



Urban Tree Experts

BS5837 – Tree Surveys – Ecological Consulting

PRELIMINARY ECOLOGICAL APPRAISAL (BATS) AT SOUTHERNWOOD WOOLTON HILL



Prepared for:
Mr and Mrs O'Mahony
Southernwood
Tile Barn
Woolton Hill
Newbury
RG20 9UZ

12 April 2023

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The validity of this report ceases at the prescribed time limit or after 12 months from the site inspection, or if the site conditions change due to unspecified works that affect the site whichever is the sooner.



Executive Summary

Urban Tree Experts was commissioned by Mr and Mrs O'Mahony to conduct a preliminary ecological appraisal (bats) of Southernwood, Tile Barn, Woolton Hill, Newbury, RG20 9UZ. This is to support a forthcoming planning application to Basingstoke and Deane Council.

The site visit was carried out on Tuesday 21 March 2023 at 10.45am, during daylight hours. An internal and external inspection of the property and an external inspection of the garage took place to look for signs of bats.

The preliminary ecological appraisal (bats) comprised a detailed search of the exterior and interior of the building for bats, signs of bats and features suitable for use by roosting bats. This includes droppings, internally or externally, scratch marks, rubbing and staining at exit holes, live or dead bats and other features such as missing tiles, this list is not exhaustive.

A desk top study was conducted prior to the survey to review existing information about the site and its surroundings and to inform the design of subsequent bat surveys, if required. The desk top study was conducted based upon a 2km search radius and it revealed one statutory designated site is located within, and four current European protected species Licences (EPSLs) for bats have been granted within 2km of the proposed development site.

The property and garage are in good condition externally and the property is in a good condition internally. There are a small number of gaps within the verges externally which could provide potential roosting opportunities or access into the building for bats. In addition, a small number of bat droppings were recorded within the loft spaces, indicating that bats are or have been using the building for roosting. DNA analysis of the droppings by SureScreen Scientific confirmed them to be those of the brown long-eared bat, see Appendix 1.

In line with best practice guidelines, three dusk emergence and/or dawn return to roost surveys are recommended on the property, in order to assess the status of the roost currently and to inform appropriate mitigation for the proposed works to the building.



1. Introduction

1.1 Instruction

Urban Tree Experts was instructed by Mr and Mrs O'Mahony to conduct a preliminary ecological appraisal (bats) of Southernwood, Tile Barn, Woolton Hill, Newbury, RG20 9UZ to support a forthcoming planning application to Basingstoke and Deane Council.

1.2 Aims and Objectives

The preliminary ecological appraisal (bats) is designed to:

Identify the presence/likely absence of bats within the building.

Provide information on the status of bats using the building currently or previously).

To add confidence where no bats are found, or to categorise the nature of a roost where evidence of bats are found.

To establish whether further surveys, mitigation or an EPSL is required.

The preliminary ecological appraisal (bats) and report writing were carried out in accordance with Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition, Bat Conservation Trust, 2016).

1.3 Proposed Works

The survey was commissioned in connection with a forthcoming planning application to Basingstoke and Deane Council, the plans of which have not yet been finalised, however will likely either be the construction of a new dwelling following the demolition of the existing bungalow, or the construction of a first floor onto the existing dwelling.

1.4 Surveyor Background and Experience

The preliminary ecological appraisal for bats was completed by Emma Turnbull and the report was written by Simon Holmes MSc. CEnv. Emma holds a Class 2 Bat Licence (CLS-41628) and Possession Licence (SCI-44140). She has been surveying bats for 6 years and has received training in surveying techniques, bat detector use, echolocation analysis, bat biology and identification and netting and ringing and is a registered bat carer with the Bat Conservation Trust. Simon holds Class 3 (CL19) and 4 Bat (CL20) Licenses (Nos. 17637 and 17638) and a Science and Education license (SCI29096). He has 34 years' experience of carrying out bat surveys and bat conservation work.

