

Ecological Impact Assessment and Bat Emergence Surveys

Applands, Plymtree, Devon



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Date of issue: 18th October 2022
Report number: KB22/45

Code of Professional Conduct

The information contained within this report is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

BS 42020:2013

This survey has been undertaken in accordance with British Standard 42020:2013 Biodiversity, Code of practice for planning and development.

Validity of survey data and report

The findings of this report are valid for 12 months from the date of survey.

If a European Protected Species Licence application (if required) has not been made within this period, updated surveys will be required to support a licence application.

Report author	Kari Bettoney BSc (Hons) ACIEEM
Checked by	Ceridwyn Adkins BSc (Hons) MCIEEM
Client	Alyse Spicer
Site address	Applands, Plymtree, Devon, EX15 2JY
OS grid reference	ST052031
Survey dates	Preliminary visual assessment: 14 th July 2022 Emergence surveys: 15 th and 31 st August 2022, and 19 th September 2022
Surveyors	Kari Bettoney Bat Licence: Class 1 and 2 Dormouse Licence: Class 1 Registered Consultant: Bat Mitigation Class Licence (BMCL)
Report date	18 th October 2022
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Checklist - Devon Householder / Building Applications with only bat roost / bird nesting issues

To speed up assessment by the LPA, this form should be completed by the Ecological Consultant and submitted at the beginning of the Ecology Report.

Ecological consultant: Kari Bettoney

Date: 5th October 2022

1. Impact assessment / survey effort

Has the impact assessment / survey been done within the last 12 months and does it meet national guidance requirements? If there have been any deviations from national guidance, please select No in the right-hand column.	Yes	No
	Dates: Preliminary survey: 14 th July 2022 Emergence surveys: 15 th and 31 st August 2022, and 19 th September 2022	

2. Ecological impacts

2a. Proposal impacts on bats / birds and mitigation measures are specified.		Yes (conditions needed) No (no conditions needed)
2b. Proposal has other ecological impacts which the LPA needs to consider.	No	Yes
2c. Is the proposal likely to result in an offence under the Conservation of Habitats and Species Regulations?		Yes (go to 2.d) No (go to 2.e)
2d. If YES (an offence IS likely) Could the works be undertaken, under a Low Impact Class Licence i.e.: <ul style="list-style-type: none"> • Three or fewer roosts are impacted by the proposals, and • The proposal will have a low or temporary impact, and The proposal only effects: <ul style="list-style-type: none"> • Low conservation status roosts for low numbers of: common pipistrelle, soprano pipistrelle, brown long-eared, whiskered, Brandt's, Daubenton's Natterer's and/or - Feeding, day, night and/or transitional roosts for low numbers of serotine and/or Day and/or transitional roosts for low numbers of lesser horseshoe.	Yes	No

2e. If NO (an offence is NOT likely)

Does the roost meet any of the following criteria:

- maternity or hibernation roost
- greater horseshoe bat roost
- grey long-eared bat roost
- more than three species of bat found in small numbers

No (none are met)

Yes (one or more are met)

2f. Does the proposal potentially impact on barn owls?

No

Yes

3. Expertise

Are you, the ecological consultant, registered under either the Level 1 or the Level 2 Bat Survey Class Licence?

Yes

No

Are you a member of CIEEM or a Registered Consultant under Annex B of the Low Impact Class Licence for bats (or under Annex C or D for a serotine or lesser horseshoe roost where relevant)?

Yes

No

Executive Summary

A preliminary visual ecological assessment and bat emergence surveys were undertaken between July-September 2022, at Applands, Plymtree, Devon, EX15 2JY.

This report documents the results of the surveys and provides an Ecological Impact Assessment to inform the Local Planning Authority.

It is understood that it is proposed to make alterations to the building footprint and roof structure which would impact bats roosting within the roof and loft of the bungalow.

Bats

The results of the surveys indicate that the building at Applands is a confirmed day roost for at least two brown long eared bats *Plecotus auritus* and at least one common pipistrelle *Pipistrellus pipistrellus* bat.

A derogation licence from Natural England will be required to allow the development to proceed lawfully. Further surveys may be required for licensing purposes if a derogation licence is required and is not applied for before May 2023.

Mitigation will be required to comply with the licence in a number of ways including the creation of an integrated soffit bat box within the eaves of the south-eastern aspect of the new extension to provide a roost for the common pipistrelle.

A bat roost area for brown long eared bats must be recreated within the western loft void, with suitably placed access points created in the roof (see Section 5.1 and Appendix 1 for specification). Works must proceed to timings stated in Section 5.1.

Breeding birds

No evidence of recent or historic nesting birds was observed. There are few potential locations for bird nesting provision due to a lack of suitable crevices.

Works can proceed with negligible risk to breeding birds providing a pre-works check is carried out (if between March and August inclusive), and if nesting birds are found, works are postponed until the chicks have fledged.

It is recommended that general purpose bird boxes are fitted to trees and within dense shrubs within the garden (see Appendix 1). The bird boxes situated on the building should be removed before mid-February in the year before works commence and re-sited on trees in the garden, to prevent delays caused by nesting birds.

Recommendations for timing considerations, avoidance and mitigation for breeding birds are given in Section 5.3.

