

**Bat Survey Report for  
Corner Cottage,  
Windrush,  
Burford, OX18 4TS**



*NKM Associates*

**21<sup>st</sup> June 7<sup>th</sup> July and 15<sup>th</sup> September 2023**

## QUALITY CONTROL

Date	Version	Name
21.6.23	Daytime inspection	Neil Musgrave – BEng (Hons)
7.7.23 15.9.23	Nocturnal surveys	Neil Musgrave – BEng (Hons)
15.9.23	Report prepared	David Musgrave
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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* (3<sup>rd</sup> edition, Collins, 2016). If there has been deviation from recognised practice, justification/explanation has been given.

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## SUMMARY

At Corner Cottage in Windrush planning permission is being sought to replace the roof.

As this could impact features typically used by bats as roosting places, a diurnal inspection was undertaken on 21<sup>st</sup> June 2023, to assess the building for signs of bat occupation.

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

The suitability for roosting pipistrelles *Pipistrellus sp* was considered medium, as suitable crevices and gaps were observed on the roof slopes.

As the suitability was considered medium two nocturnal surveys were undertaken, these on the evening of 7<sup>th</sup> July and the morning of 15<sup>th</sup> September 2023.

The first nocturnal survey recorded Common Pipistrelles and Noctules flying round and over the site. No bats emerged from Corner Cottage.

The second nocturnal survey recorded a single Common Pipistrelle flying round the rear of the rear garden. No bats went to roost in the cottage.

From all the surveys undertaken of Corner Cottage it is considered not to be a bat roost or hibernation site and as such no further surveys or mitigation are required.

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No birds' nests were found either in or on the cottage.

## 1. INTRODUCTION

In early June 2023, NKM Associates was instructed by H A Planning to undertake a bat survey of Corner Cottage in Windrush. On 21<sup>st</sup> June 2023, a visit was made to the property to carry out a diurnal inspection of the building to check for signs of bat occupation.

As the suitability was considered medium two nocturnal surveys were undertaken, these on the evening of 7<sup>th</sup> July and morning of 15<sup>th</sup> September 2023.

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 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 *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 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 surveys must 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., bat use is confirmed, the number and timing of nocturnal surveys 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 of bats but low suitability for bats**, just one nocturnal survey is required, this to be in the optimum period, and either an emergence or a dawn re-entry.

**For sites with medium suitability for bats** a minimum of two nocturnals are needed, of which one must be in the optimum period, and one must be a dawn re-entry survey.

**With high suitability sites**, three nocturnals 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 high suitability 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 21<sup>st</sup> June 2023, a thorough inspection of Corner Cottage was made by Neil Musgrave (Natural England bat licence No. 2020-44602-CLS-CLS), including the exterior and interior walls, roof covering, roof void, eaves, gables, window casements and door frames.

8x42 binoculars and a Fenix TK75 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 from a ladder.

On the evening of 7<sup>th</sup> July and morning of 15<sup>th</sup> September 2023, nocturnal surveys were undertaken by Neil Musgrave and assistant, to confirm absence or presence of bats using the cottage and if using what species and in what numbers.

The emergence surveys began quarter of an hour before and continued for one- and three-quarter hours after sunset and the dawn return began one and three quarters hours before sunrise and finished when fully light.

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

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 detailed background data search was not carried out in this case.

However, within 2.0 km of Corner Cottage, the following European Protected Species licences for bats were issued by Natural England:

- 2013 0.02 km northwest for Brown Long-eared Bat, Lesser Horseshoe and Serotine *Eptesicus serotinus*
- 2010 0.50 km north, Brown Long-eared Bat, Common Pipistrelle, Soprano Pipistrelle and Lesser Horseshoe

#### 3.2 Location

Windrush is a village located approximately 600 m north of the A40. Corner Cottage lies on the corner of a junction and opposite the village green. The Ordnance Survey Grid Reference of the site SP 19276 13027 (Appendix 1).

