Moor to Sea Ecology

Ecological Appraisal

Site location:

The Vicarage, Woodbury Salterton

Report Date:

November 2023

Author:
Katie Jones BSc. (Hons), MCIEEM

Moor to Sea Ecology Ltd
4 Prospect Terrace
Colyton
Devon
EX24 6NR

t. 07947345689
e. katie@moortoseaecology.co.uk

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Devon Wildlife Checklist (for front of Wildlife Report.)

A.1 Protected and priority species (relates to question 13a in the planning application form). A tick or cross must be placed in all boxes in column two (shaded) and then, where there is a tick, all other boxes in that row. Where species are present please email this form to Devon Biodiversity Records Centre - DBRC@dbrc.org.uk.

Location	The Vicarage, Woodbury Salterton, EX5 1PG	Grid reference for the centre of the site (6 digits)	SY 0136 8907	Planning application reference	N/A
Name of surveyor & consultancy	Katie Jones – Moor to Sea Ecology	Date that survey undertaken	11th July 2023 (Preliminary Roost Appraisal) Dusk Emergence Surveys –10th August, 31st August, & 18th September 2023.	Sent to DBRC Y/N	Y

Designations / important habitats / sites of geological importance (relates to questions 13 b & c in the planning application form)

A tick or cross must be placed in all boxes in column two and then, where there is a tick, all other boxes in that row. Designation	Within site or potential impact	Name of Site	Relevant organisation consulted & response
No statutory sites within a 2km radius of the site			

Species – terrestrial, intertidal or marine	Walkover shows that suitable habitat present and species reasonably likely that species will be found	Detailed survey needed to clarify impacts and mitigation required	Detailed survey carried out and included	Species Present (P) or assumed to be present (A)	Impact on species	EPS offence	Grid reference
Nesting birds	√	x	x	Absent	X Precautionary timing measures	x	N/A
Roosting bats	√	√	√	P. Brown long-eared bat, serotine, whiskered bat and common pipistrelle	√	√	N/A
Foraging bats	√	√	√ with emergence surveys	P. Brown long-eared, common pipistrelle, lesser horseshoe, Myotis sp, noctule, serotine & soprano pipistrelle	√	x	N/A

Contents

Executive Summary

This survey report details the findings of an Ecological Appraisal focusing on the suitability of a house known as The Vicarage, for roosting bats and nesting birds. The property is located in the village of Woodbury Salterton, approximately 10km to the east of Exeter city centre, Devon.

It is proposed to undertake roof repairs such as replacing the ridge tiles, replacing the lead valley on the western elevation, removing the external chimney flue and replacing the patched slates on the western elevation to slates more in keeping with the remainder of the roof. Additionally guttering will be replaced around the house.

There are no statutory sites designated for nature conservation importance within, immediately adjacent to, or within a 2km radius of The Vicarage.

Large accumulations of medium sized and small bat droppings were found in the loft space on the western elevation (referred to in the report as Roof 1), as well as a single long-eared bat. DNA analysis confirmed that the droppings were those of brown long-eared bat, common pipistrelle, serotine and whiskered bats. Bat droppings were also present within Roof 2, which lies to the north-east of Roof 1, and Roof 3, which lies to the south-east of Roof 1 and these were confirmed to be brown long-eared bats and serotine (Roof 2), and brown long-eared bat (Roof 3).

Due to the presence of large accumulations of bat droppings from four species of bat together with the presence of one actual bat, the house was assessed as a confirmed roost, and three further dusk emergence surveys were undertaken to characterise the type of roosts present. A maternity roost for brown long-eared bats was identified within Roof 1, with bats accessing the roost along the eaves and gable ends of Roof 1 and the adjacent Roof 3. A maternity roost for serotine bats was also identified within Roof 1 with bats noted accessing the roost via a hole at the eaves on the southern elevation. Three day roosts for small numbers of common pipistrelle were noted in Roof 1, Roof 3 and Roof 2, four day roosts for small numbers of brown long-eared bats were noted in Roof 1 and Roof 3 and one day roost for serotine was noted in Roof 3.

The proposed works will retain all the bat roosts within the building, however repairs to the roofs will result in the loss or damage of several of the identified bat access points. Therefore a European Protected Species Licence must be obtained prior to any works that will affect the roof or eaves being undertaken. Works must be timed to avoid disturbing the bats in the maternity colonies, with works undertaken in January/February. All works to the roof and eaves must be completed by the start of April. More details on the mitigation measures are provided in the text.