Legal responsibilities	
Obtain derogation licence from Natural England	<p>The results of the bat survey indicate that the works can be carried out under a “Low Impact Licence” (Bat Mitigation Class Licence) from Natural England as there are a low number of bats of common species present. The licence will require direct supervision from the ecologist when the roof tiles and other roofing materials are removed.</p> <p>Once the licensed roof strip has been carried out – the ecologist will then sign the building off as free of bats and works can proceed in line with the precautionary method statement below</p>
Precautionary working method	<p>The precautionary working method given in this section must be followed by all workers throughout works following the licensed roof strip.</p> <p>A copy of the precautionary method statement must be kept on site and the contents must be communicated to all workers.</p>
Protection of unexpected bats during works – following roof strip under direct watching brief from the ecologist	<p>Care must be taken to check under any roof covering, tiles, roof timbers, battens, soffits, fascias or flashing for any unexpected bats. If in the unlikely event that a bat is found, work must pause and the ecologist must be contacted immediately by calling 07762 051481.</p> <p>The bat should be covered back up if it is safe to do so, or if not, it should be carefully handled using gloves and placed in a cardboard box with a lid and air holes which is then stored in a cool place, and the ecologist must be contacted immediately.</p>
Timings	<p>Works should be timed to avoid the bats hibernation period (November to March inclusive).</p>
Modern roofing membranes	<p>No modern roofing membrane should be used on the new extension, to prevent issues with bats dying after becoming entangled in pulled fibres from the membrane. Only 1F</p>

	<p>bitumen felt with a hessian matrix to British Standard BS747 or sarking boards must be used.</p>
Nesting bird check	<p>Prior to the start of works, a check should be made for nesting birds. If nesting birds are found then works must be postponed until the checks have fledged which may be for a period of several weeks.</p>
Reptiles	<p>Care must be taken when removing and paving slabs, rocks or piles of vegetation to check underneath for any reptiles to prevent killing or injury to protected reptiles.</p> <p>Removal of slabs or other ground covering materials must be carried out during the reptiles' active season (April-September) and when night temperatures are above 10 degrees Celsius.</p> <p>Slabs should be lifted carefully by hand, checking the underside for any reptiles such as common lizards, slow worms and/or grass snakes. Items should be moved away carefully without crushing any reptiles that may be underneath.</p> <p>If any reptiles are found, then they must be allowed to move off towards suitable cover before works continue. If they have not moved after 30 minutes then the ecologist should be contacted on 07762 051481.</p>

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1. Introduction

A preliminary visual assessment survey of Applands, Plymtree, Devon, EX15 2JY at grid reference ST052031 was undertaken on 14th July 2022 to assess the site for the presence of protected species, and to make recommendations for further survey work as appropriate.

The weather was dry, no cloud cover 0/8 oktas, with a light breeze and a temperature of 31°C.

Bat droppings indicative of long eared bat were identified under the chimney in the loft so further bat emergence surveys were recommended. Bat emergence surveys were carried out on 15th August 2022, 31st August 2022 and 19th September 2022.

1.1. Proposed works

It is understood that it is proposed to add two extensions to the bungalow and convert parts of the loft, with a full removal and replacement of the tiles and felt. The roof shape will be remodelled to create a flat section involving removal of the ridge beam.

1.2. Survey aims

The purpose of this assessment is to ascertain which protected species are present within the site, and to inform avoidance, mitigation, compensation and enhancement measures to protect these species during and after works.

The results of these surveys will be used to categorise the roost and assess the impact of this development on any protected species present. The assessment data will be used to inform working methods, including avoidance, mitigation, compensation and enhancement measures required to safeguard protected species throughout the development and to inform the local Planning Authority when reviewing the planning application

The additional emergence surveys confirm a European Protected Species (EPS) licence will be required to allow the proposed development to proceed lawfully.

This report documents the results of the preliminary visual assessment at the site and the emergence surveys.

This survey has been prepared in accordance with the Bat Conservation Trust's "Bat Surveys Good Practice Guidelines" (Collins, 2016).

1.3. Building description

The main house comprises a brick and block part-rendered bungalow constructed during the 1960s. It has a complicated roof structure comprising wooden trusses, with concrete tiles that are underlined with bitumen felt with reinforced polythene membrane in places. The bungalow has cavity walls that are insulated.

The house has one chimney, with associated lead flashing and gaps underneath which could be used by roosting bats or as access to the loft interior.

The garage is constructed of block with a single pitched roof constructed from corrugated fibre cement sheets laid to timber bearers.

1.4. Site description

The building is situated in a rural location within the village of Plymtree, near Cullompton in mid Devon.

The building is immediately surrounded by gravel and concrete paths, cultivated beds and amenity grassland lawned areas.

The boundaries comprise a mix of native and non-native shrubs and trees. The site is well connected to the wider landscape via a series of traditional Devon hedges and wooded stream corridors. The site is well-linked to areas of high-quality bat habitat, via quiet lanes, traditional Devon hedge banks and watercourses. Overall, the site and surroundings provide an excellent landscape for commuting and foraging bats.

The immediate surrounding of the site is currently unlit by municipal lighting. Some domestic exterior lighting is present.

1.5. Surveyors

The survey was completed by Kari Bettoney, an Associate Member of the Chartered Institute of Ecology and Environmental Management (ACIEEM), an ecologist with seven years of professional experience and qualified as having the required Competency for Species Survey as outlined by the Chartered Institute of Ecology and Environmental Management.

<https://cieem.net/resource/competency-framework/>

Kari Bettoney holds a Level 2 Class Licence in relation to bats which permits the surveying of bats using artificial light, endoscopes, hand, and static hand nets.

Kari holds a Level 1 dormouse licence which permits surveying and handling of hazel dormouse.

