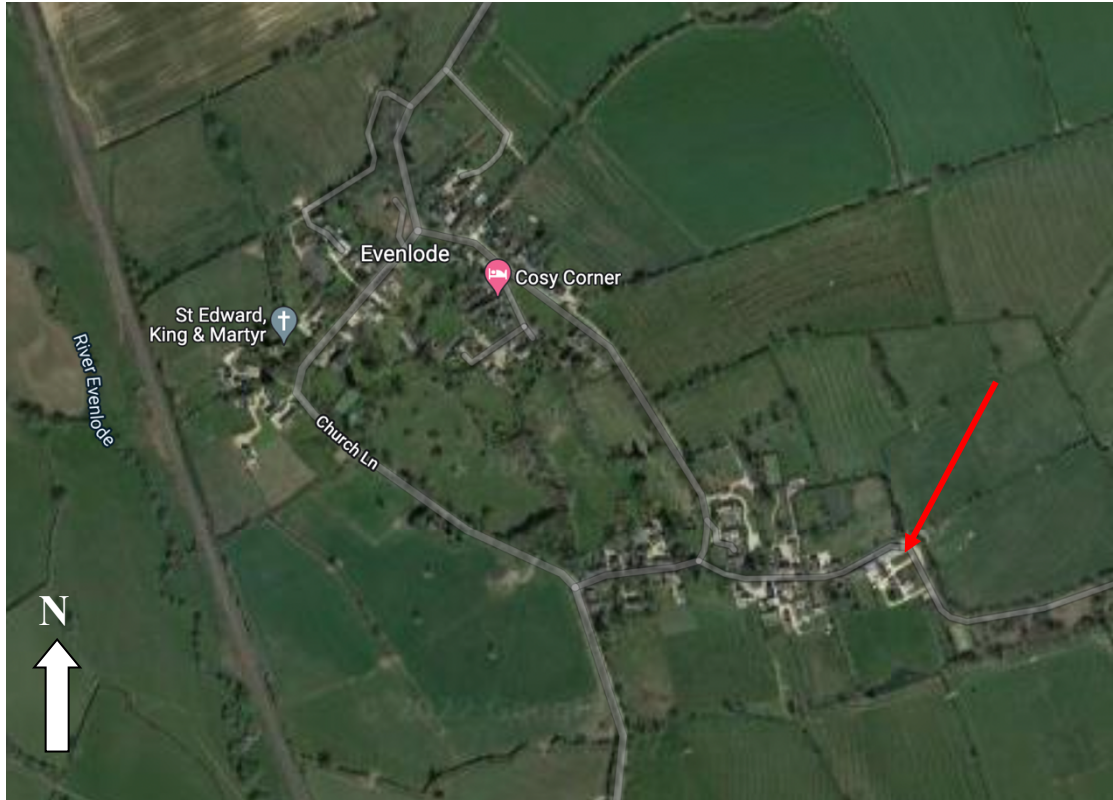
APPENDICES

Appendix 1: Location plan

Appendix 2: Site layout

Appendix 3: Location of bat droppings and roosting bat

Appendix 1: Location plan

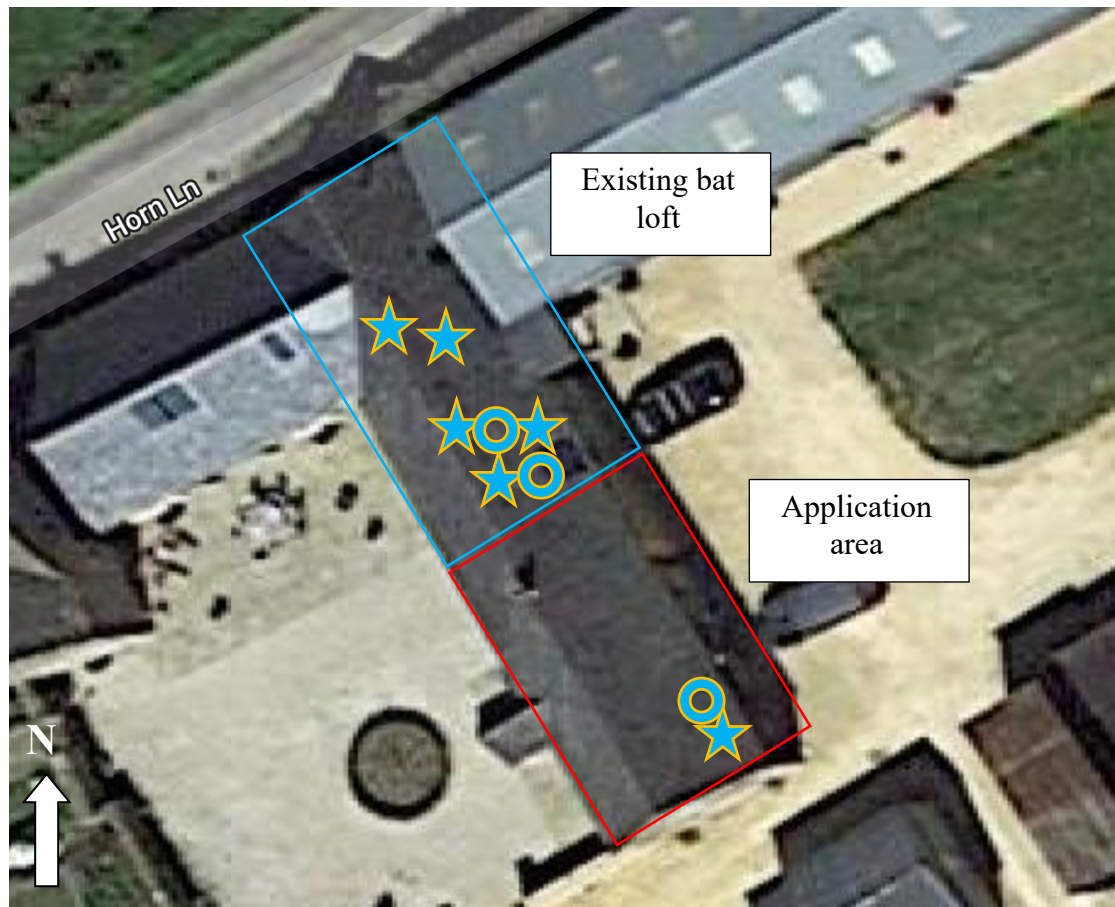


Grange Farm, Evenlode

Appendix 2: Site layout



Appendix 3: Locations of bat droppings and roosting bat



Lesser Horseshoe Bat droppings 

Location of roosting Lesser Horseshoe Bats 