The dusk emergence surveys revealed that at least seven species of bat use the habitats surrounding the Vicarage for foraging. Species present include bats, which are particularly vulnerable to the effects of light spill, such as horseshoes, Myotis and brown long-eared bats. Therefore it is recommended that no external lighting is installed once the owners move in. If limited security lighting is required it should be on a short duration timer and comprise LED luminaires.

This summary is an extract of the report. Please ensure the report is read in its entirety for detailed survey findings and recommendations.

1. Introduction

1.1. Background and Purpose of Document

Moor to Sea Ecology has been commissioned by the owner of the property, Michaela Wright, to carry out an Ecological Appraisal comprising a Data Search, Preliminary Roost Appraisal, and three further Dusk Emergence Survey Assessments. The Vicarage (hereafter referred to as 'the site'), comprises a brick, Victorian two storey house with three separate loft spaces. The site is located within the village of Woodbury Salterton, Devon.

The Data Search will identify any statutory sites designated for wildlife within a 2km radius which could be affected by the proposed works. The Preliminary Roost Appraisal aims to describe baseline ecological conditions and determine potential ecological constraints in the form of legally protected and notable bat and bird species. The Dusk Emergence Surveys were undertaken to confirm the presence/absence of roosting bats and if present, identify and characterise roosts, as well as determining likely impacts from the proposed roof repair works. Refer to Appendix 1 for details of policies and legislation relating to roosting bats and nesting birds.

The assessment is undertaken in accordance with guidelines for Preliminary Ecological Appraisal produced by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017), Bat Surveys for Professional Ecologists. Good Practice Guidelines (4th edition) (Collins, 2023) and UK Bat Mitigation Guidelines (Reason et al., 2023).

1.2. Site Location and Description

The site is located in the village of Woodbury Salterton, approximately 10km to the east of Exeter city centre (OS Grid Reference at approximate centre of site: SY 0136 8907). It is situated within approximately 0.6ha of mature gardens and surrounded by mature trees and shrubs. An orchard bounds the site to the east, agricultural land to the north and west and Woodbury Salterton village to the south. Within the wider area, habitats suitable for roosting and foraging bat species include other residential dwellings approximately 60m to the south, agricultural pasture bound by hedgebanks, a stream approximately 100m to the west and several large lakes, the closest of which is approximately 1.1km to the south-west of the site.

The site comprises the Vicarage, a two storey four bedroom Victorian house with three separate loft spaces. There is also a cottage which adjoins the Vicarage to the north and also a separate garage, these two structures were not surveyed and do not form part of this report. Detailed building descriptions are provided in Section 4.2 with images provided in Appendix 2.

1.3. Proposed Works

It is understood that it is proposed to undertake repairs to the roof of the Vicarage including installing new tiles along the ridge of Roof 1, replacing the lead valley on either side of the dormer on the western elevation of Roof 1, removing the external flue on the eastern chimney within Roof 3, adding

new gutters around the dormer on the southern elevation of Roof 3 and on the southern and northern elevation of Roof 2. See Existing layout + roof, Drawing No. 2342 SK003, dated 10/08/2023.

2. Survey Methods

2.1. Desk Study

2.1.1. Designated sites

A desk study to identify statutory designated sites of conservation importance within a 2km radius of the site was undertaken using the MAGIC website www.magic.gov.uk and the Devon County Council's Environment Viewer. These websites were accessed for information in November 2023.

The data search includes records of statutory sites of nature conservation importance such as Special Areas of Conservation (SACs) and Sites of Special Scientific Interest (SSSIs). It was considered that obtaining a data search of bat records from Devon Biodiversity Records Centre (DBRC) was not proportional, considering the likely impact of the proposed works on the surrounding area.

2.2. Preliminary Roost Appraisal

The building was inspected both externally and internally using a surveyor's ladder, high powered torch, frequency division bat detector (Peersonic RPA3) and video endoscope where necessary to assess the likelihood of the structure to support roosting bats or nesting birds, including barn owls. Evidence of roosting bats could include live animals, carcasses, droppings and feeding remains and evidence of nesting birds could include feathers, nesting material and eggs. Evidence of barn owl was not specifically searched for as there are no suitable access points for this species.

A rating of between negligible and high suitability was assigned to the building based on the likelihood of supporting roosting bats (Collins, 2016). These levels of suitability are listed below:

- **Negligible**: Negligible habitat features on site likely to be used by roosting bats;
- **Low**: A structure with one or more potential roost sites which could be used by individual bats opportunistically, but due to the size, shelter, conditions and surrounding landscape are unlikely to be used by bats on a regular basis or by large numbers of bats i.e. for maternity or hibernation;
- **Moderate**: A structure with one or more potential roost sites which could be used by bats, due to the size, shelter, conditions and surrounding landscape but are unlikely to support a roost of high conservation concern such as a maternity or hibernation roost; and,
- **High**: A structure with one or more roost sites which are obviously suitable for use by larger numbers of bats on a regular basis and potentially for a longer period of time due to size, shelter, conditions and surrounding landscape. Suitable for maternity or hibernation roosts.