1.6. Site photographs



Figure 2 Landscape view of the building surveyed ©Google Earth/CNES 2022

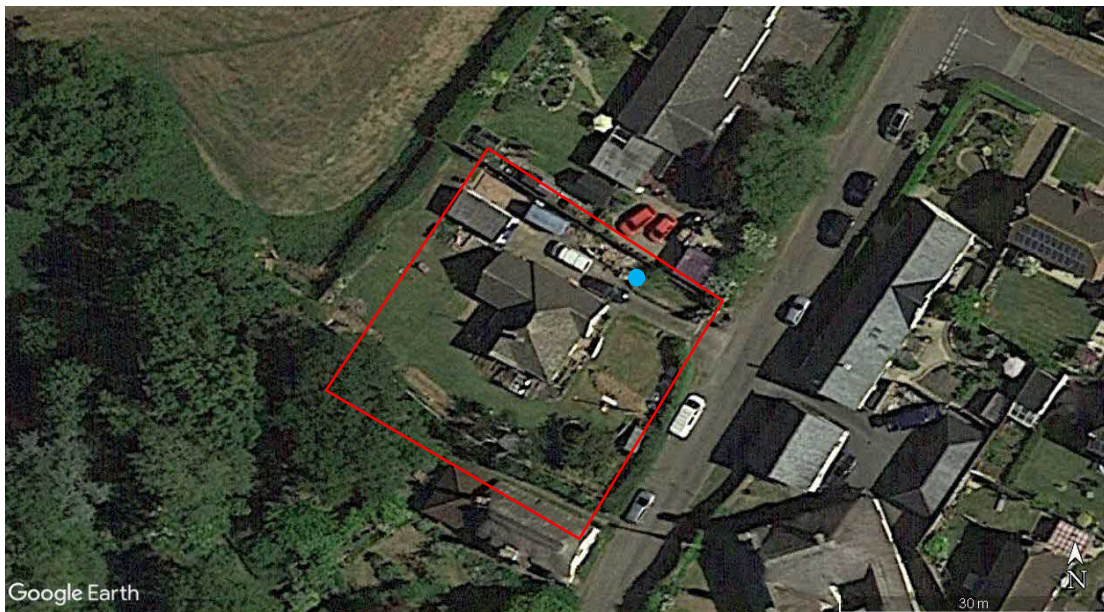


Figure 3 Location of the buildings surveyed (red) ©Google Earth 2022

2. Methods

2.1. Bat roost assessment

A preliminary visual assessment was undertaken to check for field signs of bats such as droppings, urine staining, rubbing, feeding remains or other evidence that would indicate the building is used by bats. Any bat droppings seen were identified by colour, texture and size, and a sample was collected for DNA testing, which may be required for certain species. An assessment of the potential for roosting within any accessible voids or cavities within the building was undertaken, and any possible access points that have potential to be used by bats were identified. Equipment available during the survey included a torch and head torch, ladder, endoscope, binoculars and a Peersonic RPA3 full spectrum bat detector. A sample of any bat droppings or other protected species field signs found was taken (if appropriate).

During the preliminary assessment, a visual assessment was conducted of any buildings, structures or trees likely to contain suitable roosting locations for bats. An assessment of areas suitable for breeding birds within structures and vegetation was undertaken. The wider site was assessed for suitability for other protected species that may be impacted by the development.

The preliminary visual assessment survey was completed at an optimal time for the inspection of buildings and structures for bat roosts. Areas searched did not appear to have not been cleaned/swept prior to survey.

Emergence surveys were carried out on 15th August 2022, 31st August 2022 and 19th September 2022.

Three bat surveyors were stationed at vantage points around the building, and had good visibility of all parts of the building. Each surveyor was equipped with a bat detector (Peersonic RPA3 or Echo Meter Touch and iPad) and recorded all bat calls that were heard throughout the survey. Bats emerging from the building were recorded on survey sheets and general comments on bat activity in the area were also noted. Infra-red video filming equipment (SANNCE and Reolink closed circuit system and screen) was used to increase visibility once light levels dropped and to record the locations of any emerging bats. Bat call data were reviewed using Sonobat and video footage was reviewed using VLC player.

A Wildlife Acoustics Songmeter2 bat detector was left in the loft for a period of at least 9 nights and was left to run until the batteries ran out. The recorder was set to run from 15 minutes before sunset until 15 minutes after sunrise each day. Data from the detector was analysed using Sonobat Bat Analysis software.

The survey method complies with guidelines produced by the Bat Conservation Trust (Collins, 2016).

Table 1 Survey details

Date of survey visit	Start and end times and time of sunset	Structure reference / location	Equipment used	Weather
14 th July 2022	-	Applands, Plymtree	Torch	Dry, no cloud 0/8, gentle breeze and a temperature of 16°C.
15 th August 2022	Start: 20:20 End: 22:05 Sunset: 20:35	Applands, Plymtree	Peersonic RPA3 Batbox Duet EMTouch + iPad SANNCE CCTV and screen and Reolink CCTV system and tablet	Temperature: Start: 19°C End: 17°C Wind: 1 Cloud: 6/8 oktas Precipitation: none
31 st August 2022	Start: 19:45 End: 21:30 Sunset: 21:35	Applands, Plymtree	Peersonic RPA3 EMTouch + iPad Reolink CCTV system and tablet	Temperature: Start: 21°C End: 18°C Wind: 1 Cloud: 4/8 oktas Precipitation: none
19 th September 2022	Start: 19:19 End: 20:49 Sunset: 19:19	Applands, Plymtree	Peersonic RPA3 EMTouch + iPad Reolink CCTV system and tablet	Temperature: Start: 15°C End: 11°C Wind: 1 Cloud: 2/8 oktas Precipitation: none
Surveyors: Kari Bettoney, Samantha Pickering, Emma Kelly				

1.2. Breeding birds

A visual assessment of habitats suitable for breeding birds was undertaken. A search of the interior and exterior of the buildings was carried out to locate evidence of any recent or historic breeding bird species. A visual inspection of other habitats on site suitable for use by nesting birds was undertaken. Any signs of current or historic breeding birds were recorded.

1.3. Assessment of protected habitats and species

A visual assessment was made to assess the suitability of habitats present to support other protected species or habitats that will be impacted by the proposed development. A search for field signs of species likely to be found within the habitats present was made and any evidence was target noted.

