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Old Castle Lodge Barn
Wilton, Ross-on-Wye
Bat Activity Survey

July 2010

MPEcology

Contents

Cover photograph: View of barn from south-east.

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1. Introduction

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Background

This report has been prepared by MPEcology for Phil Quinn (Ecology and land use) on behalf of Bernard Eacock Chartered Town Planning Consultant. The report provides the results of bat activity surveys at a barn adjacent to the Castle Lodge Hotel, Wilton, Ross-on-Wye, Herefordshire.

The barn, located immediately south of the A40 near the Wilton Roundabout lies at National Grid Reference SO588244.

The objective of the survey was to establish whether site re-development would have any impact upon bats or their roosts after an initial inspection of the building failed to rule out the possibility of bats[1].

Legislation applicable to Bats

All species of bat and their roosts are protected under United Kingdom law by the Wildlife and Countryside Act 1981 (as amended), and in addition are classified as European Protected Species (EPS) under The Conservation of Habitats and Species Regulations 2010. This makes it an offence to kill, injure or disturb a bat and to destroy any place used for rest or shelter by a bat.

Development works that affect a bat roost can only be permitted under a licence from Natural England (NE). Development licences in respect of European Protected Species can be granted under Regulation 53(2)(e) of the Conservation of Habitats and Species Regulations 2010 for:

- The purpose of preserving public health or public safety or other imperative reasons of overriding public interest including those of social or economic nature and beneficial consequences of primary importance for the environment.

In addition, development related licences can only be issued if Natural England is satisfied that:

- There is no satisfactory alternative to the specified works, and;
- The authorised action will not be detrimental to the maintenance of the population of the species at a favourable conservation status in their natural range.

The requirements set out above are informally known as "the three tests".

[1] **Phil Quinn (Ecology and land use)(2010).** *Barn Adjacent to Castle Lodge Hotel, Wilton – Bat Survey - . June 2010.* An unpublished report on behalf of Bernard Eacock, Chartered Town Planning Consultant.

2. Methodology

Emergence surveys

Two emergence surveys were carried out, one on the 8th July 2010 and a second on the 14th July 2010. Both visits were carried out by two surveyors, positioned at vantage points maximising view of the barn and in particular, targeting features that could be utilised by bats as roost access points. Surveys started before dusk and continued for approximately two hours after dusk.

On the 14th July 2010, in addition to the surveyors three static video cameras equipped with infra-red floodlights were stationed separately in order to observe the interior of the barn and a potential emergence point from it immediately adjacent to the A40.

Surveyors used Pettersson D240x (Petterson Elektronic, Sweden) time expansion bat detectors with Sony minidisk recorders. All bat calls recorded were analysed using Batsound Software.

The first visit was undertaken by Matthew Pickard MSc MIEEM CEnv with assistance from Jo Pickard MSc MIEEM. Eric Palmer MSc MIEEM CEnv, a Natural England licensed bat worker (No. 20093078) assisted with the second visit, not least in the provision of video recording equipment.

Dawn surveys

Dawn surveys, to determine whether or not bats re-entered any of the buildings, were carried out on the 9th and 15th July 2010. All equipment used during the emergence surveys was re-used for the dawn surveys.

Two additional dawn survey visits were carried out on the 17th and 18th July 2010 using static video cameras to investigate use by bats of particular locations within the interior of the barn.

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3. Results

Survey Findings

Appendix I provides a site layout, target notes and photographs illustrating findings.

Bat emergence 8th July 2010

No bats were observed to emerge from the barn for the duration of the survey (2.5 hours).

A high level of bat activity was observed to the east of the barn, consisting of passes by commuting soprano pipistrelle bats (*Pipistrellus pygmaeus*). The direction of flight of the bats suggested emergence from a location south of the site, in all likelihood from a roost immediately south of the Castle Lodge Hotel.