- **Confirmed roost** – evidence of roosting bats identified in/on the structure.

2.3. Bat Survey Assessments

The Preliminary Roost Appraisal (PRA) identified the Vicarage as a confirmed roost for long-eared bats, and with high suitability to support other roosting bats species, due to concentrations of bat droppings throughout the loft spaces. Three dusk emergence surveys were undertaken on 10th August, 31st August, & 18th September 2023.

The dusk emergence surveys were 14 days apart which is considered suitable in the 3rd edition of the Bat Survey Guidelines (Collins, 2016). In the new guidelines released in October 2023 (Collins, 2023), it suggests the surveys should be at least 21 days apart. Therefore, this aspect of the survey methodology follows the 3rd edition of the Bat Survey Guidelines (Collins, 2016).

Six surveyors, assisted by two Canon XA60 infra-red cameras and one Nightfox Whisker together with infra-red floodlights were used to survey The Vicarage.

The surveyors were equipped with either an EM Touch Pro and Ipad, Bat Scanner or Peersonic RPA3 bat detectors and marked records of bats emerging onto a site plan. General bat activity (including identified flight routes) were also recorded by the surveyors.

Analysis of recorded bat echolocation calls were undertaken by converting wav. files to Kaleidoscope and then analysing them using Analook. The camera footage was analysed using the media programme, VLC.

When assigning calls to pipistrelle species, calls with a peak frequency of 42-48KHz were assigned to common pipistrelle *Pipistrellus pipistrellus,* calls with a peak frequency of >48-52KHz assigned as *Pipistrellus spp*. and calls with a peak frequency of >52KHz were assigned to soprano pipistrelle *Pipistrellus pygmaeus*.

2.4. Survey Details

Tables 1 and 2 provides surveyor details and weather conditions for the surveys undertaken

Table 1. *Surveyor details and weather conditions – Preliminary Roost Appraisal*

Date:	11th July 2023
Surveyor & Licence No.:	Katie Jones BSc. (Hons) MCIEEM (Principal Ecologist) Natural England Bat Class Licence CL18 (level 2) 2015-11763-CLS-CLS
Weather conditions:	Showers, wind force 1, 20°C, cloud cover 100%

Table 2. *Surveyor details and weather conditions – Dusk Emergence Surveys*

Date:	10th August 2023	31st August 2023	18th September 2023
Surveyors	Katie Jones Katy Oakley Natural England Bat Class Licence CL20 (level 4) 2017-28707-CLS-CLS Alison Johnson Kerrie Gardener Laurel Mayne Sachi McFarland	Katie Jones Alison Johnson Edd Lane Natural England Bat Class Licence CL18 (level 2) 2016-25945-CLS-CLS Kerrie Gardner Charlotte Qualfe Sachi McFarland	Katie Jones Edd Lane Laurel Mayne Richard Lawrence Alison Johnson Charlotte Qualfe
Weather conditions	Dry, wind force 1, 22.8°C, cloud cover 50%	Dry, wind force 0-1, 18.6°C, cloud cover 100%	Dry, wind force 1-2, 15°C, cloud cover 70%
Sunset :	20:44	20:02	19:22
Start time:	20:39	19:47	19:07
Finish time:	22:16	21:15	20:52
Weather conditions (finish):	Dry, wind force 1, 19.2°C, cloud cover 50%	Rain, wind force 1, 16.2°C, cloud cover 100%	Dry, wind force 1, 14°C, cloud cover 70%

3. Survey Limitations

3.1. Preliminary Roost Appraisal

A number of bat species roost in very small crevices such as cracks in the stonework and under the fascia, and therefore it is possible that individual bats and bat droppings may have been missed. In addition, bird nests in concealed locations may not have been visible to the surveyor.

Identification of species based on dropping morphology is challenging and does not provide a definitive identification of species.

3.2. Dusk Emergence Surveys

Heavy rain at the end of the second survey on 31st August, resulted in the survey being stopped 15 minutes before the end. However this is not considered to pose a significant constraint as bats had already emerged from the house.

The house is surrounded by large shrubs and small trees as well climbing plants, which meant that it was difficult to pinpoint individual emergence locations. The infra-red cameras were moved to different locations on each survey to gain a better view of the roof, however they had to be used at some distance from the house due in part to the height of the house and also the vegetation planted close to the walls. Therefore it is possible that emerging bats may have been missed.