1.4. Surveyors

Preliminary survey and emergence surveys

The survey was completed by Kari Bettoney, an Associate Member of the Chartered Institute of Ecology and Environmental Management (ACIEEM), an ecologist with five years of professional experience, and qualified as having the required Competency for Species Survey as outlined by the Chartered Institute of Ecology and Environmental Management. Kari Bettoney holds a Level 2 Class Licence in relation to bats, which permits the surveying of bats using artificial light, endoscopes, hand, and static hand nets. Kari holds a Level 1 dormouse licence which permits surveying and handling of hazel dormouse.

Emergence surveys

Emma Kelly holds a Class 1 dormouse licence and is a bat surveyor with two years' bat survey experience.

Samantha Pickering holds a Class 4 bat licence and is an experienced bat surveyor with over 10 years' experience who specialises in bats.

1.5. Survey constraints

No survey constraints were identified.

Bats and nesting birds can be found roosting in numerous discreet locations within structures, and their field signs may not always be visible during a preliminary visual assessment.

Calls of brown long eared bats not always detectable as they echolocate quietly and may fly using visuals without echolocating.

It is therefore possible that some field signs of other bats or breeding birds may have been inadvertently missed.

1.6. Biological records data search

A data search was not carried out due to the small nature of the proposed development and the high number of bat species known to be present within the county of Devon. All bat species will be considered within the assessment. It was considered that a further data search would not provide any meaningful information.

1.7. Desk study

A desk study was carried out using the Defra Magic Map to search for statutory and non-statutory designated sites, and European Protected Species Licences within 2 kilometres of the site.

3. Results

3.1. Desk study

The site is located within the following conservation priority areas. There are six European Protected Species Licences within 2 kilometres of the site.

Designation type	Name	Notes	
SSSI impact risk zone	Killerton SSSI	Not for householder developments	
European Protected Species Licences within 2 kilometres			
Case Reference	Species*	Breeding Roost?	Distance from site (kilometres)
2015-8709-EPS-MIT	C-PIP, S-PIP	N	2
2015-6738-EPS-MIT	C-PIP	N	0.8
2014-304-EPS-MIT	BLE, C-PIP	N	2
2015-8709-EPS-MIT-1 2015-8709-EPS-MIT-2	C-PIP, S-PIP	N	1
2019-39453-EPS-MIT	BLE	N	1.3
*C-PIP Common pipistrelle <i>Pipistrellus pipistrellus</i> , S-PIP Soprano pipistrelle <i>Pipistrellus pygmaeus</i> , BLE Brown long eared <i>Plecotus auritus</i> .			

Results of desk study for 2 kilometres around site

3.2. Preliminary bat roost assessment

Bungalow

Potential bat access points were identified via missing cement in the chimney, gaps under and around the ridge tiles and gaps under flashing around the chimney. Bat droppings indicative of long eared bats were found on the loft insulation and around the chimney breast. A dropping indicative of a *Pipistrellus* sp. bat was found stuck to an exterior wall on the eastern corner of the building.

Habitats adjacent to the buildings include strong linear features (hedgerows) which are highly likely to be used by foraging and commuting bats, but as the development boundary is small and there is an abundance of habitat in the wider area.

Garage

No evidence of bats was observed within the garage, which lacks suitable roosting crevices and is light and draughty.

3.3. eDNA testing of bat droppings

The calls of brown long eared bat and the rarer grey long eared bat *Plecotus austriacus* cannot be separated by bat call analysis alone. Therefore, eDNA testing of droppings of *Plecotus* and *Myotis* species must be undertaken to identify bats to species level.

Bat droppings were observed stuck to the chimney breast and on the insulation below. The droppings were collected and tested by the University of Warwick and confirmed as brown long eared bats (see Appendix 1).

Table 2 Emergence survey information

Date	Start and end times	Species and numbers	Roost type	Structure	Roost location	Access points
15th August 2022	Start: 20:20 End: 22:05 Sunset: 20:35	3 brown long eared 1 common pipistrelle	Day	Applands	Loft Under tile on eastern corner	Under tiles on southern corner and/or around chimney Gap under tile
31st August 2022	Start: 19:45 End: 21:30 Sunset: 21:35	1 brown long eared bat	Day	Applands	Loft	Under tiles on southern corner and/or around chimney
19th September 2022	Start: 19:19 End: 20:49 Sunset: 19:19	No bats seen to emerge	Day	Applands		

1st Dusk emergence survey

The 1st dusk emergence survey was completed on 15th August 2022.

A total of two long eared bats were seen to emerge from the area close to the chimney. The first came from under a tile close to the chimney on the southern corner of the bungalow at 21:12 and a further emergence of a long eared bat from the chimney side at 21:25 was observed.

One common pipistrelle was seen to emerge from under a tile on the eastern corner of the bungalow at 20:43.

The first bat heard flying was a common pipistrelle bat at 20:35, followed by a serotine *Eptesicus serotinus* at 21:20, a noctule bat *Nyctalus noctula* was heard flying high over the site at 21:04. A soprano pipistrelle *Pipistrellus pygmaeus* was heard at 21:08. A *Myotis* sp bat was heard but not seen at 21:47 in the rear garden.

Soprano and common pipistrelle and serotine bats were heard foraging and flying in the vicinity of the garden and semi-mature trees on the boundary that runs west-south, which forms an important commuting and foraging habitat for bats.

Other common pipistrelle and soprano pipistrelle activity was recorded sporadically during the entire survey with some periods of continuous foraging.

Weather conditions were good for bat activity throughout the survey.

2nd Dusk emergence survey

The 2nd dusk emergence survey was completed on 31st August 2022.

No bats emerged from the building during the survey.

