BAT EMERGENCE & REMOTE MONITORING SURVEY REPORT

3 LEIGH CROSS, NR ZEAL MONACHORUM

for

MR T MENDUS-EDWARDS

May 2022

Lee Ecology
Leigh Cottage
East Leigh, Crediton
Devon, EX17 6LJ
Email: info@leeecology.com

Lee Ecology

CONTRACT SHEET

3 Leigh Cross, Nr Zeal Monachorum

Mr T Mendus-Edwards

Bat Emergence & Remote Monitoring Survey Report

Contract No.	Project Contact/Author	Issue No.	Date of Issue
00LE597	Tamsin Lee Ecological Consultant	01	25 May 2022

Disclaimer

Please Note that all reasonable care and attention is made by Lee Ecology to produce reports and advice to a high, professional standard. However, no responsibility is accepted for any consequences howsoever caused, by the release of this report to third parties.

Lee Ecology

TABLE OF CONTENTS

1. SUMMARY OF RESULTS & RECOMMENDATIONS

1.1 Results

1. The proposal includes extending the property by constructing a two-storey extension on the northern elevation. A preliminary daytime bat survey was commissioned to accompany the planning application for this proposal. The survey site is centred on Ordnance Survey National Grid Reference SS 699 047.

2. A daytime preliminary bat survey was undertaken by an experienced and appropriately licensed ecologist from Lee Ecology on 09 November 2021. Weather conditions at the time of survey were dry, calm and overcast with an average ambient temperature of 12^0C. For a full site description please refer to the Preliminary Bat Survey Report (Lee Ecology, 2021).

3. Following the recommendations of the preliminary assessment report a dusk emergence survey of the property was undertaken on 09 and 24 May 2022 by two surveyors. In addition, an Anabat Express recorder was placed within the roof void and was set to record continuously. A check of the roof void was undertaken during the installation/retrieval of the Anabat Express; no bats were observed within the roof void space.

4. Six common pipistrelle bats emerged during the first emergence survey on 09 May 2022. Seventeen common pipistrelles emerged during the second emergence survey on 24 May 2022. The bats emerged from the eastern gable end wall, near to the chimney. It is likely that the bats are roosting in the space between the roof slates and the felt lining.

5. No activity was recorded during the remote monitoring period.

6. General bat activity (foraging and flight passes) by common pipistrelle and noctule was recorded during the first emergence survey. General activity was much reduced during the course of the second emergence survey.

7. No formal external lighting scheme is proposed.

8. An active house martin nest was noted on the southern elevation (eaves level).

1.2 Recommendations

The following recommendations are made to ensure compliance with wildlife legislation (e.g. the Wildlife and Countryside Act 1981 as amended, the Conservation of Habitats & Species Regulations 2010), biodiversity legislation (e.g. the Natural Environment and Rural Communities Act 2006), government guidance and best practice (e.g. UK Biodiversity Action Plan).

1. The results gathered to date indicate that the space between the roof slates and roof lining is used by a summer day roost used by common pipistrelle. Based on the numbers recorded to date it is considered reasonably unlikely that a maternity roost is present (pipistrelles often form relatively large maternity roosts). The conservation status of the roost is considered to be **low** according to current guidelines (Mitchell-Jones, 2004).

2. All bats are legally protected against intentional/deliberate capture, selling/bartering, injury and death. In addition, their roosts (defined as a place of rest/shelter/protection) are protected against deliberate/intentional damage, destruction and obstruction of access. Bat roosts are protected even if bats are not present at the time.

3. In the absence of mitigation the potential impacts to roosting bats include destruction of a low status roost (if the gable ends are sealed), disturbance (through noise, vibration, light etc) and possible injury/death (through works). Based on current information the scale of impact is considered to be low on the parish/local scale, with regard to population viability.

4. A bat mitigation licence will not be required if the following apply:

- No significant changes are undertaken to the existing roof (excluding tying in of the new roof);
- The existing exit point is retained at the eastern gable end wall;
- The works are undertaken outside of the main bat activity season (.e. May – September) to minimise the risk of disturbance.