4. Survey Results

4.1. Desk Study

There are no statutory designated sites within, immediately adjacent to the site, or within a 2km radius of the site. See Appendix 5 for a plan showing the site surveyed and a 2km radius around the site.

4.2. Preliminary Roost Appraisal

See Appendix 2 for a plan of the roof and location of bat activity, such as droppings and actual bats.

4.2.1. Building descriptions

The site comprises a large, Victorian, brick built house with stone window frames and painted, wooden fascia's. There are three separate roofs, one which lies on a north to south orientation, referred to within the report as Roof 1 which includes the front door with a pitched slate porch; one which joins Roof 1 at the north-eastern corner and lies on an east to west orientation, which is referred to as Roof 2; and one which joins the south-eastern corner of Roof 1 and also lies on an east to west orientation, and is referred to as Roof 3. All roofs are pitched and laid with slates and have several brick chimneys. A variety of climbing plants such as roses, and hydrangea have been allowed to grow up the walls of the house, particularly on the south-eastern elevation of Roof 3.

It is understood that there was a fire in the house, approximately 10 years ago and Roofs 2 and 3 were replaced with new slates and underlined with a breathable membrane. Roof 1, which includes the porch, was not affected by the fire and therefore the roof was not replaced. This loft space is underlined with a 1F bitumen felt.

Potential access points suitable for bats include gaps at the apex of the dormers on the southern and northern elevations, slipped slates and missing ridge tiles on Roof 1, vents in the brick chimneys on the southern pitch of Roof 1, a gap in the brickwork on the southern elevation between Roof 1 and 3, an area of rotten fascia creating a hole on the north-western corner of Roof 1 and gaps at the eaves on the Roof 2.

4.2.2 Evidence of roosting bats

Roof 1

Roof 1 is approximately 12m long and 6m wide with an internal temperature of 18.9°C and 60% relative humidity (rH) recorded. The roof is underlined with bitumen felt and there are several holes at the eaves and gaps at the ridge line where daylight could be seen. A single long-eared bat *Plecotus* sp. was noted roosting at the apex in the southern extent of the roof and a dead, probable long-eared bat was noted in the western dormer roof space.

A large concentration of droppings, from at least two species of bat were recorded along the southern gable end and scattered medium sized droppings were present under the ridge line along

the length of the loft space. Approximately 20 bat droppings were also observed on the internal wall top directly above the porch and thousands of bat droppings were noted adjacent to the wall, within the dormer roof on the eastern elevation. At the northern end of the loft space, a thick layer of 1000's of bat droppings comprising a variety of ages, were present on the insulation felt and adjacent to the wall. DNA analysis of the droppings confirmed that they were from common pipistrelle, serotine *Epitesicus serotinus*, brown long-eared *Plecotus auritus* and whiskered *Myotis mystacinus* bats.

Roof 2

Roof 2 links to the north-eastern extent of Roof 1, and has bat access into Roof 1. The loft space is approximately 5m by 5m with a height of 3m and an internal temperature of 22.4°C and 34rH. Roof 2 is underlined with a breathable membrane and the floor is boarded out. Scattered bat droppings were noted in a line below the ridge and a large concentration of approximately 5000 droppings was noted at the eastern end of the loft space, as well as being stuck on the internal gable wall. DNA analysis of the droppings confirmed that they were from: brown long-eared bats.

Roof 3

Roof 3 links to the south-eastern extent of Roof 1 and there is bat access between the two lofts via gaps on either side of the chimney. Roof 3 is also underlined with a breathable membrane and is approximately 5m long and 4m wide with a height of approximately 3m. The internal temperature was 20.7°C and 10rH. Droppings from at least 2 species of bats were scattered in a line below the ridge. A concentration of approximately 1000 droppings were noted at the eastern end of the loft space, near to a chimney. DNA analysis of the droppings confirmed that they were from: brown long-eared and serotine bats.

4.2.3 Evidence of nesting birds

No evidence of nesting birds was noted either within the lofts of the Vicarage or on the exterior. However crevice nesting birds such as house sparrow *Passer domesticus* may access the same crevices as noted as suitable for bats and nest either within the building or on the wall tops.

4.3. Bat Survey Assessments

Plans of the house showing the roof, as well as detailing the location of the surveyors, cameras and location of bat access points are presented in Appendix 4.