The first bat heard flying was a common pipistrelle bat at 20:06, soprano pipistrelle and serotine bats were heard at 20:25 and 21:07 respectively. A *Myotis* bat was seen foraging along the treeline. A long-eared bat was heard but not seen at 21:21.

Weather conditions were good for bat activity throughout the survey.

3rd Dusk emergence survey

The 3rd dusk emergence survey was completed on 19th September 2022.

No bats emerged from the building during the survey.

The first bat heard flying was a common pipistrelle bat at 19:25, soprano pipistrelle and serotine bats were heard at 20:00 and 20:04 respectively. Activity from foraging bats was frequent for the duration of the survey, and a number of social calls were recorded indicating bats interacting as they moved towards the mating season.

Weather conditions were good for bat activity throughout the survey.

3.4. Static bat detector

The Songmeter2 bat detector was left in the loft from 30 minutes before sunset on the 15th August 2022 until the batteries ran out on 24th August 2022.

No bat calls were recorded on the detector during the monitoring period. It is unclear if this is due to placement of the detector or because the bats echolocate very quietly and may not always trigger the detector.

Weather conditions throughout the survey period were suitable for bat activity on the majority of nights with rain on only one night, a temperature and wind conditions suitable throughout the nine nights monitoring.

3.5. Site photographs



1. Bat dropping found on loft floor



2. Gap around roof timber and gap in membrane



3. Dropping on exterior wall



4. Gaps under tiles suitable for use by bats



5. Gap under chimney flashing



6. Gap under ridge tiles

3.6. Breeding birds

Bungalow

No breeding birds were observed using the building during the surveys. There is potential for use by crevice-nesting bird species at various points around the roof structure including northern gable verge and eastern loft window.

Garage

No breeding birds were observed using the building during the surveys and there are no suitable crevices that birds might use. It has low potential to be used by birds such as robins *Erithacus rubecula*, however no field signs of nesting birds were observed.

3.7. Reptiles

The paved area to the west of the bungalow has potential to support reptiles such a common lizard *Zootoca vivipara*, slow worm *Anguis fragilis*, adder *Vipera berus* and grass snake *Natrix helvetica*.

3.8. Invasive species

No invasive species were recorded during the survey.

3.9. Lighting

The surroundings of the building are generally unlit, with some domestic lighting on the exterior of the property. Increases in lighting would impact light-averse species.

4. Assessment

4.1. Assessment of potential impact on bats

The proposal has the potential to impact any roosting bats directly, by killing and injuring individuals during works and by blocking access to a bat roost, and damaging or destroying a bat roost. Any of these would be an offence under the legislation.

Bats can be safeguarded by ensuring a roost is retained within the loft for the brown long eared bats. The pipistrelle can be safeguarded by ensuring a roost is recreated for the common pipistrelle bat as close to the existing location as practicable. All bats will be protected from killing and injury at the start of works by a watching brief, and bat boxes will be provided during works to ensure bats have a roost at all times.

4.2. Timings - Bats

The works will be carried out according to the Precautionary Method Statement and in compliance with the timings stated in this report.

Works carried out outside the bats sensitive hibernation period will have Negligible impact on the roosting bat. To prevent disturbance of unexpected hibernating bats works will be carried out during the bats' active season (April-September), ideally with the start of works in April or September.

4.3. Assessment of potential impact on birds

No evidence of nesting birds was observed within the buildings during the survey. Suitable bird nesting habitat exists within the wider site. The applicant states that the bird boxes on the bungalow are used by nesting sparrows.

Removing the bird boxes before the bird nesting season and relocating them to trees within the garden will reduce the possibility of impacting breeding birds.

To prevent damage to breeding birds, their nests and young, a breeding bird check of all areas of the roof and eaves should be completed a maximum of 48 hours before works commence, to ensure there is no impact. In the unlikely event that nesting birds are found to be using the buildings, works must be postponed until the chicks have fledged.

No negative impact on nesting is anticipated as a result of this development if these precautions methods are adhered to.

4.4. Reptiles

The areas of habitat to be removed to the north of the building have suitability for use by common reptiles including grass snake, common lizard and slow worm. The area is suitable for both summer use and as hibernaculum. Without mitigation, clearing the habitat at the wrong time of year could result in killing or injuring reptiles.

This impact can be minimised by following the precautionary method statement below to prevent killing or injury to protected reptiles (see Legal Responsibilities table on page 5)

4.5. Hedgehog

Open footings pose a hazard to hedgehogs that could become trapped.

This impact can be prevented by placing a gently sloping plank in any footing left open overnight.

4.6. Badger

Open footings pose a hazard to badgers that could become trapped.

This impact can be prevented by placing a gently sloping plank in any footing left open overnight.

4.7. Invasive species

No impact as no invasive species were recorded.

4.8. Lighting

It is understood that no new lighting is proposed, but if any is fitted in future it should be low-lux, low level lighting that is on a timer and motion sensor.

Any new windows will be covered with curtains or blinds at night reducing light spill as a result of this development.

If these recommendations are followed, no negative impacts from increased light levels or light spill are foreseen.

5. Mitigation

5.1. Bats

The house is a confirmed bat roost for at least two brown long eared , and one common pipistrelle .

The proposed works will result in damage or destruction of two bat roosts in two locations, for a total of three bats. A derogation licence from Natural England will be required to allow the development to proceed lawfully (see Section 5.2)

Bats must be safeguarded throughout works and an ecological watching brief will be needed when the tiles, soffits or fascias are removed, or for any works in the loft. Any bats that are found will be captured by the ecologist and placed in one of three bat boxes which must be erected on site during the works.

A new roost must be created for the brown long eared bats by recreating the roost near to the chimney in the area currently used by bats. The void will measure 3 metres x 4.3 metres x 2.3 metres at the apex. New access points must be installed in the form of two "bat access tiles" to match the proposed roof tiles with a corresponding hole cut out behind it in the roofing felt to permit bat access to the interior (see Figure 4).