During the lighter period of early evening, probably exacerbated by the flood-lit exterior of the hotel, bats appeared to favour a commuting route following a Leyland Cypress hedge to a sheltered area immediately east of the barn. The shelter, formed by mature trees adjacent to the A40 and eastern side of the barn itself, appeared to be favoured by foraging soprano pipistrelle bats prior to movement across the A40.

The first bat recorded was a soprano pipistrelle at 2148hrs. Between 2148hrs and 2224hrs approximately 28 bats commuted through the area to the east of the barn. A noctule (*Nyctalus noctula*) was also recorded high above the barn at 2244hrs.

The only bat activity directly associated with the barn was that of a long-eared bat, almost certainly brown long-eared bat (*Plecotus auritus*), recorded flying within the barn at 2252hrs.

The weather conditions during the emergence survey were considered suitable for bat activity. At dusk after a very hot day, a temperature of 21.5°C was recorded with 95% cloud cover and only a very slight breeze. By the end of survey temperatures had dropped to 18°C.

Dawn survey 9th July 2010

No bats were seen to enter any features associated with the barn at the end of the night although a long-eared bat was recorded from inside the barn at 0425hrs.

The last bat detected was a soprano pipistrelle at 0439hrs. The bat had been observed foraging within the sheltered area to the east of the barn for 15 minutes prior to suddenly departing to the south.

The weather conditions at the time of the dawn survey were considered suitable for bat activity, being 14°C, dry, with 10% cloud cover and no wind.

Bat emergence 14th July 2010

No bats were observed to emerge from the barn for the duration of the survey (2.5 hours) although one of the video cameras recorded a bat flying within the barn at 2145hrs.

The first bat recorded during the survey was a soprano pipistrelle at 2139hrs. Between 2139hrs and 2220hrs approximately 12 bats commuted through the area to the east of the barn. Noctule (*Nyctalus noctula*) bats were frequently recorded and observed flying high above the barn.

The weather conditions during the emergence survey were considered suitable but not optimal for bat activity. At dusk a temperature of 18°C was recorded with 85% relative humidity, 80% cloud cover and a light southerly breeze. By the end of the survey temperatures had dropped to 16°C with a relative humidity of 90%, 100% cloud cover, a strong south-westerly wind and intermittent rain.

Dawn survey 15th July 2010

No bats were seen to enter any features associated with the barn at the end of the night. However, bats were recorded by video camera flying inside the barn at 0332hrs, 0402hrs and between 0425hrs and 0428hrs.

A suspected long-eared bat was observed flying across the lane and along the south-eastside of the barn at 0425hrs. The last bat detected was a soprano pipistrelle at 0458hrs. The bat had been observed foraging within the sheltered area to the east of the barn for 6 minutes prior to suddenly departing to the south.

The weather conditions at the time of the dawn survey were considered suitable but not optimal for bat activity, being 15.5°C, with 100% cloud cover, 80-90% relative humidity, moderate south-westerly wind and intermittent light showers.

Targeted Dawn survey 17th July 2010

A bat was recorded re-entering a roost beneath ridge tiles in the barn at 0411hrs. A further bat(s) was recorded by video camera flying inside the barn between 0415hrs and 0431hrs but a roost location was not detected.

Weather conditions at the time of survey were dry, 14°C, with 100% cloud cover and a light wind.

Targeted Dawn survey 18th July 2010

A bat was recorded at 0433hrs re-entering a different roost beneath ridge tiles to that noted the previous day. A further bat (but possibly two) was recorded by video camera flying inside the barn between 0433hrs and 0441hrs but a roost location was not detected. Both the bat re-entering its roost and subsequent bat appeared to investigate the ridgeline at the northern-most end of the barn. Towards the end of the morning a bat was observed to briefly exit the barn and then re-enter via the section of collapsed roof. This particular bat appeared to favour the ridgeline at the southern end of the barn and sound analysis suggested a species of *Myotis*.

Weather conditions at the time of survey were dry, 16°C, with 100% cloud cover and a light wind.