5. A bat mitigation (development) licence will be required from Natural England in order to permit the works to proceed if the above cannot be achieved. Natural England will only grant a licence once the following tests and actions have been achieved:
    - Full planning permission must be in place and all relevant Conditions (i.e. relating to wildlife) discharged, if applicable;
    - The development must demonstrate that it is required for reasons of 'over-riding public interest' (e.g. for social or economic purposes, such as housing);
    - There must be 'no satisfactory alternative' to the development proposals as submitted and;
    - The proposals must not be detrimental to the 'favourable conservation status' of the species affected (due to the very low status of the roost the proposed works will not be detrimental to the conservation status of this species). Please note that bats should not be allowed to come into contact with breathable roofing membranes due to risk of entanglement. Only traditional felt lining or timber sarking is currently accepted by Natural England for use in bat roosts.
6. No development work should take place in proximity to an active bird's nest (if applicable at time of works). Ideally works should be undertaken outside of the bird nesting season (recognised as generally being between March-August inclusive). The site should be checked by a suitably qualified ecologist

immediately prior to works commencing if there is any doubt as to the status of nesting birds on site. The ecologist will be able to identify any nesting birds and advise of appropriate safe working distances. Nests are deemed inactive once the young have fully fledged and there is no sign of adults bringing nesting material/food to the nest or sitting on eggs.

7. The results of this survey (on a standalone basis) are deemed to be valid for 12 months from date of issue. If development works are to be carried out after this time has elapsed an update check will be required to ascertain the site's current status (i.e. change in habitats, condition of buildings, species present etc.). Please be aware that, because the natural environment is dynamic, ecological reports generally have a limited period of validity. Many statutory authorities now regard one year as the maximum time that should elapse before a report will need to be updated (this time period may vary depending on the Local Planning Authority in question).

2. INTRODUCTION

2.1 Scheme Background

The client proposes to extend the property by constructing a two-storey extension. This bat survey has been commissioned to provide supporting information on the possible presence of protected species at the site and direct appropriate further works including additional surveys, mitigation, compensation and licensing if required.

2.2 Survey Objectives & Limitations

The objectives of the survey were:

1. to carry out a bat survey of the site in order to determine the possible presence of these species in relation to planning requirements;
2. to provide a concise written report of the results, making any appropriate recommendations to ensure compliance with wildlife law and recognised best practice.

The emergence surveys were undertaken during the appropriate survey season.

3. METHODS

3.1 Dusk Emergence Survey

The emergence surveys were conducted using hand-held Echo Meter Touch and BatBox Duet bat detectors. The areas of the building highlighted as having the potential to support roosting bats were observed for the duration of the survey, in order to record the emergence of any bats. Surveys commenced fifteen minutes before sunset and continued for at least one hour after sunset.

The following personnel were present on the dusk surveys:
Tamsin Lee (licence no. 2015-13745-CLS-CLS) and David Lee (experienced assistant).

3.2 Remote Monitoring Survey

An Anabat Express recorder was installed within the roof void on 09 May 2022 and was scheduled to record continuously to pick up day and night roosting activity. The Anabat Express was collected from the property shortly before the emergence survey on 24 May 2022.

4. RESULTS

The dusk emergence bat surveys were undertaken using Echo Meter Touch and Batbox Duet bat detectors with time expansion/heterodyne/frequency division functions and recording capabilities.

Table 1: Weather conditions during dusk surveys at 3 Leigh Cross

Date	***Weather Conditions***	***Temperature***
09 May 2022	Dry, light breeze, 75% cloud cover	14°C start, 13°C end
24 May 2022	Dry, 25% cloud cover, light breeze	12°C start, 10°C end

Table 2: Sunset and survey times

Date	***Sunset***	***Survey Times***
09 May 2022	Sunset: 20:48	Start: 20:30 End: 22:00
24 May 2022	Sunset: 21:10	Start: 20:50 End: 22:20