2. Legislation and Planning Policy

2.1 Legislative Background

All species of British bat are protected under the Conservation of Habitats and Species Regulations 2017 and the Wildlife and Countryside Act 1981, as amended. Under this legislation it is an offence to kill or injure a bat or interfere with any roosting or resting site. A bat roost is interpreted as "*any structure or place used for shelter or protection*" whether or not bats are present at the time. A summary of the main legislation and planning considerations are included at Appendix 2.

Seven species of bat are also Species of Principal Importance for nature conservation in England under Section 41 of the Natural Environment and Rural Communities Act 2006. This places a duty on all government departments to have regard for the conservation of these species and on the Secretary of State to further, or promote others to further, the conservation of these species.



3. Site Location and Description

3.1 Site Location

The building is located at Grid Reference SU 4339 6181, see Figure 1 below. An overview of the immediate area is shown on Figure 2, courtesy of Bing Maps.

Figure 1. Southernwood, Woolton Hill, highlighted.



Figure 2. Southernwood, Woolton Hill, overview of the immediate area.





3.2 Site Description

The application site comprises a detached, brick-built property with an attached garage. The remainder of the site comprises a wraparound front and rear garden, which has recently been part cleared, with some trees, hedgerows and shrubs remaining, see Figure 3 below. The site itself offers some foraging and commuting habitat for bats around the boundaries of the site.

Figure 3. Rear garden. Southernwood, Woolton Hill. 21.03.23



4. Survey Methodology

4.1 Pre-Survey Data Search

Google Earth and MAGIC maps (magic.defra.gov.uk) websites were used prior to the survey to determine the suitability of the surrounding habitat to support roosting bats and to identify any statutory designated sites within 2km of the site. Due to the suburban area, and the very local impact that is likely to occur, no data was sought from the local records centre at this time.

The site is situated on the outskirts of the town of Newbury and is surrounded by properties and gardens of differing sizes and styles. To the east lies a large expanse of woodland owned by the National Trust. This area is known to provide good habitat for roosting, commuting and foraging bats and is connected to the site via tree and hedge lines. To the north, south and west lie large areas of farmland, which is interspersed with areas of woodland, all of which are likely to provide good habitat for bats and have some ecological connectivity to the site. Further afield lie a number of areas of farmland and woodland, all of which are likely to provide good habitat for bats, some of which have ecological connectivity to the site.



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Highclere Park Site of Special Scientific Interest (SSSI) lies within 2km of the site although there is no ecological connectivity from the site to this SSSI. A search of the Magic interactive website revealed four current EPSLs for bats have been granted within 2km of the site, the details of which are provided in Table 1 below.

Table 1. Current EPSLs for bats within 2km of the site

EPSL reference	Licence end date	Species on licence
2018-37032-EPS-MIT-1	2023	Common pipistrelle
2018-33697-EPS-MIT	2023	Brown long eared and serotine
2019-42890-EPS-MIT-2	2025	Barbastelle, brown long-eared, common pipistrelle, soprano pipistrelle and whiskered
2018-37702-EPS-MIT	2028	Brown long eared, common pipistrelle and serotine

4.2 Daylight Survey

The preliminary ecological appraisal (bats) of Southernwood, Tile Barn, Woolton Hill, Newbury, RG20 9UZ was carried out by Emma Turnbull on Tuesday 21 March 2023 at 10.45am. The weather conditions for the survey were sunny with rain showers and a temperature of 12 degrees. Equipment used included a high-powered torch, a digital camera on a telescopic pole and a ladder.

During the preliminary ecological appraisal (bats), an external and internal inspection of the property and attached garage was carried out to identify any signs of occupation by bats and features that could offer potential roosting sites following standard survey guidelines. Features investigated included:

- Construction of the building– soffits, loft space, tiles/slates, lead flashings etc.
- Building condition – structure of roof and walls.
- Internal conditions – microclimate stability, draughts etc.
- Access points – potential entry and exit points for bats.
- Roosting points – cracks and crevices, between underlay and roofing tiles/slates.

Field signs that would indicate the presence of bats were searched for. These included:

- Bat droppings on the floor and walls of the building.
- Feeding remains (particularly butterfly and moth wings).
- Evidence of urine and/or oily staining around possible roost entrances.
- Presence of areas cleared of cobwebs.
- Where a breathable roofing membrane has been fitted staining on the membrane may suggest use by bats.
- Odour can sometimes suggest the present of bats.
- Squeaking and chattering can reveal bats roosting between the tiles and roofing underlay.