#### 3.3 Site Description

The survey site comprised of a detached pitched roofed building (Figs. 1 and 2).



**Figs. 1 & 2 Front and rear aspects of Corner Cottage**

The front of the cottage opened on to a road with grass verges on either side and the village church directly opposite. Mature trees were noted on the village green and to the south (Figs. 3 and 4).



**Figs. 3 & 4 Views to the front to the north (L) and south (R)**



The rear garden was laid to lawn with mixed species hedgerows on its boundaries. Mature trees were observed at the rear of the garden. (Figs. 5 and 6).



**Figs. 5 & 6 Views of the rear garden**

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 21<sup>st</sup> June 2023 commencing at 13:00. The weather conditions during the time of the survey were recorded and are presented in Table 1 below.

Parameter	Value
Temperature (°C)	21.5
Cloud cover (%)	50
Precipitation	None
Wind speed (Beaufort scale)	0

**Table 1 Weather conditions during the diurnal survey**

#### 3.4.1 Bats

The ridges were intact and sealed, whilst lifted and missing roof tiles were observed on slopes to both front and rear (Figs. 7 – 10).



**Figs. 7 & 8 Ridges and roof tiles to the front**



**Figs. 9 & 10 Ridges and roof tiles to the rear**

The chimneys bases were sealed with mortar to their adjoining roof tiles (Figs. 11 – 14).



**Figs. 11 & 12 Sealed chimney bases**



**Figs. 13 & 14 Sealed chimney bases**

The gables were sealed with coping stones tightly fitting to the gable wall plates (Figs. 15 & 16).



**Figs. 15 & 16 Sealed Gable ends**

The eaves were finished with the roof ends fitting against the wall plates all round, small gaps were observed but these were not considered large enough for bat occupation (Figs. 17 & 18).



**Figs. 17 & 18 Eaves**

The stone walls were sound throughout, whilst all the window casements and door frames were tightly fitting with no gaps or crevices.

No signs of bat activity were found around the outside of the cottage.

Internally the roof voids had been converted and were vaulted to the dry board lined underside of the roofs (Figs. 19 and 20).



**Fig. 19 Vaulted roof voids**

Light penetrated the converted roof voids through the windows. No evidence of bat occupation was discovered inside the cottage.

### 3.4.2 First Emergence Survey

The first emergence survey was carried out on 7<sup>th</sup> July 2023, commencing at 21:10 and finishing at 23:10. The weather conditions during the time of the survey were recorded and are presented in Table 2.

Parameter	Value
Temperature (°C)	19.0 start; 18.0 finish
Cloud cover (%)	>5
Precipitation	None
Wind speed (Beaufort scale)	0
Sunset	21:26

