

PRELIMINARY ROOST ASSESSMENT (PRA)

CAMELIA COTTAGE, HOLY VALE, ST MARY'S, ISLES OF SCILLY



Client: Perry Sladen

Our reference: 23-5-3

Planning reference: Produced in advance of submission

Report date: 27th June 2023

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Executive Summary

Bats - Results and Findings

The preliminary roost assessment (PRA) survey confirmed the presence of brown long-eared bat droppings in the loft space. The age and number of droppings would be consistent with a small day or night roost; however the potential for either lower-level exploratory use or the presence of a more significant roost cannot be ruled out due to the constraints and limitations of access and visibility. Further surveys would therefore be required to characterise the roost and the use of the building by bats.

This judgement was reached in accordance with the survey methodologies and evaluation criteria outlined in the Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd edition¹

Bats - Further Survey Requirements

Further surveys would be required in order to characterise the roost. At a minimum, these would include:

- 1) Passive recording of bats within the loft space in June using a static monitoring device;
- 2) Two further Presence/Absence Surveys (PAS) to watch for bats entering/leaving the building;
- 3) An inspection of the loft space of the adjacent Magnolia Cottage to ensure any impacts arising to roosts as a result of works to the party wall are characterised. An explanation and justification for this final recommendation is provided in detail in the following report.

Nesting Birds - Results and Findings

Sparrows were confirmed nesting at the eaves of the building and additional minor niches may occur elsewhere within the roof structure. Adjacent vegetation within the garden may also provide nesting habitat, and may be disturbed as a result of the proposed works.

Nesting Birds - Recommendations

Works should take place with due regard to the presence of nesting birds – no further surveys are required to inform Planning but works should be timed to avoid the nesting season or include pre-commencement inspections.

Nesting opportunities could be retained or re-created in situ. Alternatively, nest boxes could be erected either on the dwelling or within the garden to replace nesting habitats impacted by the re-roofing works. Guidance on suitable specifications is provided.

¹ Collins, J. (ed.) 2016 Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

PRELIMINARY ROOST ASSESSMENT (PRA)

Planning Authority: Isles of Scilly	Location: SV 91985 11543	Planning Application ref: Report produced in advance of submission
Planning application address: Camelia Cottage, Holy Vale, St Mary's, Isles of Scilly		
Proposed development: The proposed works were identified by the client and should accord with the documentation submitted in support of the application. These involve: 1) The installation of Velux windows into the southern pitch of the roof. The following assessment takes into account both the potential direct impacts to the structure (e.g. removal of the existing roof tiles and installation of Velux windows) and the indirect impacts (e.g. changes to the internal condition of the roof void through lighting). The proposals also include works to convert the loft to a living space – these works are not covered by the planning application as they are restricted to internal re-modelling; however the planning process is only a mechanism for ensuring legislative compliance. The legislation protecting bats and their roosts is absolute, regardless of the requirement for planning, and therefore the works to remodel the roof space, beyond the installation of the Velux windows, are also given consideration in the determination of the following survey programme, in order to fully characterise the impacts to roosting bats and ensure that the works can take place with due regard to the legal protection of bats. This is to ensure both the homeowner and their contractors are working safely and with legislative compliance.		
Building references: The building is identified in the plans provided in Appendix 2.		
Name and licence number of bat-workers carrying out survey: James Faulconbridge (2015-12724-CLS-CLS)		
Preliminary Roost Assessment date: The visual inspection was undertaken on 1 st June 2023 in accordance with relevant Best Practice methodology ² .		
Local and Landscape Setting: The building is located in Holy Vale towards the centre of St Mary's. The property is a part of a small settlement including several older cottages as well as newer barn conversions and detached dwellings. These are interspersed with trees, gardens and areas of green space which constitute the immediate surroundings for the property. The land use to the north, east and west is predominantly arable and horticultural, with small fields well-connected by hedge and treelines which would provide good quality foraging and commuting habitat. The cottage is situated at the tip of a wooded belt which runs south towards Higher Moors SSSI. The location of the property is therefore situated optimally for immediate		

² Collins, J. (ed.) 2016 Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

access to the highest quality foraging habitat found on St Mary's.