The pipistrelle bat roost will be replaced by an in-built soffit box roost on the south-east elevation near the eastern corner, as close to the existing location as practicable (See Section 5.1 and Appendix 1).

The bats will be safeguarded during the period of works by the provision of three woodcrete/woodstone bat boxes erected at a minimum height of 3 metres on mature trees within the garden.

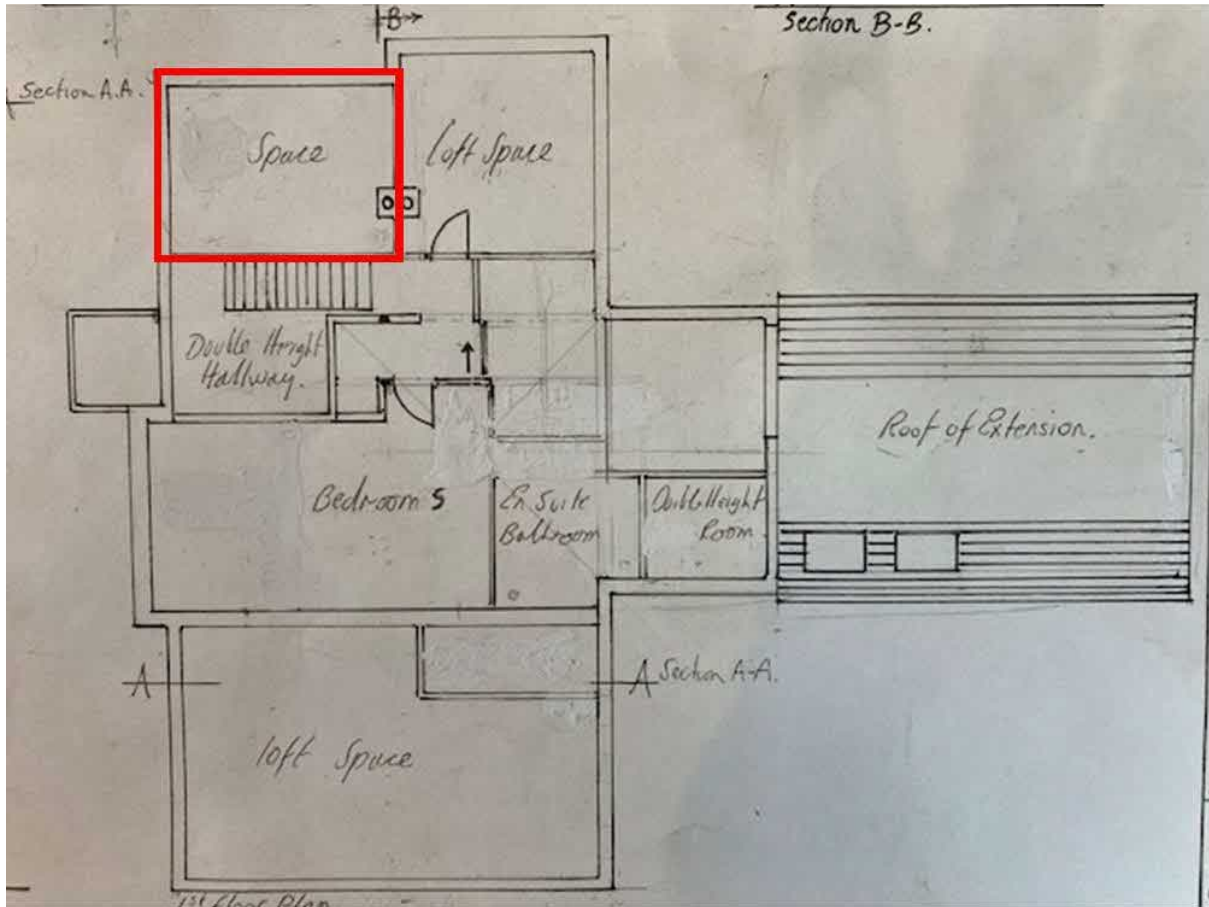


Figure 4 Bat roost for long eared bats

Roofing membranes

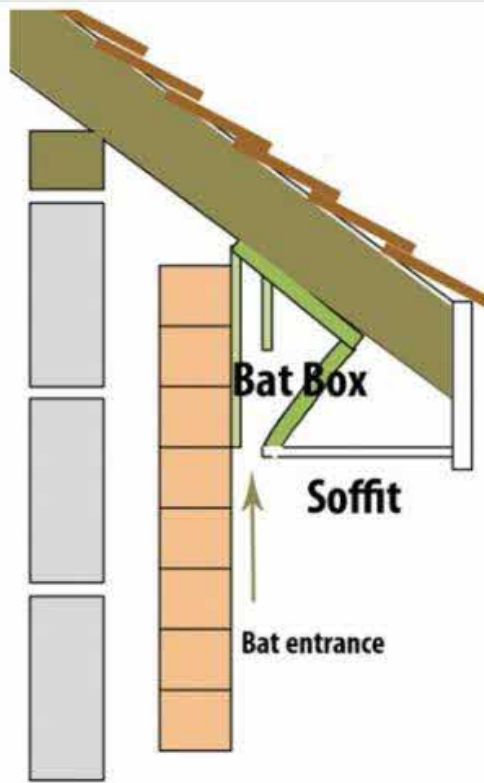
No modern roofing membranes (breathable or otherwise) must be used to prevent creating an entanglement hazard to any bats that may use the loft void or gaps between roof covering and the membrane in the future (see Section 5.1 for specification). Only 1F bitumen roofing felt to BS 747 or sarking boards should be used.

Timings: bats

Works will be carried out according to the Method Statement and in compliance with the timing requirements of the derogation licence.