10th August 2023

- One common pipistrelle emerged from the side of the dormer roof on the northern elevation of Roof 2 at 20:49 and two more common pipistrelle were seen emerge from the apex of same dormer (Roof 2), at 21:25
- Two brown long-eared bat was detected emerging from the apex of the dormer on the southern elevation of Roof 1 at 20:49 and 20:56.
- A common pipistrelle emerged from the base of the chimney at 20:58 on the southern elevation and a second common pipistrelle emerged from under a raised tile on the western elevation of Roof 1 at 21:07.

- Thirty-seven brown long-eared bats were seen emerging from the wall top between the two dormers on the southern elevation, between 21:12 and 21:30, and five bats were seen re-entering via the same access point within that time period.
- Three brown long-eared bats were seen emerging from the base of the chimney within Roof 3 between 21:10 and 21:11.
- One brown long-eared bat was seen emerge from the apex of the eastern-most dormer roof of Roof 2, on the northern elevation at 21:30 and one brown long-eared bat was seen to emerge from the corner of the central dormer at 21:37, also on the northern elevation.
- A single brown long-eared bat emerged from a gap on the ridgeline of Roof 1 at 21:23 and one emerged from the wall top of the western elevation of Roof 1 at 22:00.

Non-emerging bat activity

Occasional noctule *Nyctalus noctula* bat activity *was* recorded flying high over the site at the start of the survey. Brown long-eared bats seen emerging on the southern elevation either flew off site towards the south-west, and or were seen foraging around the house and garden. A single *Myotis* sp. bat was detected on the northern elevation of the house flying through the site at 21:26. Serotine, common pipistrelle and brown long-eared bats were recorded foraging around the pond and shrubs at 21:55 and 22:13, to the east of the house.

31st August 2023

- One common pipistrelle was detected emerging from the base of the chimney within Roof 3 at 20:08.
- Three common pipistrelle bats emerged from a gap between the cottage roof and Roof 2 at 20:18
- Twenty-one serotine bats were recorded emerging from a gap under the eaves on the right hand side of the larger dormer on the southern elevation of Roof 1, between 20:18 and 20:58
- Two brown long-eared bats were seen emerging from a gap at the apex of the larger dormer on Roof 1, on the southern elevation between 20:18 and 20:20,
- Three brown long-eared and 1 serotine emerged from the western aspect of Roof 1 between 20:20 and 20:35.
- One common pipistrelle emerged from the ridge of Roof 2 at 20:20, and one brown long-eared bats emerged from the same location at 20:25.
- Twenty-eight brown long-eared bats were recorded from gaps under the eaves of both the larger and smaller dormer on the southern elevation between 20:19 and 20:58
- Three brown long-eared bats and one serotine bat emerged from gaps under the eaves on the gable end of Roof 2 between 20:22 and 20:34.
- One brown long-eared bat emerged from under a raised tile on the southern aspect of Roof 2 at 20:33
- Seven brown long-eared bats recorded emerging from under various points at the eaves on the southern elevation of Roof 3 between 20:20 and 20:34
- Two brown long-eared bats and two serotine bats emerged from the ridge of Roof 3 between 20:28 and 20:36

Non-emerging bat activity

The first bats recorded were noctule bats detected from 19:54, flying high over the site before heading south. Common and soprano pipistrelle bats were recorded on all elevations from 20:13 foraging within the garden and under the canopies of the mature trees at the boundaries of the site. Brown long-eared bats were seen emerging, and then flying in front of the house and foraging around the vegetation near the house and drive. Serotine bats were detected emerging and then passing over the surveyors, particularly on the southern and western elevations until 21:23. Occasional Myotis calls were detected particularly on the north-western corner between 20:24 and 20:25.

18th September 2023

- Eighteen brown long-eared bats were seen emerging from the south-eastern corner of Roof 3 between 19:46 and 20:02,
- Three brown long-eared bats were seen emerging from a gap between the two dormers between Roofs 1, and 3 on the southern elevation between 19:52 and 19:53.
- One common pipistrelle emerged from a raised slate on the eastern side of the dormer on Roof 1 at 19:54,
- One serotine emerged from the base of the chimney of Roof 3, on the western elevation at 19:53 and a second serotine emerged from the same location at 20:54.
- One brown long-eared bat emerged from the ridge of Roof 2 at 19:51.

Non-emerging bat activity

Common and soprano pipistrelle bats were detected foraging under the tree canopies on the northern and western elevation from 19:31. Single noctules were detected flying high over the site at 19:40 and then recorded again at 20:21 and 20:29. A single lesser horseshoe *Rhinolphus hipposideros* was detected at 20:09 on the northern elevation, and a single Myotis bat species was detected passing at 20:43 also on the north-western corner. Brown long-eared bats were detected foraging within the site by the surveyors on all elevations, particularly around low hanging vegetation. Serotine bats were detected foraging at 19:45 and 20:25.