There are nine records of bat roosts within 500m of the property – these are predominantly common pipistrelle roosts associated with roosting features around fascias on granite buildings or agricultural barns. There is also a single record of a brown long-eared roost within an elm tree in the woodland to the south of the property. This congregation of roosts supports the assessment of Holy Vale as a high value habitat for bats within St Mary's.

Building Description(s):

The property is a granite-built mid-terrace cottage. There are well-fitted timber window and door frames in concrete surrounds – these did not offer gaps or other opportunities which could be used by roosting bats.

The rear of the property to the north has a flat-roof extension built into the roof which encloses the old pitch on the northern aspect. Within the loft space, the remnants of the chimney and stripped roof can be seen on this aspect. The internal rooms and living space within this flat-roof component of the building are not a part of Camelia Cottage site but part of a neighbouring property.

The loft space is under-boarded and clad loosely with timbers in a poor structural condition. In places this restricts visibility of the ridge and roof especially towards the apex, though a void above the cladding is present. Roofing felt is present throughout, though in variable condition. There is evidence of redundant dormers and roof-lights within the timber roof structure, though these have been boarded out and removed from the standard pitched roof – it is understood that this was undertaken as part of a previous re-roofing and reformatting project. There is little or no insulation present. The space has evidently been used as living space in the past but was dusty and dirty at the time of survey with no use for storage or other purposes. No gaps suitable to provide roosting opportunities were noted between timbers though occasional minor cavities may occur – there is potential for bats to free-hang from timbers. The irregular nature of the roof and the inclusion of the redundant exterior wall, capped chimney and roof pitch precluded comprehensive access for inspection.

A small number of individual droppings were noted in the western edge of the loft space – these are largely rat and mouse though a dropping caught in a spider's web above was sent for DNA analysis and was confirmed as brown long-eared bat (see Appendix 1). The droppings were not fresh, but are likely to be from the 2023 active season. As a precautionary assessment, it is likely that at least 5-6 droppings within this location are brown long-eared bat based on this analysis, indicating an occasional day- or night-roost. However the location of the droppings is below a gap in the timber clad component of the loft and it is possible that the droppings identified may be from a larger roost concealed at the ridge, from which just a small number of dropping have fallen to a visible location and are thus apparent. For this reason, further surveys would be required to characterise the roost based on these limitations on inspection, assessment and interpretation.

Externally, the roof is in good condition with few gaps between roof or ridge tiles. There is abundant moss on the southern pitch which further acts to seal any minor gaps which may occur. No fascias or soffits are present – the guttering is attached directly to the granite wall at a height which would restrict a direct fly-in for roosting bats but would nonetheless permit access. The proximity to a tree with a large canopy would provide a covered/vegetated access point.

It was not possible to inspect the flat-roof component on the northern aspect or the main pitch into which it ties due to intervening buildings under alternate ownership. No direct or indirect impacts to this structure are identified based on the proposals under consideration, though this may represent a potential access point for bats.

The cottage and thus the roof void is part of a terrace and there are party walls between

Camelia Cottage's loft and the loft spaces of the neighbouring properties on both sides. These appeared to be generally well-sealed with no direct fly-through access for bats, though minor gaps over the concrete block wall connecting to Magnolia Cottage may occur.

Sparrows were confirmed nesting at the eaves of the roof, and a mature tree in the neighbouring garden is set in close proximity to the property and is likely to provide further nesting habitat.

Survey Limitations

The irregular nature of the loft space, incorporating enclosed and abandoned elements of a previous structure, precluded comprehensive access though all areas of the loft space were visually inspected from a distance. This is taken into account in the assessment and recommendations provided.