Works must be carried out outside the bats sensitive hibernation period to prevent disturbance of unexpected hibernating bats. The start of the development must be during the bats active season (April-September).

The roost for the long eared bats should be re-covered as quickly as possible after the roof tiles are removed.



Example of bat soffit box incorporation into building. For soffit box specification and fitting see Appendix 1.

5.2. Derogation licence (bat licence)

A derogation licence from Natural England will be required to allow the works to proceed lawfully while ensuring that bats are safeguarded before and after works. The licence will contain conditions that works are carried out at the correct time of year, with an ecological watching brief required for any removal of roof materials or soffit/fascias, or works within the loft. The licence will require the bat roosts to be retained if possible, or recreated if this is not practicable. The licence will also specify the type of roofing membrane that must be used, to prevent entanglement hazards to bats. Bats will need to be provided with a roost at all times during the works.



Figure 5 Common pipistrelle bat emergence point

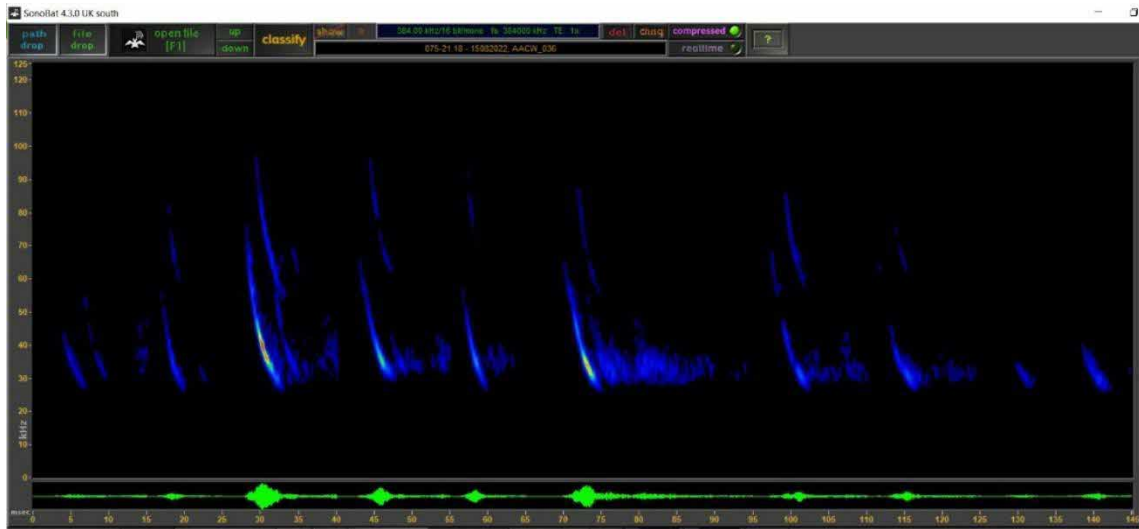


Figure 6 Sonogram of long eared bat echolocation call recorded at 21:18 on 15th August 2022 by surveyor by chimney



Figure 7 Area where long eared bats were seen emerging (red) and probable alternative access point (yellow)

5.3. Breeding birds - buildings

No evidence of nesting birds was recorded within the building structure during the survey. The applicant states that the bird boxes on the bungalow are used by nesting sparrows *Passer domesticus*.

A full assessment will be undertaken, and any mitigation, compensation and enhancements for birds will be designed once the results of the further surveys are known.

The applicant states that the bird boxes on the bungalow are used by nesting sparrows. The boxes should be removed by mid-February and relocated to trees in the garden to prevent delays due to nesting birds. This will remove any impact on breeding birds as a result of this development.

5.4. Reptiles

Removal of the paving slabs and vegetation to the north of the bungalow must be carried out under the Precautionary Method Statement. A copy of the Method Statement must be kept on site and communicated to all operatives (see Legal Responsibilities table on page 5).

5.5. Hedgehog

Open footings pose a hazard to hedgehogs *Erinaceus europaeus* that could become trapped.

To prevent hedgehogs becoming trapped in footings, a gently sloping plank must be left in any footing left open overnight to allow them to escape.

5.6. Badger

Open footings pose a hazard to badgers that could become trapped.

To prevent badgers *Meles meles* becoming trapped in footings, a gently sloping plank must be left in any footing left open overnight to allow them to escape.

5.7. Invasive species

No action with relation to invasive species is required.

5.8. Lighting

Ensuring any new lighting is low-lux, low level lighting which is hooded and on a motion sensor and short duration timer will reduce negative impacts on protected species by minimising artificial lighting.

Fitting thick curtains to any new windows will also serve to protect the dark garden and surroundings from light pollution.

5.9. Post-development monitoring

Requirements for post-development monitoring (if applicable) will be made during the licence application.

6. Legislation

Protected Species Legislation

Bats

Bats and their breeding or resting places (roosts) are protected under the Wildlife and Countryside Act 1981 (as amended), and the Conservation of Habitats and Species Regulations 2019 (as amended). The law applies regardless of whether or not the bats are present at the time.

Under these laws it is an offence to:

- capture, kill, disturb or injure bats (on purpose or by not taking enough care);
- damage or destroy a breeding or resting place (even accidentally);
- obstruct access to their resting or sheltering places (on purpose or by not taking enough care); or
- possess, sell, control or transport live or dead bats, or parts of them.

Seven species of bat are listed as being of principal importance, in the Secretary of State's opinion, for the purposes of conserving biodiversity. Under Section 41 (England) of the Natural Environment and Rural Communities Act (2006) there is a need for these species to be taken into consideration by a public body when performing any of its functions with a view to conserving biodiversity.

These seven bat species are barbastelle, Bechstein's, noctule, soprano pipistrelle, brown long-eared, greater horseshoe and lesser horseshoe, and these are the subjects of National and Local Biodiversity Action Plans.