<u>09 May 2022</u>

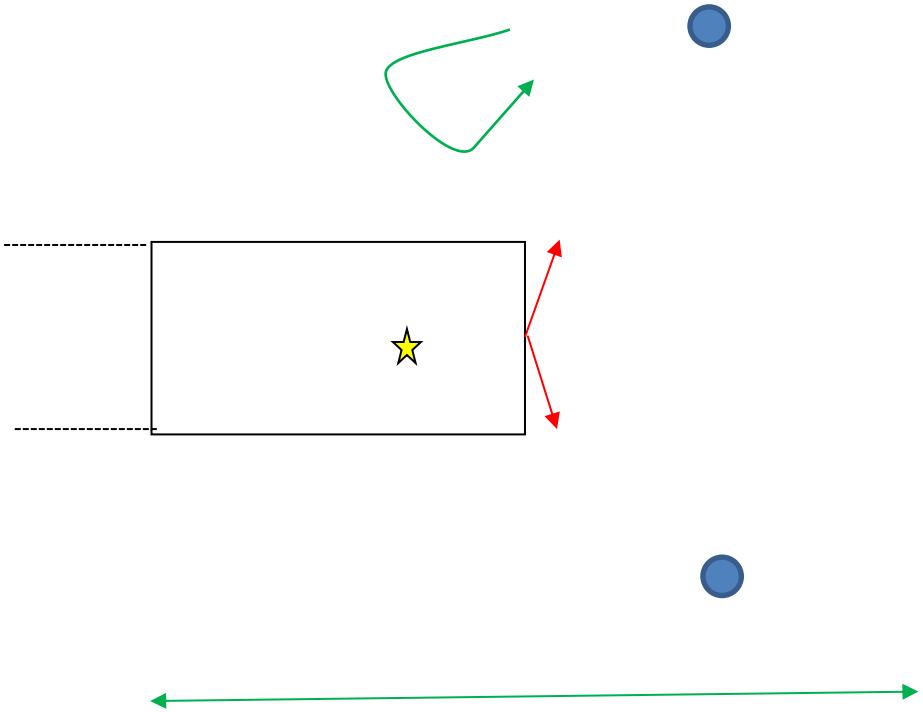
The first bat recorded during the survey was a noctule at 20:44 (heard flying overhead, not seen). Six common pipistrelle bats **emerged** from the eastern gable end wall (near the chimney) between 21:10 and 21:20 – all bats emerging flew in a northern direction upon emergence.

Foraging activity was recorded intermittently during the survey by common pipistrelle. Activity was predominantly based along the hedgerow bounding the minor road, south of the property.

24 May 2022

The first bat activity during the survey was a common pipistrelle observed **emerging** from the eastern gable end wall at 21:20. The bat emerged from under a slate at the gable end where some mortar was noted missing. A further sixteen common pipistrelle bats emerged from the same spot between 21:24 and 21:38. The emerging bats predominantly flew to the north with a small number flying south upon emergence. A single noctule pass was heard overhead (not seen) at 21:33. General bat activity (i.e. foraging and or commuting/passing) was very low.

4.1 Survey Plan



KEY

- Approximate surveyor position
- Emerging common pipistrelles
- General bat activity (passes, foraging behaviour etc.)
- Location of Anabat Express recorder (in roof void)

