



Cheshire
Ecology Ltd.

**CORNISH HALL BARNS
AUDIT OF BAT MITIGATION STRATEGY**

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EXECUTIVE SUMMARY

Cheshire Ecology Ltd. was commissioned by Cornish Hall Barns Ltd. on 27th September 2017 to audit the implementation of a Bat Mitigation Strategy prepared by Sambrook Associates Ltd.

The site was visited on Tuesday 3rd October 2017. The weather was fine and dry with an ambient temperature of 14°C.

The aim of the survey was to ensure that the method statement outlined by Sambrook Associates Ltd. has been adhered to.

The great majority of the recommendations in Sambrook Associates' Bat Mitigation Strategy appeared to have been implemented. Most of the non-compliances are relatively minor and should not prevent bats from occupying the building.

The client is still negotiating the terms of the local bat group's involvement in the project.

Future inspections will need to be carried out by a suitably licensed ecologist once bats have occupied the building.

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1 INTRODUCTION

- 1.1.1 Cheshire Ecology Ltd. was commissioned by Cornish Hall Barns Ltd. on 27th September 2017 to audit the implementation of a Bat Mitigation Strategy prepared by Sambrook Associates Ltd. (Sambrook Associates Ltd., 2017).
- 1.1.2 The report relates to the construction of an artificial bat loft at Cornish Hall Barns, in Holt, Wrexham County Borough. The bat loft has been constructed as mitigation for the loss of a bat roost, which was present in one of the original barns. This will henceforth be referred to as 'the site'.
- 1.1.3 The centre of the site is located at OS Grid Reference SJ38775 52392 (see Figure 1), at a height of approximately 12m AOD. The site is surrounded by agricultural fields on all sides.