4. Assessment

Baseline

The Castle Lodge barn appears to support a small number of roosting bats probably consisting of one or possibly two male brown long-eared bats and/or a species of *Myotis*. The bats appear to occupy gaps and crevices associated with the ridge tiles which are accessed from inside the barn.

Access points into the barn are many and include a large hole in the roof as well as an open door and ventilation slits in the stonework at all sides of the barn.

In its current state the barn is not considered suitable for storage of materials or animals due to the danger of further roof collapses. Although the structure provides proven roosting opportunities for bats, this value is likely to decrease over time without roof repairs.

Habitat associated with the barn appears to be actively used by bats, particularly commuting soprano pipistrelle bats.

Potential impact of future development

The most likely impacts of development would be loss of roosting opportunities through re-roofing activities and obstruction of access to roosts through construction of doors and window fittings. Wider impact may also result through light spill of internal domestic or external security lighting.

5. Recommendations

Given the presence of roosting bats, it appears likely that a European Protected Species licence application will be required in order to develop the site. For such an application to be successful detailed mitigation accommodating bats will need to be considered and incorporated into the final project design.

In particular the project design and licence application will have to satisfy the three tests of the Conservation of Habitats and Species Regulations 2010:

1) *Purposes of preserving public health or public safety or other imperative reasons of overriding public interest including those of social or economic nature and beneficial consequences of primary importance for the environment.*

Progressive deterioration of the barn in its current state would be to the detriment of the owners and to bats. Sympathetic development of the barn including roof repair may result in the short-term loss of a roost but would ultimately result in longer-term security of roosting opportunities where access points to dedicated roof voids are created.

2) *There is no satisfactory alternative to the work specification.*

Retention of all current access points would prevent use of the building by people, particularly as one of the access points is a collapsed section of existing roof.

3) *The action authorised will not be detrimental to the maintenance of the population of the species at a favourable conservation status in their natural range.*

Roof repairs will ultimately retain the potential for roosting bats albeit with modified access points. In addition, careful consideration and implementation of lighting plans to avoid light spill to the east of the property would avoid impact to the commuting routes of other bat species, particularly soprano pipistrelle bats.

Other requirements to safeguard bats would include careful timing of works and targeted ecological supervision particularly when existing tiles are removed from the building.

6. References

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Bat Conservation Trust (2000) *Distribution Atlas of Bats in Britain and Ireland 1980-1999*. Bat Conservation Trust, London.

Bat Conservation Trust (2007) *Bat Surveys – Good Practice Guidelines*. Bat Conservation Trust, London.