Buildings or structures that were not to be affected by the current proposals or with no bat roosting potential were not inspected.



4.3 Constraints

Full access to the site during the visit was made possible by the client. There was no access to the garage internally and therefore an internal inspection of the attached garage was not possible.

5 Survey Findings

5.1 External Inspection

The external features of the property and attached garage were examined for signs described in section 4.2. Windowsills, exposed features around the windows, fascia's and walls were inspected for any evidence of bat droppings or staining.

The bungalow is a detached brick-built building, which is in a good condition externally. The roof of the property is pitched and covered in composite tiles, none of which are missing or broken, see Figure 4 on page 9. The ridge tiles are all tightly fitted with no gaps (see Figure 5 on page 9) and the lead flashing around the chimney is all tightly fitted to the tiles and had no gaps in which crevice dwelling bats could utilise for roosting, see Figure 6 on page 10. The soffits and fascia's are all tightly fitted to the walls and had no cracks or splits in which roosting bats could exploit (see Figure 7 on page 10) and the wooden cladding on each end of the building was overlapping, tightly fitted and had no gaps in which bats could utilise for roosting, see Figure 8 on page 11. There is missing mortar along the verges (see Figure 9 on page 11), which could provide potential roosting opportunities for bats or access into the building for bats.

The attached garage was also inspected externally. The garage is a single storey brick-built section of the property which is in a good condition. The roof of the garage is flat and covered in bitumen felt, none of which is ripped or torn, see Figure 10 on page 12.

No bats or evidence of bats was recorded externally on the property, although there are a small number of gaps within the verges which could be used by crevice dwelling bats for roosting or provide access into the building for roosting bats.