N

NOT TO SCALE

4.2 Automated Survey

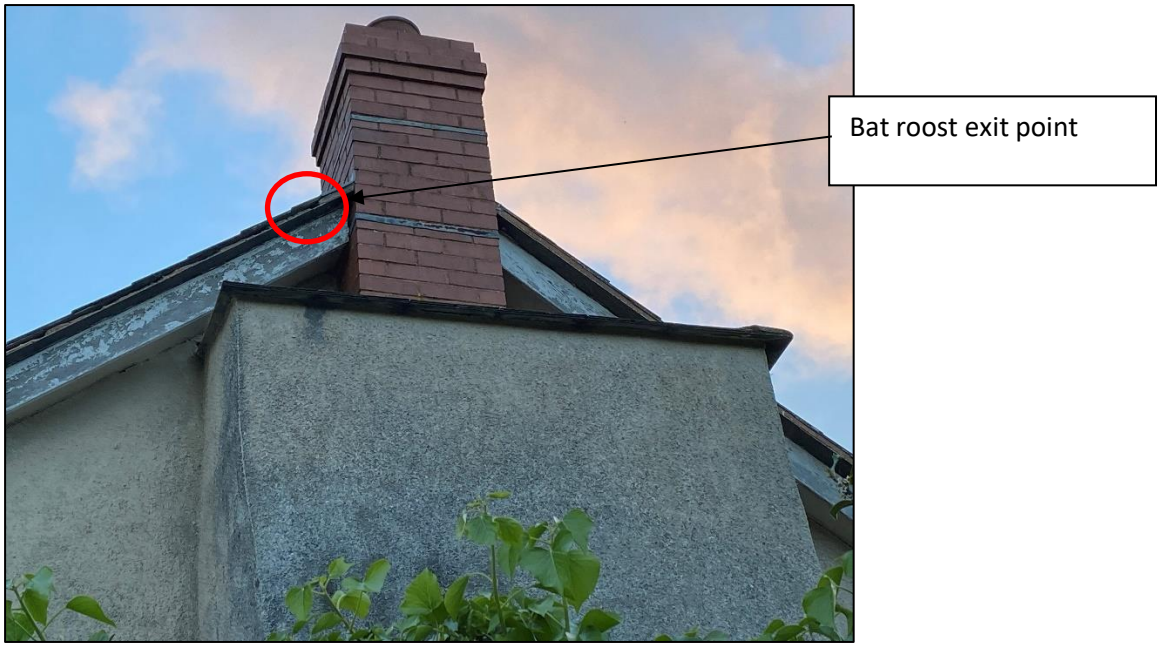
A remote detector [Anabat Express] was placed within the roof void on 09 May 2022 and was set to record continuously. The detector was collected on 24 May 2022. The loft void was checked for bats upon installation/collection of the recorder; no bats were seen in situ within the void.

Weather conditions during this time period were generally dry and calm with no prolonged periods of adverse weather recorded. No bat activity was recorded within the void space during the remote monitoring survey.

5. DISCUSSION OF IMPACTS & MITIGATION STATMENT

The survey results to date indicate that the space between the roof slates and felt lining is being used by a common pipistrelle day roost. No bat activity within the void space was detected during the surveys (either observing bats in situ or by recording calls on the static detector). No fresh droppings were noted within the void.

Providing that the exit point (see pictured below) remains undisturbed and works are undertaken outside of the bat activity season then the predicted impact is anticipated to be very low as, on this basis, the roost will remain intact and no bats will be disturbed/injured/killed.



The surrounding areas provide good foraging and commuting opportunities; the proposed development will not have a significant impact on this.

Nesting birds occur in and around the site during the summer months and care will be required to ensure compliance with the Wildlife and Countryside Act 1981 (as amended).

6. REFERENCES & BIBLIOGRAPHY

Altringham, J. D. (2003). British Bats. Harper Collins Publishers, Glasgow, UK.

Briggs P. 2004. Effect of barn conversion on bat roost sites in Hertfordshire, England. Mammalia 68 (4): 353-364.

Collins, J. (ed.) (2016) Bat Survey Guidelines for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

English Nature / The Barn Owl Trust (2002). Barn Owls on Site. A guide for developers and planners. English Nature, Peterborough, UK.

English Nature (2002). Bats in roofs: a guide for surveyors. English Nature, Peterborough, UK.

Hutson, A.M. (1993). Action plan for the conservation of bats in the United Kingdom. London: The Bat Conservation Trust.

Institute of Ecology and Environmental Management (2007). Guidelines for Ecological Impact Assessment in the United Kingdom. IEEM, Winchester, UK.

Joint Nature Conservation Committee (2004). Bat Worker's Manual (3rd Edition). Joint Nature Conservation Committee, Peterborough, UK.

Lee Ecology (2021). Preliminary Bat Survey Report – 2 and 3 Leigh Cross.

Mitchell-Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature, Peterborough, UK.

Shawyer, C. R. (2011). Barn Owl Tyto alba Survey Methodology and Techniques for use in Ecological Assessment: Developing Best Practice in Survey and Reporting. IEEM, Winchester.

The Conservation of Habitats and Species Regulations 2010. HMSO, London.

The Natural Environment and Rural Communities Act (NERC) 2006. HMSO, London.

The Wildlife and Countryside Act 1981 (as amended). HMSO, London.