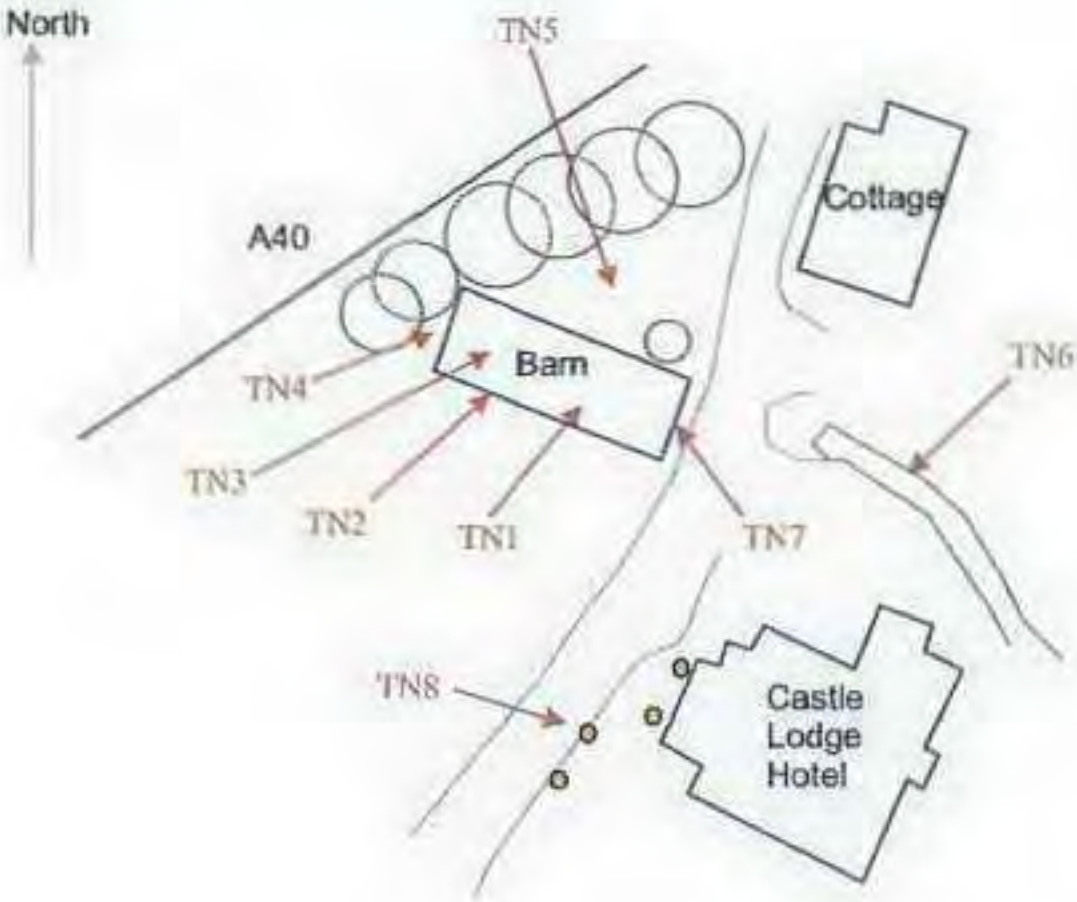
English Nature (2004). *Reptiles: Guidelines for Developers*. Peterborough.

Mitchell-Jones, A.J. & McLeish, A.P. (2004). *The Bat Workers' Manual*. Peterborough JNCC.

Mitchell-Jones (2004). *Bat Mitigation Guidelines*. English Nature.

Appendix I: Site Layout, Target Notes and Photographs

Figure 1: Site Layout and Target Notes



Key

TN1	Target Note
o	Flood lights
◯	Tree
⌒	Leyland cypress boundary hedgerow

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Target Notes with photographs

1. Partially collapsed roof allowing access into the interior of the barn but creating greater levels of illumination during daylight hours. A *Myotis* sp. of bat was observed entering and exiting the barn through the open roof at dawn on the 18th July 2010.

2. An open door immediately adjacent to the hole in the roof, in addition to ventilation slits in the barn walls, allows alternative access point into the barn for bats. Holes and crevices in the roof provide alternative but less obvious potentially entry points to the barn.

3. Ivy obscures some potential access points including northern parts of the barns gable end although gaps at the apex provide other features with potential for bats. Below canopy level ventilation slits provide alternative access points.

4. Gaps beneath the ridge tiles provide bat roosts at two locations along the barns northern ridge. Bats were also observed by video camera flying up to the apex at the gable end. It is likely roosts are present towards the southern gable also.

5. An area partially enclosed by trees growing on the embankment of the A40 provides a sheltered area on the north-eastern side of the barn. The area is actively used by commuting and foraging soprano pipistrelle bats.

6. A Leyland cypress hedgeline to the south of the barn appears to be used by commuting bats.

7. The southern gable end is clear of vegetation and potential access is provided by ventilation slits in the barns structure.