**Table 2 Weather conditions during the emergence survey**

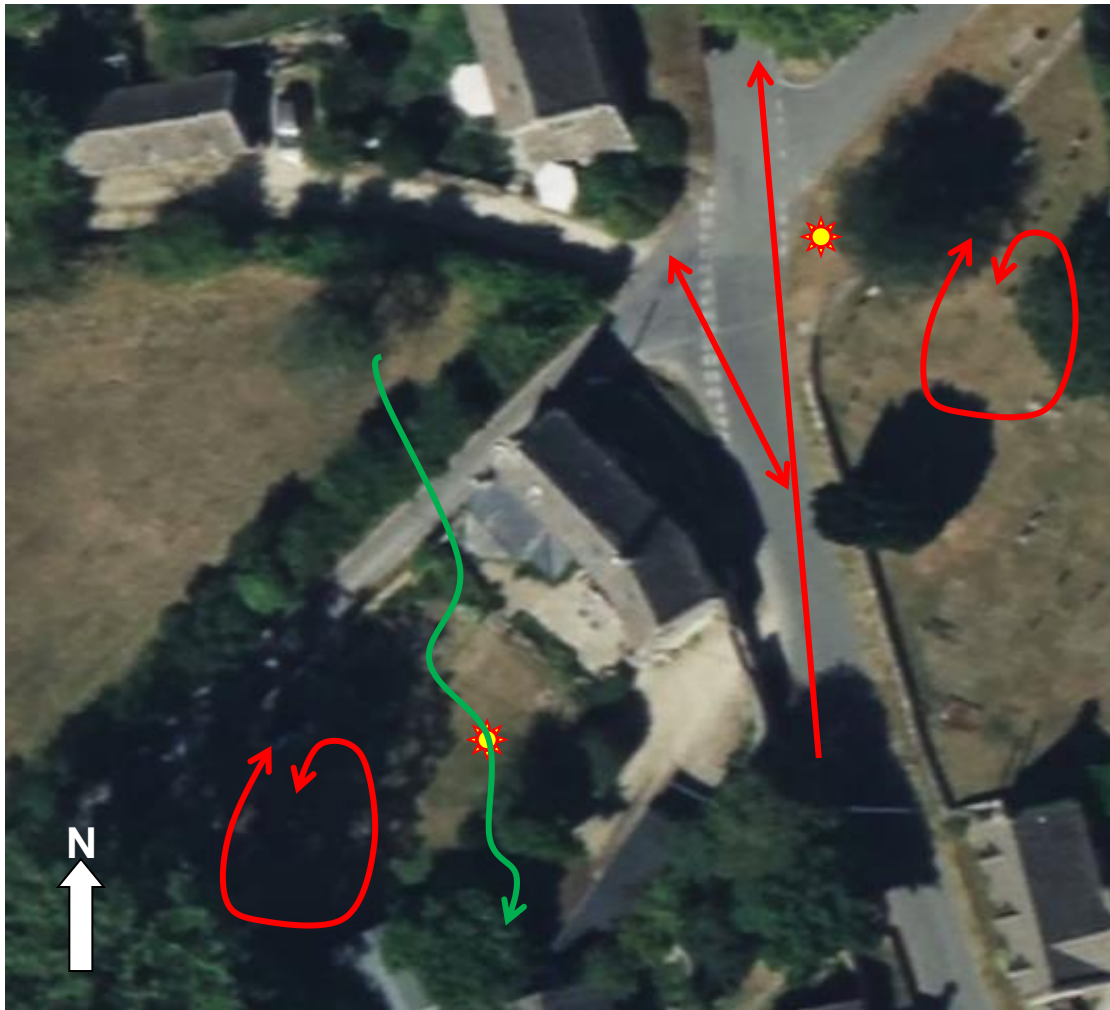
Common Pipistrelles and Noctules flew round and over the site. No bats emerged from Corner Cottage.

The times of bat observations and detections are shown below.

Time	Observation
21:38	Noctule flew over the rear garden north to south
21:44	Noctule flew over the church yard – not seen
22:07	Common Pipistrelle heard in the church yard
22:12	Common Pipistrelle heard in the church yard
22:15	Common Pipistrelle flew south to north up the lane in front of the cottage
22:20	Common Pipistrelle flying up and down the lane in front of the cottage
22:27	Common Pipistrelle heard in the church yard
22:35 – 22:38	Common Pipistrelle heard in the rear garden

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

Plan 1 Bat flight paths at emergence on 7<sup>th</sup> July 2023



Common Pipistrelle Bats →

Nocutle Bats →

Positions of observers ☀

### 3.4.3 Dawn Return Survey

The dawn return survey was carried out on the morning of 15<sup>th</sup> September 2023, commencing at 05:00 and finishing when fully light. The weather conditions during the time of the survey were recorded and are presented in Table 3.