Figure 4. Example of roof tiles. Southernwood, Woolton Hill. 21.03.23



Figure 5. Example of ridge tiles. Southernwood, Woolton Hill. 21.03.23





Figure 6. Tightly fitted lead flashing. Southernwood, Woolton Hill. 21.03.23



Figure 7. Soffits and fascia's. Southernwood, Woolton Hill. 21.03.23

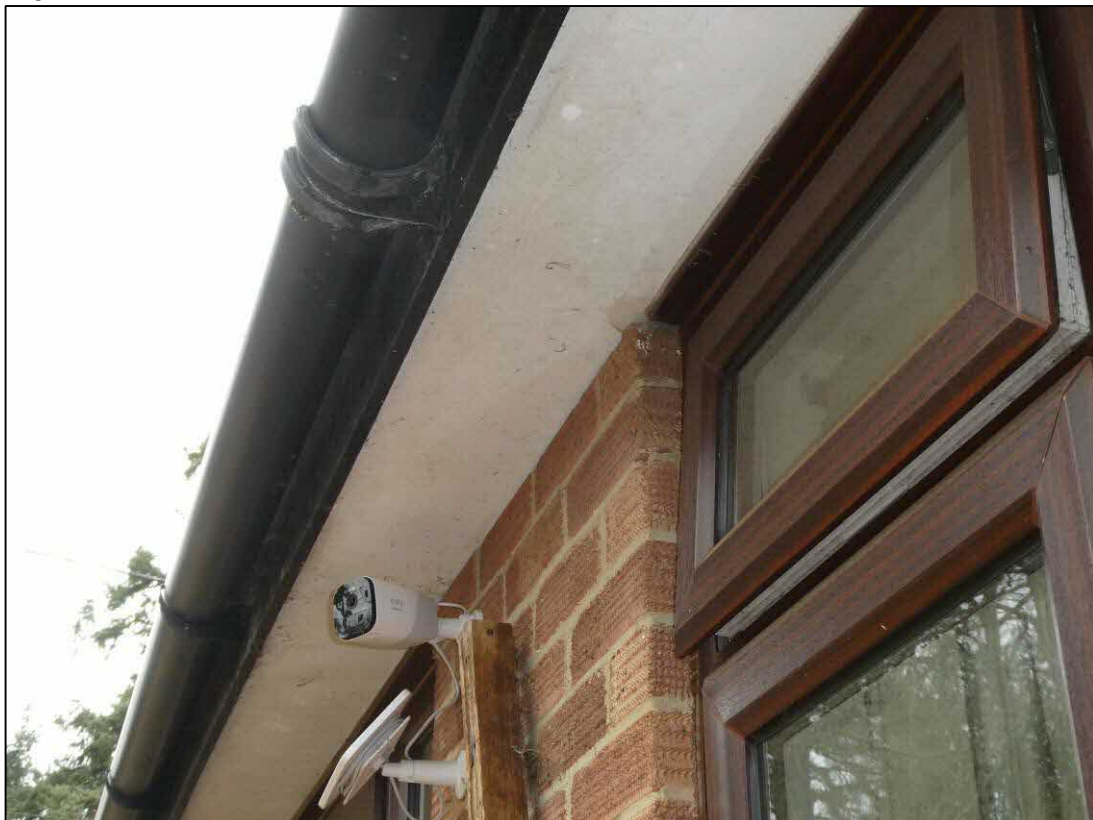




Figure 8. Wooden cladding. Southernwood, Woolton Hill. 21.03.23



Figure 9. Missing mortar in verges. Southernwood, Woolton Hill. 21.03.23





Figure 10. Flat roof of garage. Southernwood, Woolton Hill. 21.03.23



5.2 Internal Inspection

An internal inspection of the house was undertaken and was examined for any signs of bats (as described in section 4.2).

There were two loft spaces within the property. Loft 1 was accessed via a ladder and is in a good condition internally, see Figure 11 on page 13. The loft is uncluttered, not lit, partially boarded and insulated, see Figure 12 on page 13. The roof tiles are lined with bitumen, the majority of which is in a good condition and did not have any visible rips or tears, see Figure 13 on page 14. A small number of bat droppings (see Figure 14 on page 14), of a similar size and consistency to those of brown long-eared bats, along with a large number of rodent droppings were recorded within the loft, indicating bats are of have been using the loft space for roosting. DNA analysis of the droppings by SureScreen Scientific confirmed them to be those of the brown long-eared bat, a species known to roost in buildings.

Loft 2 was also accessed via a ladder and is also in a good condition, see Figure 15 on page 15. The loft space is uncluttered, not lit, partially boarded and insulated, see Figure 16 on page 15. The roof tiles are lined with bitumen felt, all of which is in a good condition with no visible rips or tears. No bats or evidence of bats was recorded within Loft 2 and there appeared to be no roosting opportunities for bats within this loft space.



Figure 11. Example of loft hatch in Loft 1. Southernwood, Woolton Hill. 21.03.23



Figure 12. Internal space of Loft 1. Southernwood, Woolton Hill. 21.03.23





Figure 13. Example of bitumen lining in Loft 1. Southernwood, Woolton Hill. 21.03.23



Figure 14. Bat droppings in Loft 1. Southernwood, Woolton Hill. 21.03.23





Figure 15. Example of loft hatch in Loft 2. Southernwood, Woolton Hill. 21.03.23



Figure 16. Internal space of Loft 2. Southernwood, Woolton Hill. 21.03.23





6. Evaluation

The bat roost potential of the features within the site have been assessed with reference to the criteria laid out in the Bat Mitigation Guidelines (Mitchell-Jones, 2004). These criteria are listed on page 22 of the guidelines with the features **highlighted in bold**.

The likelihood of bat roosts being present will be higher where structures:

are of a pre-20th Century construction;

are in a lowland rural setting;

have woodland, mature trees, species-rich grassland and/or water nearby;

have large dimension roof timbers with cracks, joints and holes;

have numerous crevices in stonework and structures;

have an uneven roof covering with gaps, though not too draughty;

have hanging tiles or roof cladding, especially on south-facing walls;

have a roof warmed by the sun;

are disused or little used; largely undisturbed;

provide appropriate hibernation conditions, such as abandoned mines, tunnels, kilns, or fortifications; or

Recent and historical records of bat roosts in the general area.