5. Evaluation and Recommendations

Site evaluation has been undertaken based on the current level of survey findings including a Desk Study, Preliminary Roost Appraisal, and three Dusk Emergence surveys. Legislation is summarised within the current section; Appendix 1 provides full details of the legislation relating to species.

Recommendations with regard to likely impacts and requirements for mitigation, compensation or protected species licensing (where necessary) have been given based on the proposals given in Section 1.3 and current best practice guidance documents where appropriate.

If the site or habitats within it changes (or if development proposals alter) the potential impacts on bat and bird species may change accordingly. Moor to Sea Ecology should be contacted for advice in such situations.

5.1. Designated sites for nature conservation

There are no statutory designated sites within, adjacent to the site or within a 2km radius of the site. Therefore there are no recommendations pertaining to designated sites.

5.2. Bat Species

Evaluation
British bat species are protected under the Wildlife and Countryside Act 1981 (as amended) and Conservation of Habitats and Species Regulations 2017 (as amended). This makes it an offence to kill or injure bats or damage or destroy a place of shelter or protection. This includes damaging, altering or obstructing the access points that the bats use to enter/exit the roosts. Deliberate or reckless disturbance of bats which could affect the ability of any significant group of animals to survive, breed, rear or nurture their young may also result in an offence.

5.2.1 Roosting bats

The three surveys undertaken at The Vicarage revealed that the house supports:

- A **maternity roost** for up to 37 brown long-eared bats between Roof 1 and Roof 3 with bat emerging from various points under the eaves on the southern elevation;
- A **maternity roost** for serotine bats with up to 21 bats roosting in Roof 1 and emerging from a hole at the eaves on the southern elevation;
- Three **day roosts** for common pipistrelle. Bats were recorded emerging from various locations around the dormers on the northern elevation of Roof 1 (3 bats), at the base of the chimney on the southern elevation of Roof 3 (2 bats), via a gap between the cottage roof and Roof 2 on the eastern elevation (3 bats) and within Roof 2 emerging from the ridge
- Four **day roosts** for brown long-eared bats. Bats were recorded emerging from the southern dormer of Roof 1 (2 bats), around the base of the chimney within Roof 3 (3 bats), in the dormer roofs on the northern elevation of Roof 1 (2 bats), and within Roof 1 with bats emerging on the western elevation (3 bats)

- One **day roost** for serotine with two bats emerging from the ridge of Roof 3, and one bat emerging from the base of the chimney of Roof 3.

The surveys showed that four species of bat used the three roof spaces for roosting and accessed the roofs via a variety of access points, including the open ridge on Roof 1, holes at the eaves, gaps under the barge boards, and raised and missing slates. These access points appeared to alter throughout the three surveys and it is likely that the bats will favour particular access points for the maternity roosts, but will vary the location they emerge from within the day roosts depending on weather conditions such as prevailing wind and rain, as well as light.

Droppings relating to whiskered bats were also noted within Roof 1, although this species of bat was not definitively identified emerging from the Vicarage, it is assumed that this species will use the same access points as the other bats recorded.

Recommendations

It is understood that it is proposed to undertake repairs to the roof of the Vicarage including installing new tiles along the ridge of Roof 1, replacing the lead valley on either side of the dormer on the western elevation, removing the external flue on the eastern chimney within Roof 3, adding new gutters around the dormer on the southern elevation of Roof 3, and on the southern and northern elevation of Roof 2. It is also likely that other repairs will be made by the roofers as they see fit once they are able to access the roofs via the scaffolding.

Due to the presence of ten bat roosts in the Vicarage, it will be necessary to obtain a licence from Natural England prior to undertaking any works which will affect the slates, ridges or eaves. The licence enables the client and roofers to legally contravene the legislation protecting roosting bats i.e. by removing, altering or obstructing the identified bat access points, providing that mitigation measures are put in place to protect roosting bats. It should be noted that a bat roost is still considered to be a roost even if the bats are not present at the time that the works are undertaken. The necessary mitigation is detailed below:

Hibernation check

A check for hibernating bats in the loft spaces between December and February, must be undertaken by the ecologist prior to applying for the EPSL, to ascertain whether the loft spaces are also used as a hibernation bat roost.

European Protected Species Licence (EPSL)

Due to the presence of two maternity roosts of brown long-eared bat and serotine and eight day roosts for common pipistrelle, brown long-eared and serotine, it will be necessary to obtain an EPSL from Natural England. The EPSL is prepared by the ecologist and takes a minimum of 30 working days to be processed and approved by Natural England. The EPSL is valid for up 2 years, during which time all works that may affect the bats i.e. roof repairs must have been undertaken.