Parameter	Value
Temperature (°C)	13.0 start; 11.5 finish
Cloud cover (%)	>5
Precipitation	None, but light mist
Wind speed (Beaufort scale)	0
Sunrise	06:41

**Table 3 Weather conditions during the dawn return survey**

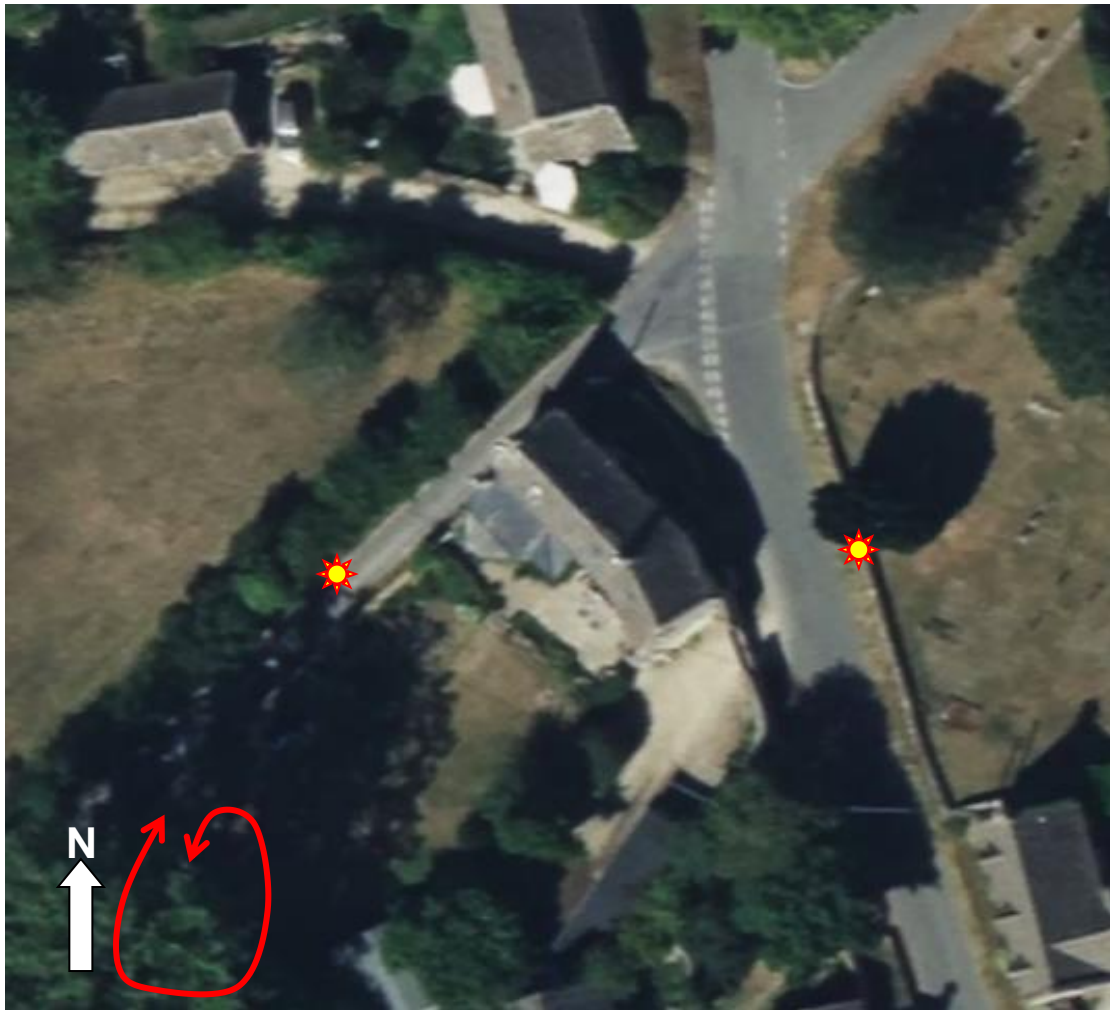
A Common Pipistrelle flew to the rear of the rear garden. No bats went to roost in Corner Cottage.