The timber cladding would conceal evidence of bats roosting between the timbers and the roof structure above. The location of the confirmed dropping below a gap in the timber cladding would not preclude the possibility that the small number of droppings relate to a larger roost from which only a small proportion of droppings are apparent in the accessible space. This possibility would need to be assessed through further surveys which use alternative techniques to overcome the limitation.

It was not possible to view the northern pitch of the roof due to the presence of the flat-roof extension belonging to a neighbouring property. No direct or indirect impacts to this side of the roof are proposed, so this constraint is relevant only to the potential for bats to use this aspect to access roosting locations within the loft space. The significance of this limitation will depend on the results of the further PAS surveys undertaken on the southern side of the building.

No further constraints to the validity of the survey are recorded.

Assessment of Potential for use by Roosting Bats

The identification of bat droppings within the loft space confirm that brown long-eared bats have accessed the roof space.

- The evidence gathered from the PRA inspection would be consistent with a small day- or night-roost by an individual brown long-eared bat.

The potential for a lower or higher status of use cannot be ruled out however, based on the evidence gathered to date. This could include:

- Exploratory access only by a brown long-eared bat which does not use the building as a regular roost; or
- A more significant roost, including maternity, used by a larger number of bats.

Further surveys would therefore be required to characterise the use of the loft space by brown long-eared bats.

Conservation Significance (Bats)

The conservation significance of the roost can be characterised by considering both the species of bat, and the type of roost. Further information would be required to characterise the type of roost, but brown long-eared bats are considered to be rare on the Isles of Scilly, thus elevating the conservation significance of the roost.

Only two roost sites for brown long-eared bat are known on St Mary's – these are both tree roosts used by individual bats. Brown long-eared bats have not been identified on St Mary's for over 10 years and this DNA analysis of a recent dropping allows their continued presence to be confirmed. More recent roosts have been confirmed on Tresco – these two islands are the only

places known to support brown long-eared bats on Scilly.

Recommendations and Justification (Bats):

Additional surveys would be required to characterise the use of the loft space by brown long-eared bats.

The proposals of direct consideration to Planning are restricted to the installation of the Velux windows; these would have the effect of increasing light levels in the loft space which would functionally destroy a roost in isolation. For this reason, further surveys to characterise the use of the loft space by bats would be required even if the precise location of the physical intervention to the roof structure was not used as the roosting site.

The proposals also include works to convert the loft to a living space – these works are not covered by the planning application as they are restricted to internal re-modelling; however the planning process is only a mechanism for ensuring legislative compliance. The legislation protecting bats and their roosts is absolute, regardless of the requirement for planning, and therefore the works to remodel the roof space, beyond the installation of the Velux windows, are also given consideration in the determination of the following survey programme, in order to fully characterise the impacts to roosting bats and ensure that the works can take place with due regard to the legal protection of bats. This is to ensure both the homeowner and their contractors are working safely and with legislative compliance.

- A static bat detector should be deployed in the loft space to determine use of the void over a period of several weeks in June. As brown long-eared bats have quiet echolocation, this approach is not comprehensive and must be deployed alongside emergence surveys but may provide valuable additional evidence upon which to base the assessment;
- A minimum of two Presence/Absence Surveys (PAS) should be undertaken to observe the building at dusk/dawn and watch for bats emerging from, or returning to, roost sites from the roof. The layout of the building would only permit this to be undertaken from the southern aspect.
- An additional inspection of the loft space in Magnolia Cottage should be undertaken, to ensure that remodelling works affecting the party wall in the loft space of Camelia Cottage do not impact upon roosting features.

The results of these surveys would then be used to develop mitigation recommendations to ensure legislative compliance.

Assessment of Potential for use by Nesting Birds

House sparrows were confirmed nesting in features associated with the eaves of the property. Further minor opportunities may also be found elsewhere within the structure.

The property is set within a garden including a mature tree in the adjacent property – these may provide suitable nesting habitat for birds which could be disturbed during works, for example through the erection of scaffolding and the removal of tiles.

It is confirmed that the building and associated vegetation provides **suitable habitat** for use by nesting birds.

