

Field Survey Report:

Inspection of Loft Space for Indications of Bat Occupancy The Warren, 8 Carbone Hill, EN6 4PL

1. Introduction

Physalia Ltd was contacted by Mr Ian Cooper of the above address regarding the possible use of a roof and associated loft space by bats. Mr Cooper intends to submit a planning application for the construction of a two story extension to his property. He was advised by the planning authority that, before the application could be considered, an assessment of the building would be required to assess the suitability of the current building for bat use and to determine whether bats currently, or have in the past, used the building for roosting, breeding or hibernation purposes.

Relevant Wildlife Legislation

Wildlife and Countryside Act 1981 (as amended)

Rare and scarce habitats and species are afforded varying levels of protection under the Wildlife and Countryside Act 1981 (as amended) (hereafter "WCA 1981"). All UK species of bats are listed under Schedule 9 of the WCA 1981 which makes it an offence to:

- Intentionally kill, injure or take a bat
- Possess or control any live or dead specimen or anything derived from a bat
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a bat
- Intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for that purpose

Conservation (Natural Habitats &c.) Regulations 1994 (the Habitats Regulations)

The Habitat Regulations provide for the designation and protection of 'European sites', the protection of 'European protected species' (EPS), and the adaptation of planning and other controls for the protection of European Sites. Under these regulation it is an offence to:

- Deliberately capture or kill a bat
- Deliberately disturb a bat
- Damage or destroy a breeding site or resting place of a bat
- Keep, transport, sell or exchange, or offer for sale or exchange a live or dead bat or any part of a bat

Natural Environment and Rural Communities Act 2006 (as amended)

Section 40 states that every public body must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity. Conserving biodiversity includes restoring or enhancing a population or habitat. Habitats and species of principal importance are listed under Section 41 of NERC Act 2006 (previously they were listed under Section 74 of the Countryside and Rights of Way Act 2000). Five species of British bats are listed on the most recent update (August 2010) of Section 41.

Proposed Building Works

It is understood that a two storey extension to the front of The Warren is proposed. This will involve the construction of an additional pitched roof beside the existing roof. The existing roof and the loft space within will remain largely intact. It is anticipated that the temporary removal of the lower section of materials (tiles and felting) from the front elevation of the existing roofing will be required in order to "tie-in" the new roof structure.

Aims of the Building Inspection

The aims of the building inspection and subsequent field report are to:

- assess the sections of building that are likely to be removed, modified or disturbed for their suitability as a resource for bat populations;
- inspect the interior of the sections of building that are likely to be removed, modified or disturbed for evidence of current or former use by bats
- in the light of the above, assess the building in terms its value as a resource for bats
- suggest any mitigation or enhancement measures that would be appropriate to (i) avoid transgression of wildlife law, and (ii) ensure the resources available to bat population are maintained or enhanced following the proposed building works.

2. Building Inspection Methods

The external and internal building inspection was undertaken following the methods outlined in Mitchell-Jones (2004), Mitchell-Jones and McLeish (2004) and Hundt (2012).

The following methods were used:

- With the aid of binoculars, the exterior of the building was inspected for the presence of potential access/egress points;

- All walls (interior and exterior) and flat surfaces were checked for the presence of bats, bat droppings, urine staining and/or feeding remains (e.g. butterfly and moth wings);
- All potential roosting sites and cavities within the loft cavity were checked using a high powered torch;
- Accumulations of bat droppings and feeding remains were mapped.

During the interior inspection of the loft cavity, a Tranquility II bat detector set to time expansion mode was used to detect any inaudible ultrasonic bat calls that may have resulted from bats being disturbed during the survey.

3. Results

The site visit and inspection was undertaken by Dr Simon Forster on 24th February 2014. The weather was sunny and very warm for the time of year. The field notes are appended to this report and the inspection findings are summarised below.

3.1 Exterior Inspection of Building

The gable ends, soffits and eaves of the property appeared, from external inspection, to be well sealed and did not offer either direct roosting opportunities for bat or access to the roof cavity.

The roof itself was constructed from clay nib tiles with clay ridge tiles at the apex. A number of tiles were broken with a few being missing. Where tiles were broken, missing or raised they provided gaps that were suitable for temporary roosting for bats. The gaps between and under the tiles also enabled access to the loft cavity (see below). Similarly, a number of ridge tile had degraded cement mortar which could, potentially, allow access to bats, providing temporary summer roost resources.

3.2 Interior Inspection of Loft Cavity

The roof was constructed of a timber frame with clay nib tiles over a bitumen felt liner. Within the loft cavity the timbers were exposed. The felt was, in places, loose and/or damaged and here provided potential access points by which bats could enter the building. The loft floor was insulated with 200 mm of glass fibre wool with an insulation board walkway along the middle loft.

A careful inspection of the loft revealed no bats and no audible or ultrasonic bat calls or "chattering" were detected.

A number of droppings were observed. On-site inspection of these indicated that some were bat droppings whilst the majority were mouse droppings. These

observations were confirmed by microscopical examination of the dropping upon return to the laboratory.

The bat droppings were few in number and sparsely distributed. No accumulations of dropping were observed. Furthermore, none of the droppings were fresh.

The results indicate that that, in the past, bats have accessed the loft space of The Warren. However, given the very low numbers of dropping present and their sparse distribution (no accumulations of droppings), the loft has not been used as a maternity roost and has not been used regularly as a summer roost. The findings indicate that the loft cavity provides an occasional, temporary summer roost.