Timing restrictions

Maternity roosts are typically used between mid-April and mid-September, and the bats are most vulnerable when they have babies in the roost. Therefore, any works that will affect the roof covering or eaves must be undertaken in January/February, when young bats are not present. Adult bats (if still present) will be in lower numbers and works can be undertaken to avoid any bats in hibernation. All the works to the roof and loft spaces must be completed before the female bats return at the start of April to breed.

Bat boxes

Four bat boxes such as Schwegler 1WI box, which is suitable for hibernating bats and the General Purpose Bat box must be installed on trees surrounding the Vicarage prior to the start of the roof repair works. Both are available from NHBS. Any bats found, that are hibernating during the works, will be re-located from the house to a suitable hibernation bat box outside of the works area, where they will not be disturbed.

Ecological supervision

During the roof repairs, an ecologist must be present to ensure that the slates are removed using a methodology that protects the bats from accidental killing and injury. The ecologist will re-locate any bats found, to the bat boxes already installed on site.

New bat access points

There are currently at least sixteen access points available for bats to access the roosts over the three roofs, and six within Roof 1, where the majority of the repairs will take place, including holes in the ridge and raised slates. Using the EPSL, the number of access points available for the bats can be reduced, which will reduce the likelihood of water ingress and draughts getting into the roof. It is therefore proposed that access points within Roof 1 be reduced to the following:

- 1 access slate in the western elevation of Roof 1, and,
- 1 ridge tile access in the ridge of Roof 1

The bat access gaps under the barge board on the northern and southern gable ends of Roof 1 will be retained as well as the hole in the eaves on the southern elevation of Roof 1 and Roof 3, used by the serotine and brown long-eared maternity roosts. See Appendix 7 for a plan of the proposed access points in Roof 1.

Monitoring

To ensure the effectiveness of the mitigation measures and as a stipulation of the EPSL, two years of monitoring would be undertaken, following the completion of the works. These will consist of a single dusk emergence survey, carried out between May and August, for two alternate years. This will enable any adjustments to be made to the installed mitigation measures, as well as monitoring the success of the mitigation measures.

5.2.2 Foraging bats

Evaluation

The dusk emergence surveys revealed that at least seven species of bat use the habitats surrounding the house for foraging and commuting. The species recorded included lesser horseshoe bat, brown long-eared and Myotis species of bats which are known to be particularly vulnerable to the effects of external lighting. These species will alter their foraging routes if they are illuminated, such as by external security and lights or garden lights.

Recommendations

It is recommended that no external lighting such as security lights or garden lighting is installed on the house, post development. Any proposed external lighting should follow the guidelines set out in the Institute of Lighting Professionals (2023) Bats in the Built Environment Series ILP Guidance Note 08/23. In summary:

- All luminaires should lack UV elements when manufactured. Metal halide, compact fluorescent sources should not be used;
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability;
- A warm white light source (2700Kelvin or lower) should be adopted to reduce blue light component;
- Light sources should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012);
- Way marking in-ground markers (low output with cowls or similar to minimise upward light spill) to delineate path edges;
- Luminaires should always be mounted horizontally, with no light output above 90° and/or no upward tilt;
- Where appropriate, external security lighting should be set on motion sensors and set to as short a possible a timer as the risk assessment will allow. For most general residential purposes, a 1 or 2 minute timer is likely to be appropriate;
- Use of a Central Management System (CMS) with additional web-enabled devices to light on demand; and,
- Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon.

5.3. Bird Species

Evaluation

Under the Wildlife and Countryside Act 1981 (as amended) it is illegal to take, damage or destroy the nests of wild birds whilst being built or in use. Bird species also listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) receive additional protection including protection from intentional or reckless disturbance when they are nesting or rearing dependant young (see Appendix 1 for more details).

Recommendations

The repairs to the roof are proposed to be undertaken outside of the bird nesting season, which extends from March to the end of August, and therefore there are no recommendations pertaining to nesting birds.

6. References

CIEEM (2017). *Guidelines for Preliminary Ecological Appraisal*. 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.

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Devon County Council (2023) Environment Viewer.

Institute of Lighting Professionals (2023). *Bats and artificial lighting at night.* Bats in the Built Environment Series ILP Guidance Note 08/23.

Magic (2023). Available from https://magic.defra.gov.uk/MagicMap.aspx

Reason, P.F. and Wray, S. (2023). *UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats*. Chartered Institute of Ecology and Environmental Management, Ampfield

Stone, E., Jones, G., and Harris, S. (2009). *Street lighting disturbs commuting bats.* Current Biology 9:1-5.