Recommendations and Justification (Birds):

In order to ensure legislative compliance, the contractors undertaking the works must ensure that nesting birds are not disturbed in accordance with requirements under the Wildlife and Countryside Act (1981).

Timing of Works

Works affecting the roof should be undertaken outside of the breeding season which runs from March – September inclusive, where practicable. This would provide the most robust means of avoiding risk of impact to nesting birds.

Pre-commencement Inspection

If this is not possible, then contractors should visually inspect the work area internally and externally before they are affected by the works, in order to confirm that no nests are present. In the event that a bird's nest is present, it must be left undisturbed until chicks have fledged the nest, at which point works can proceed.

Care must also be taken to ensure that the works do not cause disturbance or damage to proximate nesting areas through indirect impacts including vibration, noise or contractor presence. This includes adjacent parts of the building, as well as vegetation within the garden and boundary hedges.

Enhancement Opportunities

The proposed works are likely to involve the removal of nesting habitats for sparrows at the eaves, in the absence of appropriate mitigation measures. It is recommended that retention in situ is designed into the scheme where practicable. Alternatively the installation of communal nest boxes supporting several pairs of birds could ensure continuity of nesting habitat. Consideration would need to be given to the location and aspect of these boxes to minimise disturbance and risk of predation, as well as avoid nuisance to residents.

If the applicant wished to provide biodiversity enhancement measures, this could be achieved through the erection of further bird boxes on the building. Nest boxes suitable for hole-dwelling species such as blue tits, or open-fronted boxes for species such as blackbird and robin also have a high likelihood of occupation.

Boxes should be mounted on the wall if possible, at a height of at least 3m above the ground with an entrance clear of vegetation/other features which may put them at risk of predation from cats.

Boxes can be sourced online, or can be constructed on site using methodology and specifications provided by the RSPB:

Swallow: <https://www.nestbox.co.uk/products/eco-swallow-nest>

Sparrows: <https://www.rspb.org.uk/get-involved/activities/give-nature-a-home-in-your-garden/garden-activities/createasparrowstreet/>

Other Species: <https://www.rspb.org.uk/fun-and-learning/for-families/family-wild-challenge/activities/build-a-birdbox/>

Signed by bat worker(s):

Date: 27th June 2023



APPENDIX 1



Folio No: E17887
Report No: 1
Purchase Order: CAMELIA
Client: IOS Ecology
Contact: James Faulconbridge

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: 08/06/2023
Date Reported: 20/06/2023
Matters Affecting Results: None

Lab Sample ID.	Site Name	O/S Reference	Genetic Sequence	Common Name	Result	Sequence Similarity
B1889	CAMELIA COTTAGE	SV 91981 11538	TATCTATNGGAGNGNTTCGG NACTGNNTGGTNCCTCTGA TAATTGGAGCCCCNGANATA GCATTTCGCCGAATAAATA CATAAGCTTCTGACTTCTCC CCCCATCTTTCTACTANTAT TAGCTTCTCTGCAGTGGAA GCCGGAGCTGGAACCGGTT GAACAGTTTATCCCCCTTTA GCNCGAAACCTGNCNCATG CAGGAG	Brown long-eared bat	<i>Plecotus auritus</i>	85.15%

If you have any questions regarding results, please contact us: ForensicEcology@surescreen.com

Reported by: Chris Troth

Approved by: Gabriela Danickova



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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