The likelihood of bat roosts being present will be lower where structures:

are in an urban setting with little green space;

are subject to heavy disturbance (constant movement due to draughts and noise, also unstable microclimate);

have a small, cluttered roof void (particularly for brown long-eared);

are of a modern construction with few gaps or crevices that bats can fly or crawl through (though pipistrelle bats may still be present);

are comprised of prefabricated steel or sheet materials; (some sections);

are active industrial premises.

Please note that the above list provides generic screening criteria only and there are exceptions to consider.

7. Conclusions

7.1 Interpretation

The property and attached garage are in a good condition. There are a small number of gaps in the verges which could provide potential roosting opportunities for crevice dwelling bats or access into the building for roosting bats. The bat droppings observed in loft number 1 indicate that bats are or have used the loft to roost. Low numbers of bat droppings are normally associated with low numbers of bats. There is no evidence of maternity roosting, or hibernation use for example, significant aggregations of droppings, excess urine staining or odour and therefore the building has, in our opinion, been used as a summer roost by a low number of brown long-eared bats.

Based on the Bat Workers Manual and the Bat Surveys Good Practice Guidelines, it is recommended that three dusk emergence and/or dawn return to roost surveys are undertaken on the property, between May and August, to assess the current status of roosting bats, in order to inform appropriate mitigation for the proposed works. Two surveyors equipped with bat detectors and night vision equipment will be required for the survey on the property, in order to cover the potential bat roosting features.



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7.2 Contingency Plan

If, for whatever reason, there is a time delay of greater than 12 months between this survey and the commencement of work, then the survey should be repeated as the condition of the building may have changed and different species or larger number of bats may start roosting at the site.

8. References

Collins, J (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). Bat Conservation Trust (BCT), London.
HM Government (2017) Conservation of Habitats and Species Regulations.
HM Government (1981) The Wildlife and Countryside Act.
HM Government (2006) Natural Environment and Rural Communities Act.
Mitchell-Jones, A.J. & McLeish, A.P. (1999). Bat Workers' Manual (2nd Edition). Joint Nature Conservancy Committee, Peterborough.

9. Queries

Any queries regarding this report should be addressed, in the first instance, to Urban Tree Experts:

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APPENDIX 1

Folio No: E16410
 Report No: 1
 Purchase Order: KH202302
 Client: URBAN TREE EXPERTS
 Contact: Simon Holmes

TECHNICAL REPORT

ANALYSIS OF BAT DROPPINGS FOR SPECIES OF ORIGIN IDENTIFICATION

SUMMARY

The droppings of bats contain small amounts of DNA belonging to the organism from which they originated. By analysing droppings collected from a bat roost or colony for the presence of DNA, a robust identification of the species present can be made. Recent advancements in molecular methods including PCR (polymerase chain reaction) and DNA sequencing mean that 92% of bat species worldwide can be identified including all 17 UK resident bat species.

RESULTS

Date sample received at Laboratory: 30/03/2023
Date Reported: 12/04/2023
Matters Affecting Results: None

Lab Sample ID.	Site Name	O/S Reference	Genetic Sequence	Common Name	Result	Sequence Similarity
B1758	Southernwood		GGTTAGTGCCACTGATAATT GGAGCCCCTGACATAGCTTT TCCCGAATAAATAACATAA GCTTCTGACTGCTTCCCCCA TCTTTTCTACTACTTTTAGCT TCGTCTGCAGTAGAGGCTGG GGCAGGTACCGGTTGAACAG TCTACCCTCCTTTAGCGGGA AA	Brown long-eared bat	<i>Plecotus auritus</i>	100%



If you have any questions regarding results, please contact us: [REDACTED]

Reported by: Chelsea Warner

Approved by: Chris Troth

METHODOLOGY

Once samples have arrived in the laboratory, a single bat dropping is selected for its suitability (freshness and size). The DNA is then isolated using a commercial DNA extraction kit. Using PCR, bat DNA (if present within the sample) is amplified using bat DNA-specific molecular markers designed to amplify a short fragment of the mitochondrial gene. If amplification is successful, the resulting DNA sequence is revealed using a process known as Sanger Sequencing in order to obtain the genetic sequence. The sequence results are aligned against a library of known bat reference sequences using bioinformatics software, which enables us to determine which species the extracted DNA matches with, informing the species identity and sequence similarity (%).