The times of bat observations and detections are shown below.

Time	Observation
05:58 – 06:00	Common Pipistrelle flying to the rear of the rear garden

The bats flight paths at dawn return are shown on Plan 2 overleaf.

**Plan 1 Bat flight paths at dawn return 15<sup>th</sup> September 2023**



**Common Pipistrelle Bats** →

**Positions of observers** ✨

**3.4.4 Other species**

No birds' nests were found in or on the cottage.

## 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 the suitability for roosting was also assessed. This was considered **negligible**, as there were no suitable crevices or cavities.

The nocturnal survey recorded no bats emerging or going to roost in Corner Cottage.

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 signs of Brown Long-eared Bat activity were found or of any other species that prefer roof voids.**

From all the surveys, Corner Cottage was not identified as a bat roost or hibernation site, and as such no further surveys or mitigation measures are required.

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No bird nests were found in or on Corner Cottage.



## 5. REFERENCES

**Collins, J. (ed.) (2016).** *Bat Surveys for Professional Ecologists: Good Practice Guidelines.* (3<sup>rd</sup> edn). Bat Conservation Trust, London.

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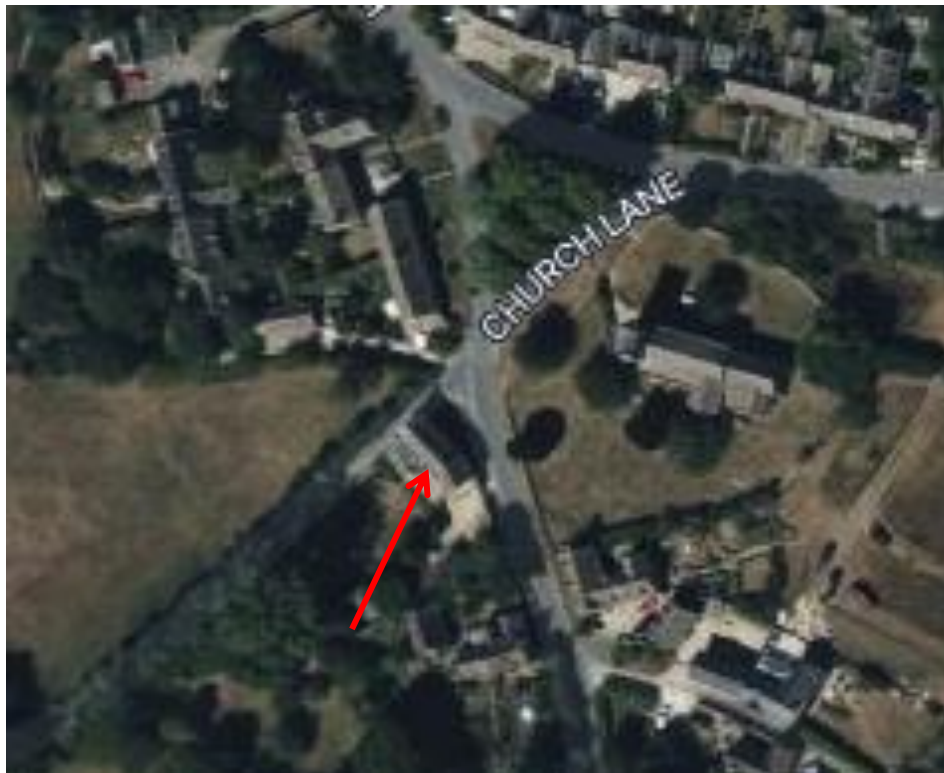
**The Vincent Wildlife Trust, 2003.** *The Bats of Britain and Ireland.* The Vincent Wildlife Trust, Ledbury.

## APPENDICES

Appendix 1: Location plan

Appendix 2: Site layout

**Appendix 1: Location plan**



**Corner Cottage, Windrush**

**Appendix 2: Site layout**



**Corner Cottage**

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