Wray et al (2010). Valuing Bats in Ecological Impact Assessment. IEEM In Practice Magazine.

7. QUALIFICATIONS & EXPERIENCE

Tamsin Lee BSc (Hons) MSc MCIEEM

Tamsin holds a BSc (Hons) in Zoology from the University of Bristol and an MSc in Environmental Conservation Management and has experience of a wide variety of ecology surveys. Her fieldwork skills include protected species surveys (reptiles, great crested newts, bats, dormice etc.), reptile translocations, butterfly surveys, phase 1 habitat surveys as well as various studies of terrestrial and marine life outside of the UK. Tamsin is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM), has held a Construction Skills Certification Scheme (CSCS) card and survey licenses for bats, barn owls and dormice. She has been registered with the Bat Conservation Trust (BCT) as a bat carer and is a member of various local wildlife groups.

8. APPENDIX

9.1 Ecology & Legal Protection

9.1.1 Bats

There are seventeen species of bats recorded as resident in the UK (one of these, Alcathoe's bat (*Myotis alcathoe*) has only been discovered as resident in 2010); these species are split into two families, the **Rhinolophidae** or "horseshoe bats" and the **Vespertilionidae** or "vesper bats". The greater mouse-eared bat (*Myotis myotis*) was previously thought to be extinct as a UK mammal species until a single individual was discovered in 2002 at a known hibernation site in Sussex, this species is currently regarded by the Bat Conservation Trust as a vagrant/occasional winter visitor. All British bats are insectivorous, feeding on a wide range of invertebrates including gnats, beetles, spiders and moths. Bats have declined in range and numbers in the UK, due primarily to loss of roosts and suitable habitats (JNCC, 2004) as a result of agricultural intensification and development. All British bats use high frequency sound (range 20 - 130 kHz approx.) as a form of echolocation. This allows bats to orientate themselves within their environment, detect and catch prey and communicate with other bats. Healthy bats are solely nocturnal with 'peaks' of activity particularly noted around dusk and dawn during the late spring and summer months.

Bats will utilise a wide variety of structures for the purposes of roosting, including mature trees, caves, mines, buildings (both modern and ancient), bridges and tunnels. They are also commonly known to use purpose-built bat boxes and even empty bird nest boxes. Different types of roost or used by bats at different times of year; the most significant roosts sites are typically maternity and hibernation sites. Maternity roosts, where large numbers of female bats congregate to give birth and rear their young, are typically associated with warm, sheltered conditions. Hibernation sites are characterised by stable temperatures and high humidity. The use of roosts is rather unpredictable (although some species appear to be more 'loyal' to roosts than others), particularly amongst tree-roosting species, but female bats are typically loyal to maternity roosts.

The Conservation of Habitats and Species Regulations 2010 transpose the stipulations of Council Directive 92/43/EEC ("The Habitats Directive") into UK Law. European Protected Species (EPS), which include bats, are listed in Annex IV of the Habitats Directive, and are thus afforded strict protection. Some bat species are regarded as being of higher conservation concern in a European context, and these are listed under Annex II of the Habitats Directive. The habitats of species listed on Annex II may be candidates for the designation of Special Areas of Conservation (SACs). Annex II bat species include the barbastelle, Bechstein's and the two horseshoe bats. It should be noted that there is no longer a defence of harmful actions being "the incidental result of an otherwise lawful operation" for EPS. Specifically, the following actions are prohibited under this legislation:

- deliberate capture, injury or killing;
- deliberate disturbance likely significantly to affect population survival, breeding, rearing young, local distribution or abundance;
- damage or destruction of a breeding site or resting place;
- possessing, controlling transporting, selling or exchanging, or offering for sale or exchange, any bat or any part of a bat or anything derived from one.

The Wildlife and Countryside Act 1981 (WCA) provides protection to all British bat species. The WCA has been amended several times but was most recently strengthened by the Countryside and Rights of Way (CRoW) Act 2000, the Natural Environment and Rural Communities (NERC) Act 2006 and by the Conservation of Habitats and Species Regulations 2010 (above). The WCA specifically prohibits intentional or reckless damage of roosts. Sites known to be used by roosting bats are regarded as roosts regardless of whether they contain bats at the time of survey. This is based on the fact that bats will use several different roost sites throughout the year.