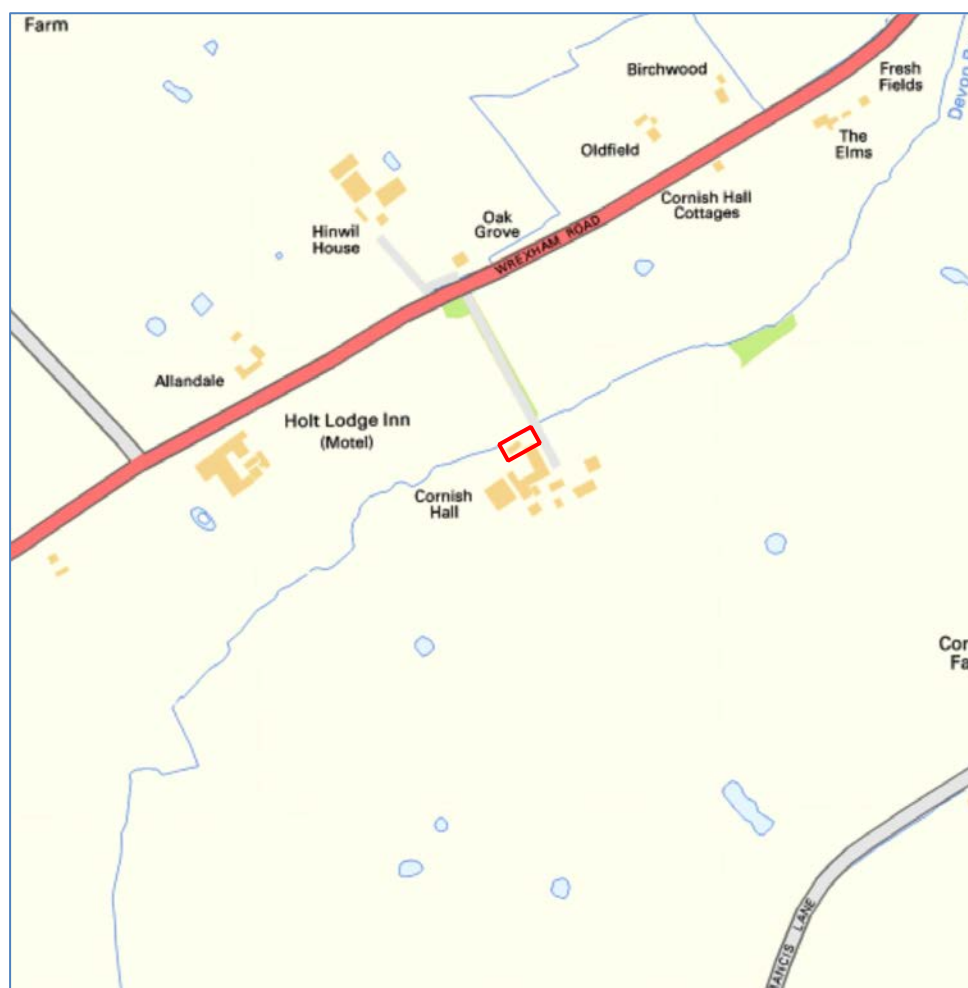


Figure 1: Site Location

1.2 Context

- 1.2.1 The site consists of a series of former agricultural barns and other buildings originally associated with Cornish Hall. The buildings were surveyed for bats by Gerald Longley MCIEEM between 15th May and 19th June 2012 (Gerald Longley Ecological Consultants, 2012).
- 1.2.2 Gerald Longley found evidence of common pipistrelle *Pipistrellus pipistrellus* and brown long-eared bat *Plecotus auritus* maternity roosts in Building 4. This is a large brick-built barn with sandstone quoins and a former hayloft. His team also found evidence that Building 1, a Victorian two-storey brick-built barn, was a former roost for both species.
- 1.2.3 A new building has been constructed to provide mitigation for the loss of the original bat roosts. Sambrook Associates Ltd. have produced a Bat Mitigation Strategy and Method Statement for the development (Sambrook Associates Ltd., 2017).

1.1 Legislation

- 1.1.1 All bat species are protected in the UK under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). The species is also protected under Annex II of the Council Directive 92/43/EEC 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora (the EC Habitats Directive). This has been transposed into UK law by means of the Conservation of Habitats and Species Regulations 2010 (as amended) (England and Wales), the Conservation (Natural Habitats, & c.) Regulations 1994 (as amended) and the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended).
- 1.1.2 It is an offence to deliberately capture, injure or kill a bat; deliberately disturb in a way that would affect their local distribution or abundance, or affect their ability to survive, or breed. It is also an offence to damage or destroy a bat roost and to possess, control, transport, sell, exchange or offer for sale/exchange any live or dead bat or any part of a bat.

2 METHODS

2.1 Introduction

- 2.1.1 The aim of this survey was to ensure that the method statement outlined by Sambrook Associates Ltd. has been adhered to.
- 2.1.2 The survey was carried out by Dr Martin Page MCIEEM, a director of Cheshire Ecology Ltd. Dr Page is a full member of the Chartered Institute of Ecology and Environmental Management and adheres to that organisation's Professional Code of Conduct.

2.2 Site visit

- 2.2.1 The site was visited on Tuesday 3rd October 2017 at 11.00am. The weather was fine and dry with an ambient temperature of 14°C.
- 2.2.2 Bat activity was checked with an Anabat SD2 Bat Detector, before the loft was entered.
- 2.2.3 The condition of the building was compared with the specification outlined in the Mitigation Strategy (Sambrook Associates Ltd., 2017). The findings are summarised in Table 1.

3 RESULTS

3.1 Site description

- 3.1.1 A new single storey building has been constructed to provide a roost for pipistrelles and brown long eared-bats. Approximately 75% of the ground floor is occupied by a car port and the remainder by a brick-built building with a single access door.
- 3.1.2 The loft has a pitched, slate-covered roof, with Habibat access slates on the northern and southern aspects and a turnstile entrance on the western. The loft is accessed by a small hatch from the ground floor and is secured in place by a padlock.
- 3.1.3 The floorboards are unvarnished, but appear to have been treated with a wood preservative. They are sealed to prevent draughts, but as a result it was not possible to check whether the non-breathable membrane had been fitted as specified in the Mitigation Strategy.
- 3.1.4 An Easy Log EL-USB-1 datalogger has been placed inside the building near the loft hatch. A print out from the data logger is included in Appendix B.
- 3.1.5 The site was visited in early October. There had been no hard frosts up to that date and it was not possible to check the minimum temperature in the loft.
- 3.1.6 The interior of the loft was checked with Anabat SD2 before it was inspected. There was no evidence that bats were present and there were no bat droppings or other field signs to show that they had visited the loft since it had been constructed.