Works that can affect bats

Advice must always be sought from a licensed ecologist or the Bat Conservation Trust or Natural England before carrying out any of the following works where a bat roost is present, to prevent potentially committing an offence:

- renovating, converting or demolishing a building
- cutting down or removing branches from a mature tree
- repairing or replacing a roof
- repointing brickwork
- insulating or converting a loft
- installing lighting in a roost, or outside if it lights up the entrance to the roost
- removing commuting habitats such as hedgerows, watercourses or woodland
- changing or removing their foraging areas
- using insecticide
- treating timber

Nesting birds

All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended) from being killed, injured or captured, whilst their nests and eggs are protected from being damaged, destroyed or taken. Birds which are listed under Schedule 1 of the Act are given additional protection against disturbance.

Hazel Dormouse

Hazel dormice are protected under national and international legislation, the most recent of which is the Conservation (Natural Habitats &c.) Regulations 1994 implement EC Directive 92/43/EEC, known as The Habitats Directive. It's an offence to deliberately kill, capture, or disturb a hazel dormouse. It's also illegal to damage or destroy its breeding site or resting place

Reptiles

It is illegal to kill or injure protected reptiles when carrying out works related to development (Wildlife and Countryside Act 1981).

Invasive plant and animal species

The Wildlife and Countryside Act, 1981

Section 14 prohibits the introduction into the wild of any animal of a kind which is not ordinarily resident in, and is not a regular visitor to, Great Britain in a wild state, or any species of animal or plant listed in Schedule 9 to the Act.

Planning legislation

The legislative framework for the protection of habitats and wildlife within the UK in relation to development is provided through Acts of Parliament, Regulations and guidance.

The main Acts of Parliament relating to wildlife are:

The Conservation of Habitats and Species Regulations 2017' as enacted by 'The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019'

The Conservation of Habitats and Species Regulations 2017 provides safeguards for European Protected Sites and Species (as listed in the Habitats Directive). This has recently been amended by the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019 which continue the same provision for European protected species, licensing requirements, and protected areas after Brexit.

Wildlife and Countryside (W&C) Act 1981 (as amended).

Countryside and Rights of Way (CRoW) Act 2000.

Natural Environment and Rural Communities (NERC) Act 2006.

Protection of Badgers Act 1992.

Hedgerow Regulations 1997.

NERC Act and Countryside and Rights of Way (CRoW) Act 2000

Bats are also a European Protected Species and legally protected under the Conservation of Habitats and Species Regulations 2017, the W&C Act 1981 and the CRoW Act 2000. This legislation makes it an offence to kill, injure, capture or disturb bats and obstruct access to or damage their place of shelter. Bats are also included on S41 of the NERC Act 2006

Planning policy

Sites, habitats and species of nature conservation value can be material considerations in any planning decision and have policies at national, regional and local levels designed to safeguard their conservation status. Policies related to ecology and nature conservation are set out in the National Planning Policy Framework (Ministry for Housing, Communities and Local Government, 2019) and the Plymouth and South West Devon Joint Local Plan 2014 - 2034.

These policy documents aim to maintain and enhance biodiversity through the full considerations of important sites, habitats and species in planning decisions. Adverse impacts on such features are to be avoided, or appropriate mitigation and compensation must be implemented to reduce the scale of the impacts. In addition, development proposals should, wherever possible, incorporate opportunities to enhance biodiversity as part of good design

National Planning Policy Framework

In an effort to simplify national planning policy in England, the National Planning Policy Framework (NPPF) was published in March 2012. It provides guidance to local planning authorities on their local plans. Chapter 11 deals with the natural environment, including biodiversity, and replaces Planning Policy Statement 9 (PPS9). 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. Paragraph 118 sets out how planning authorities should deal with biodiversity when considering planning applications. One element of this is the application of the 'mitigation hierarchy' (see Section 5). This puts avoiding significant harm to biodiversity or mitigating such harm ahead of compensation, which is a last resort.

7. References

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Appendix 1

	<p>Bat soffit box for pipistrelle bat (permanent provision)</p> <p>Available from Wildcare.co.uk and other suppliers</p>
	<p>Suggested box for common pipistrelle bat (provision for during works)</p> <p>Greenwoods Ecohabitats single cavity box (Or similar woodcrete/woodstone box suitable for crevice-dwelling bat species)</p> <p>Available from greewoodsecohabitats.co.uk</p> <p>Or designs and stockists are available</p>



Bat access tile set

Various designs/finishes are available

See examples [nhs.co.uk](https://www.nhs.co.uk)

Other stockists and designs are available to suit the specifications of the build.

Appendix 2

Bat dropping eDNA test result



26 August 22

Re: Identification Results for Kari Bettoney, Wildlife Surveying

Job number 18703, received 15 August 2022

Sample labelled: S1 Applands Plymtree 14/7/22

PCR amplification successful. DNA sequence:

ATGACCAACATTGAAATCCCACCCTCTCATAAAAATTATCAATGACTCATTATTGA
CTTACCTGCTCCCTCAAATATTTTCATCATGAGAACTTTGGATCTCTTCTAGGCATTG
CCTACAC

Phylogenetic analysis identification: *Plecotus auritus*

Confirmed by maximum likelihood, maximum parsimony, bootstrap 100%.

Best regards,

Professor Robin Allaby

The results and conclusions in this report are based on an investigation of mtDNA sequence analysis. The results obtained have been reported with accuracy. The interpretation represents the most probable conclusion for the DNA sequence obtained rather than the sample provided given current levels of species data. It should be borne in mind that different circumstances might produce different results. Therefore, care must be taken with interpretation of the results especially if they are used as the basis for commercial recommendations.

Professor Robin Allaby

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