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Appendix II: Site Plans Illustrating Bat Activity

Figure 2: Illustrating Typical Dusk Movement of Soprano Pipistrelle Bats

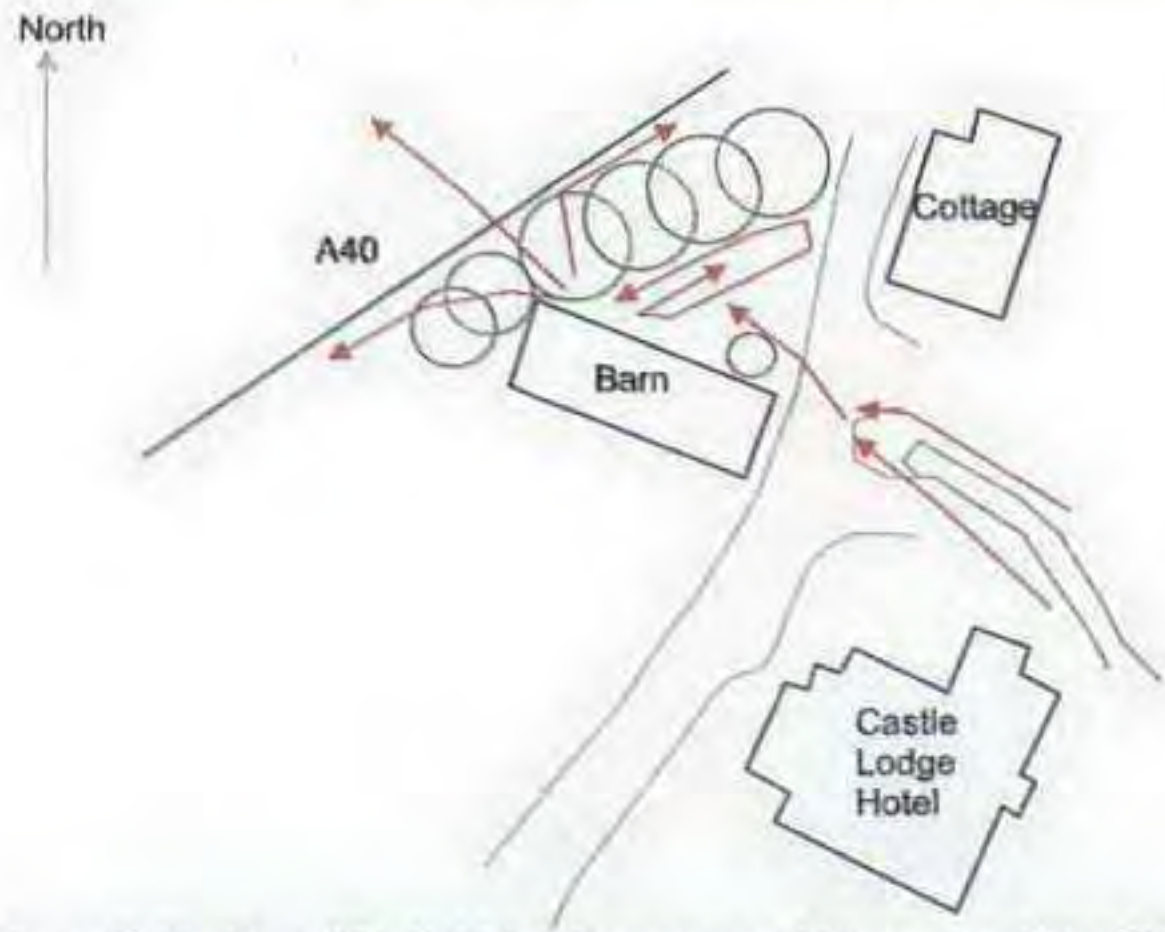
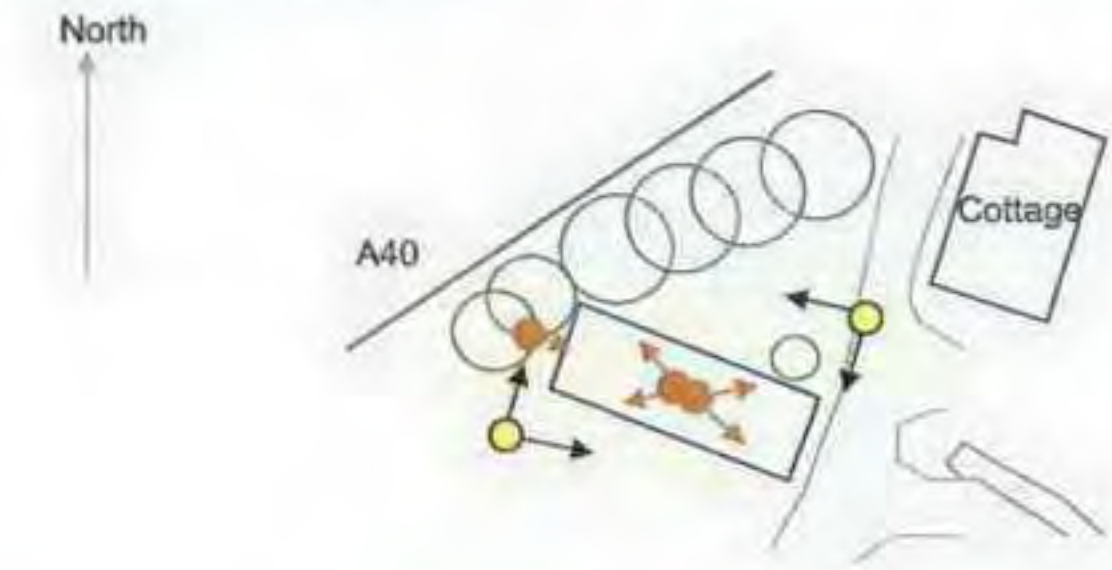