3.2 Adherence to the Method Statement

Requirement	Has this been adhered to?
A holly and hazel hedgerow has been planted along the top of the banks of the brook	Implemented. The hedgerow is actually composed of hazel and hawthorn.
Access to the loft is restricted to authorised personnel.	Implemented.
A restricted covenant must be drawn up upon the sale of the building to restrict the use of the car port to ground floor.	We have seen a copy of the Land Title document (TP1) for the property. Paragraph 12.4.11 states that 'Not to access the bat loft situated on the dwellings.' For reasons of confidentiality this was an unsigned copy.
All gaps sealed off with the only access being the dedicated bat access points.	Implemented.
The loft will benefit from the	It was not possible to see this membrane,

installation of insulation with an over-quilt of non-breathable membrane between the rafters and the floor of the loft.	because the floor is covered by close-fitted wooden floor boards.
The loft will be fully lined with rough wooden planking.	Implemented.
A Devi mat or a dry mount system will be installed at the east end of the barn.	Implemented. We have been advised that a Devi mat would be a fire risk in such a confined space. A shrouded heating element has been recommended by a qualified electrician as a safer method of heating the bat loft.
Two plywood baffles will be fixed in the western end to increase the air temperature.	Implemented.
A thermal data logger will be installed to monitor the temperature of the roost.	Implemented. A data logger had been placed at the entrance to the loft. This appears to be working. A print out is shown in Appendix B.
Old timbers from the original bat roost will be used.	Not seen.
A none-breathable membrane will be installed.	Presumed to be present beneath the floor boards.
Insulation will be pared back around the bat access points to avoid blocking access.	This could not be seen.
Habibat bat access slates will be installed into the roof, one on the northern pitch and the other on the southern pitch.	Implemented.
Small gaps have been left in the mortar to allow bats into the wall cavity.	Implemented. Two T-shaped holes have been created. There was no evidence that they were being used.
Turnstile entrance installed.	Only the exterior was seen.
External illumination of car port.	There are two small roof lights in the ceiling of the car port and a pedestrian light near the access door. This has a baffle fitted to throw prevent any light from shining above the horizontal axis (see Photograph 1).
Timing	The bat loft was renovated in August 2017.
Maintenance and monitoring program.	The local bat group has confirmed that they are interested in carrying out the monitoring. We have a copy of the e-mail confirming this.

Table 1: Audit of compliance with Method Statement

4 CONCLUSIONS

- 4.1.1 The great majority of the recommendations in Sambrook Associates' Bat Mitigation Strategy appeared to have been implemented. Most of the non-compliances are relatively minor and should not prevent bats from occupying the building.
- 4.1.2 The client is still negotiating the terms of the local bat group's involvement in the project.
- 4.1.3 Future inspections will need to be carried out by a suitably licensed ecologist once bats have occupied the building.

5 RECOMMENDATIONS

- 5.1.1 The site should be checked in November to determine whether the thermostat and heater are maintaining the correct temperature. The thermostat is currently set at +5°C to ensure that the loft remains frost free.
- 5.1.2 The first monitoring inspection is scheduled for June 2018. We recommend that a static bat detector should be left in the loft at the beginning of December 2017 for one week to determine whether it is being used by bats. It may be possible to modify the structure or management if bats are failing to use it. The data logger should be checked at the same time to ensure that the correct minimum temperature is being maintained.
- 5.1.3 A more substantial hatch should be installed for the loft entrance. This should be done before bats occupy the loft.

6 REFERENCES

Collins, J. (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines*. Third Edition. Bat Conservation Trust.

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Russ, J. (2012). *British Bat Calls. A Guide to Species Identification*. Pelagic Publishing.

Sambrook Associates Ltd. (2017). *Bat Mitigation Strategy. Cornish Hall Barns, Holt*.

APPENDIX A: PHOTOGRAPHS



Photograph 1: Approximately 75% of the building is occupied by the car port.



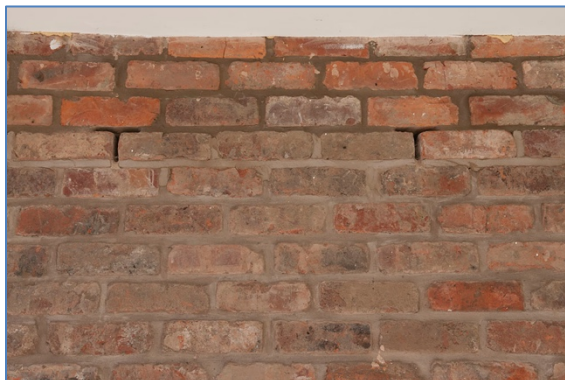
Photograph 2: The car port is situated beside the stream.



Photograph 3: A Habitat entrance had been placed on the western side of the roof.



Photograph 4: There is also an entrance on the northern side of the roof.



Photograph 5: Two T-shaped slots have been left to allow crevice-living species to gain access.



Photograph 6: Access is controlled by a separate padlock.



Photograph 7: There was no evidence that bats are currently using the loft.



Photograph 8: The data-logger appears to be working correctly.



Photograph 9: The heater has a separate thermostatic control.



Photograph 10: The heater also appears to be functioning correctly.

APPENDIX B: PRINT OUT FROM DATA LOGGER