If the initial analysis is unsuccessful, the entire process is repeated up to two additional times with fresh reserve droppings. If no DNA is detected after three attempts, we can be confident that any further analysis of the sample will likely also fail to result in species identification.

INTERPRETATION

Genetic Sequence: The unique DNA sequence obtained from the sample.

Sequence Similarity: How closely matched the DNA sequence from your sample is to the sequences within our reference database. This can be interpreted as a score of result accuracy, with the maximum score of 100% indicating an exact match of dropping to the indicated species' reference sequence. Lower scores (80-99%) indicate some variation between the sample and reference sequence, likely due to natural variation between individual genetic sequences and/or systematic variations generated through the sequencing process. Scores below 80% similarity should be interpreted with care and can indicate part degraded or part contaminated samples.

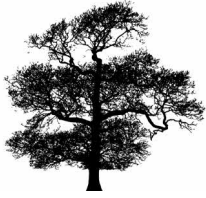
Inconclusive Result:

Degraded sample:
DNA degraded, unable to determine species identification due to degradation of sample DNA. This can happen either before sample collection (old droppings, exposure to UV etc.) or after sample collection if stored for long periods before analysis or not handled correctly.

Inhibited/contaminated sample:
Unable to determine species identity due to contamination or the suspected presence of large quantities of PCR inhibitors. Contamination sources can come from other species which come into contact with droppings, human contamination during sample collection.

Alternative Result: Sometimes, other mammalian species such as rodents are detected. We find this to be a common occurrence as some bat droppings can be similar in appearance to rodent droppings. Although sometimes unexpected, repeat analyses in these cases would likely return the same results.





APPENDIX 2

In summary, the legislation combined makes it an offence to:

Intentionally or recklessly damage, destroy or obstruct access to a structure or place used for shelter by a bat.

Intentionally or recklessly disturb bats; in particular any disturbance which is likely to impair the ability of bats to survive, breed or reproduce or nurture their young; or in the case of hibernating or migrating bats, to hibernate or migrate.

Intentionally or deliberately kill, injure or take any bat.

Planning Considerations:

Government guidance to Local Planning Authorities stipulates the need to consider biodiversity and protected species during the consideration of planning applications. The NPPF makes clear that the planning system should help minimise the impacts that development can have on biodiversity and provide net gains in biodiversity where possible. In addition, the ODPM Circular 04/2005 states *“It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision”*.

Policy EM4 of Basingstoke and Deane Borough Councils Local Plan states *“Development proposals will only be permitted if significant harm to biodiversity and/or geodiversity resulting from a development can be avoided or, if that is not possible, adequately mitigated and where it can be clearly demonstrated that:*

a) There will be no adverse impact on the conservation status of key species; and

where possible, to a net gain in biodiversity, through creation, restoration, enhancement and management of habitats and features including measures that help to link key habitats.

Developments that compromise the protection afforded to bats or roosts under the provisions of the Conservation of Habitats and Species Regulations 2017 and the Wildlife and Countryside Act 1981 will require a European Protected Species (EPS) licence from Natural England (NE).

NE, the government’s statutory conservation advisory organisation, is responsible for issuing EPS licences that would permit activities that would otherwise lead to an infringement of the Habitat Regulations.

Three tests must be satisfied before this licence (to permit otherwise prohibited acts) can be issued:

Reg 44(2)(e) – the derogation is “in the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment”.

Reg 44(3)(a) – there is “no satisfactory alternative” to the derogation.

Reg 44(3)(b) –the derogation is “not detrimental to the maintenance of the populations of the species concerned at a favourable conservation status in their natural range”.

Tests (a) and (e) can be met with the issue of planning permission for the proposed works. Test (b) is determined by NE’s ecology department that requires the development of a suitable mitigation strategy that would ensure that any bats present on site, are retained at the same population level or better.