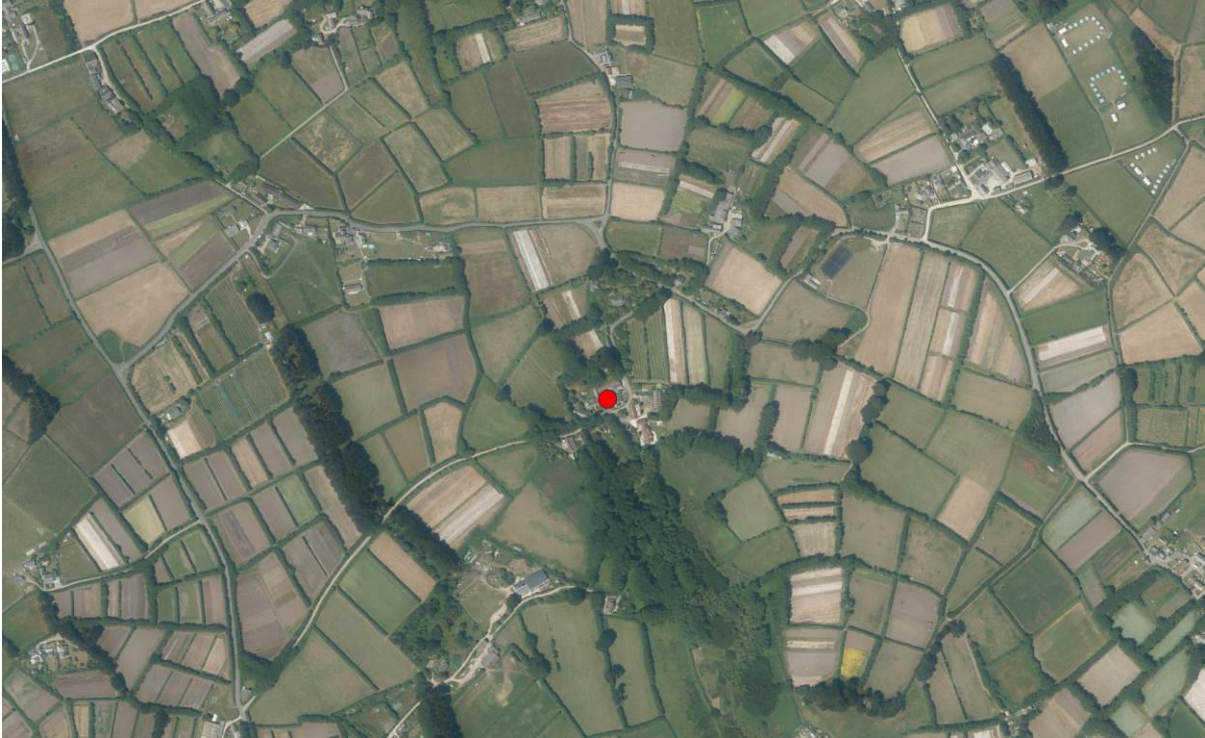
- Genetic Sequence:** The unique DNA sequence obtained from the sample.
- Sequence Similarity:** How closely matched the DNA sequence from your sample is to the sequences within our reference database. This can be interpreted as a score of result accuracy, with the maximum score of 100% indicating an 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

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LOCATION PLAN AND PHOTOGRAPHS



Map 01 – Illustrating the location of the property within the local environs (red circle). Reproduced in accordance with Google’s Fair Use Policy.



Map 02 – Showing the southern pitch of the roof (red wash) on the context of the wider building complex. The flat-roof component which occupies the northern pitch of the roof of Camelia Cottage can be seen to the north. Reproduced in accordance with Google’s Fair Use Policy.



Photograph 1: Showing the front of the building with the bay windows visible.



Photograph 2: Showing the tight fit of the roof tiles and abundant moss. The guttering attachment directly to the wall, without soffit or fascia, can also be seen.



Photograph 3: Showing the timbers which underboard the loft space and also create an internal partition.



Photograph 4: Showing the redundant northern roof structure sealed within the flat-roof extension on the northern aspect of the building. Accessed and visible from the loft space of the property.



Photograph 5: Showing the accumulation of droppings – primarily rat and mouse with individual droppings characteristic of brown long-eared bat – at the western end of the loft space. The confirmed bat dropping was identified suspended in a cobweb immediately above this.



Photograph 6: Showing the concrete wall between Camelia and Magnolia Cottages with minor gaps at the top which a bat could potentially use to access between the loft spaces.