Figure 3: Position of Static Video Cameras and Surveyors during Site Visits (8th/9th July and 14th/15th July 2010)



Position of night-vision cameras (14th/15th July 2010). Arrows indicate field of view.

Position of surveyors for emergence and dawn surveys.

Figure 4: Position of Static Video Cameras during Dawn Site Visit of 17th July 2010

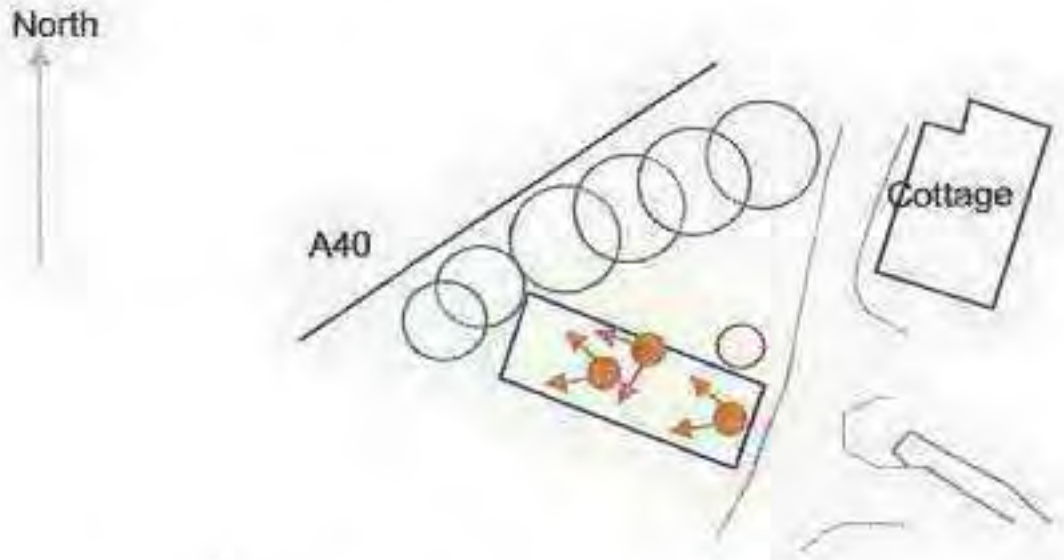


Figure 5: Position of Static Video Cameras during Dawn Site Visit of 18th July 2010