3.3 Surrounding Habitat

The area surrounding The Warren provides plenty of roosting resources for bats. Many of the houses in the vicinity are of similar age to The Warren and are likely to provide similar roost facilities. In addition, there are numerous mature trees in the area which again, can provide suitable summer roosting resources.

4. Discussion and Mitigation

4.1 The Value of the Roof and Loft Cavity for Bat Populations

In common with all clay tiled roofs, the tiles present on The Warren roof provides a **potential summer roost resource** for bats. Species such as Pipistrelles (*Pipistrellus pipistrellus* and *P. pygmaeus*) are known to roost under tiles during the daytime of summer months. Whether the roof of The Warren is used for summer roost purposes could not be determined during the present inspection.

The internal inspection of the loft cavity indicated that bats had entered the building in the past. The number and distribution of droppings indicated that:

- the loft was not used as either a maternity roost or a winter hibernation roost;
- the loft cavity was not used on a regular basis as a summer (day) roost;
- the loft cavity was used as an **occasional summer (day) roost**.

In the light of the above and with reference to the *Bat Mitigation Guidelines* (Mitchell-Jones, 2004) the conservation significance of the roof and loft cavity of The Warren should be considered low.

4.2 Potential Impact of Building Works

It is the understanding of the author that the proposed works to The Warren will involve the construction of a two storey extension with a pitched tile roof on the

front of the house. The extension roof will be separate to the existing pitched roof, which will remain intact and unaltered after the works are completed. It is expected that the lower section of the existing front elevation of the roof will be temporarily disturbed and that the roof materials (tiles and felt) will need to be removed to enable the new roof to be tied in.

The impact of the works on the existing roof cavity and the occasional summer bat roost therein will be **temporary disturbance**. Similarly, the existing tiled roof is considered a *potential* summer roost site and will be subject to **temporary disturbance**. Upon completion of the works, the existing roof and loft cavity, and, therefore, roost resources for bats will be unaltered.

The proposed extension will involve the construction of an additional pitched, tiled roof. Assuming that the tiles selected match the existing tiles, they also will be suitable for cryptic-roosting species such as Pipistrelles. As such, the new roof will provide **additional roost resources for the local bat populations** and the works will provide a **residual net benefit** for the local bat populations.

4.3 Mitigation

The inspection demonstrated that it is likely that the existing roof cavity is an occasional summer day roost and that the existing tiled roof is a potential summer day roost. It is highly unlikely that bats will be present during the winter and, therefore, disturbance during this time of year will not affect bats and will need no mitigation. Mitchell-Jones (2004) states that the optimum time to undertake works on summer (not maternity) roosts is during the period **1st September to 1st May**.

It is understood, however, that the work on The Warren needs to be commenced before September. In this case, a number of precautionary and mitigation measures will need to be instigated to prevent any unintentional breach of wildlife legislation.

- Prior to the commencement of the work, it is recommended that two bat boxes are installed under the eaves of the adjacent garage building. These will **provide additional roosting resources and mitigate the temporary disturbance of the existing roof and loft cavity**.
- Immediately prior to any works on the existing roof or loft cavity being undertaken, a detailed inspection of the loft should be carried out to ensure that no bats are currently utilising the loft cavity as a day roost. **If bats are found within the loft cavity, work on the roof shall cease until the bats have left of their own accord.**
- The removal of roofing materials from the front elevation of the existing roof shall be undertaken in a methodical manner with each tile being removed carefully by hand. If at any point during the removal of tiles or felt cladding, bats are encountered, **they should be left overnight to allow them to**

move by their own volition. Any areas where bats were present would then be inspected the following day prior to continuation of the roof stripping.

Given (i) the abundance of alternative summer roost sites in the vicinity of The Warren, (ii) the low conservational significance of the loft cavity and roof structure and (iii) the above precautionary and mitigation measures, it is suggested that a European Protected Species Mitigation (EPSM) Licence is not required prior to commencement of the extension works. However, **under no circumstances should bats be handled or intentionally disturbed unless an appropriate EPSM licence is obtained.**

5. Summary

- The inspection of The Warren identified the loft cavity as an occasional summer (non-maternity) roost for bats of indeterminate species and the existing roof as a potential summer roost. In the light of the surrounding area and the available local resources, these features were considered of low conservation significance.
- The proposed extension to The Warren will cause **a temporary disturbance to the loft cavity and roof.** As the existing roof and loft cavity is to remain largely unaltered following completion of the works, there will be no long term impact of the works on the current bat resources.
- Mitigation should either involve undertaking the works during the period 1st September to 1st May, or follow the precautionary measures and mitigation outlined in Section 4.3 above.
- The extension will provide additional tiled roof and associated loft cavity. Consequently, the extension will represent **a residual net benefit** for the local bat population in terms of roost resources.

6. References

Hundt, L. (2012). *Bat Surveys: Good Practice Guidelines, 2nd edition*. Bat Conservation Trust

Mitchell-Jones, A.J. (2004) *Bat mitigation guidelines*. English Nature publication

Mitchell-Jones, A.J. and McLeish, A.P. (2004) *Bat workers manual, 3rd Edition*. JNCC.

English Nature (2002). *Bats in roofs, a guide for surveyors*. English Nature, Peterborough. pp. 4