The NERC Act consolidates the requirements of the CRoW Act in placing duties upon government agencies, including local authorities, to ensure the conservation of Biodiversity.

9.1.2 Barn Owls

The barn owl is listed under Schedule 1 of the Wildlife and Countryside Act 1981 (WCA), as amended by the Countryside and Rights of Way Act 2000 (CROW). It is therefore a fully and specially protected species of bird, which in addition to the general protection afforded to the majority of British wild birds, is also protected from deliberate or reckless disturbance. Offences relating to Schedule 1 birds like the barn owl are the subject of a special penalty. The barn owl is also afforded protection by the EC Birds Directive and Appendix II of the Bern Convention. They are 'Amber List' species of conservation concern (BoCC Partners, 1996) and are described as 'globally threatened' within the UK Biodiversity Steering Group Report (1995).

Barn owls (*Tyto alba*) are a resident breeding bird in the UK. They preferentially hunt over open habitats, preferably rough grassland, and prey items include a variety of small mammal species such as the field vole. The barn owl has a large home range and is a notably sedentary species. It is common for the home ranges of neighbouring owls to overlap. Barn owls typically use a number of roosting sites within their home range. However, there is normally only a single nesting site for every three - five roost sites. Tall agricultural barns are the most commonly encountered roost site. However rock ledges and hollow trees may also be used for roosting purposes. Nesting sites require a level platform of at least 3 square metres and only rarely less than 2 square metres. The nesting period for barn owls is typically March to August however nesting barn owls have been recorded at every month of the year.

Barn owls have undergone significant population declines due to agricultural intensification, reduction in prey availability and loss of suitable nesting sites due to development. The foraging behaviour and flight pattern of barn owls means that they can be frequent road kill victims, particularly on major infrastructure routes.

9.1.3 Nesting Birds

All wild birds are protected under part 1 of the Wildlife and Countryside Act, 1981. Therefore, in the UK it is an offence to:

- Take, damage or destroy the nest of any wild bird whilst it is being built or in use.
- Kill, injure or take any wild bird
- Take or destroy the eggs of any wild bird

To avoid committing an offence no works should be carried out on a structure/ feature that is being used by nesting birds. Nesting is deemed to be over when the young have fully fledged.

Certain species, which are listed in Schedule 1 of the Wildlife and Countryside Act, receive special protection. In these cases any form of intentional or reckless disturbance when they are nesting or rearing dependant young, constitutes an offence.

9.2 How to Identify Field Signs of Bats

The following notes are provided as a guide for site workers and operatives if they come across field signs that give rise to suspicion of bats in particular (it is assumed that all site operatives can identify bird nests and bird droppings).

Signs of bat activity may include (English Nature 2002; Mitchell-Jones 2004; JNCC 2004) the following:

- Droppings – Fresh droppings are soft and black, becoming lighter in colour as they age. Bat droppings typically contain fragments of insect exoskeleton and crumble (unlike those of small rodents, which typically harden with time). Bat droppings differ significantly from those of birds in that they have a distinctive 'bullet' shape and have none of the associated white uric acid powder associated with bird faeces. Bat droppings will stick to surfaces including walls, windows and window ledges. They may also become caught in cobwebs below a roost site or feeding perch.
- Feeding remains - these include the discarded wings of flying invertebrates, which may accumulate under a well-used feeding perch. Some species, such as the brown long-eared bat, favour moths of the noctuid family. Hence the accumulated wings of these moths assist in suggesting the presence of this bat.
- Oil staining - the fur of bats may leave an oily residue on surfaces close to occupied roost sites and access/egress points.
- Diurnal vocalisations - these are most pronounced at larger roost sites during periods of hot weather.
- Absence of cobwebs - a well used bat roost and its access points are typically clear of cobwebs.
- Scratchings - scratch marks produced by the claws of many bats may be apparent close to the access point for a well-used roost.
- Dead bats.
- Tracks in dust.
- Odour – most bats have a distinctive odour and certain species, such as the

noctule and soprano pipistrelle, are noted for their pungent roosts resulting from their urine scent marking activity and oily fur.