Williams, C. (2010). *Biodiversity for Low and Zero Carbon Buildings*: A Technical Guide for New Build.

Appendix 1 Summary of Relevant Policies, Legislation & Designated Site Explanations

This includes a brief summary of legislation relevant to wildlife referred to in this document. The original texts of the relevant legislation or specific legal advice should be consulted in individual cases where appropriate. This section does not constitute legal advice.

National Planning Policy Framework

The National Planning Policy Framework (NPPF) was published on the 24th July 2018. It replaces the first NPPF published in March 2012.

Sections of the NPPF with particular relevance to biological conservation include:

Paragraph 8 and 8 c):
8. Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives):

c) an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

Paragraph 170 d):
170. Planning policies and decisions should contribute to and enhance the natural and local environment by:

d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;

Paragraph 171:
171. Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.

Paragraph 174:
174. To protect and enhance biodiversity and geodiversity, plans should:

a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity[56]; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation[57]; and

b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

Paragraph 175:
175. When determining planning applications, local planning authorities should apply the following principles:

a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons[58] and a suitable compensation strategy exists; and

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

Paragraph 176:

176. The following should be given the same protection as habitats sites:

a) potential Special Protection Areas and possible Special Areas of Conservation;

b) listed or proposed Ramsar sites[59]; and

c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

Paragraph 177:
177. The presumption in favour of sustainable development does not apply where development requiring appropriate assessment because of its potential impact on a habitats site is being planned or determined.

[56] Circular 06/2005 provides further guidance in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system. [57] Where areas that are part of

the Nature Recovery Network are identified in plans, it may be appropriate to specify the types of development that may be suitable within them. [58] For example, infrastructure projects (including nationally significant infrastructure projects, orders under the Transport and Works Act and hybrid bills), where the public benefit would clearly outweigh the loss or deterioration of habitat. [59] Potential Special Protection Areas, possible Special Areas of Conservation and proposed Ramsar sites are sites on which Government has initiated public consultation on the scientific case for designation as a Special Protection Area, candidate Special Area of Conservation or Ramsar site.

Protected Species

Protected Species (PS) include those species present on Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended). The Conservation of Habitats and Species Regulations 2017 transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora (Habitats Directive) into English Law. EPS referred to within this report include:

- **Bat species**

All PS also receive legal protection under the national legislation within the Wildlife and Countryside Act 1981 (as amended). When these two pieces of legislation are considered together, it makes it an offence to:

- Deliberately capture (or take), injure or kill any wild animal of these species.
- Possess or control any live or dead specimens or any part, or anything derived from animals of these species.
- Deliberately disturb wild animals of such species, where the disturbance is likely to:
  a) impair their ability to
     i) survive, breed or reproduce, or to rear or nurture their young, or
     ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate
  b) affect significantly the local distribution or abundance of the species.
- Intentionally, deliberately or recklessly damage or destroy the breeding or resting place of such an animal, or obstruct access to such a place.
- Sell (or offer for sale) or exchange parts of these species (alive or dead).

European Protected Species Licences

A European Protected Species Licence (EPSL) issued by the Statutory Nature Conservation Organisation (e.g. Natural England in England) is required for any activity which is considered likely to result in an offence. This includes damage or destruction to a bat roost as well as any significant disturbance to bats (see above). In order to obtain a licence for works which would otherwise result in an offence to a Protected Species (PS), Natural England (and local planning authorities) assesses applications against the following three tests:

Test 1 - **Regulation 53(2)(e)** states: a licence can be granted for the purposes of "preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment".

Test 2 - **Regulation 53(9)(a)** states: the appropriate authority shall not grant a licence unless they are satisfied "that there is no satisfactory alternative".

Test 3 - **Regulation 53(9)(b)** states: the appropriate authority shall not grant a licence unless they are satisfied "that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range."

Please note that Natural England take 30 working days to assess licence applications. Where planning permission is required for a project, this will be required *prior* to submission of a licence application to Natural England.

Nesting Birds

All wild birds are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended). It is therefore an offence in the UK to:

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

In order to avoid committing an offence with regards nesting birds no works which may impact bird nests whilst in use (e.g. whilst nests are being constructed, eggs incubated or dependant juveniles.

Appendix 2 Photo Plates

Plate 1. The western elevation of the Vicarage, showing Roof 1. The light green circle show the approximate location of emerging brown long-eared bats and red circle the approximate location of emerging common pipistrelle bats

Plate 2. The northern elevation of the Vicarage, closest dormer on the right is Roof 1. The other 2 dormers are Roof 2. Red circles are emergence points of common pipistrelle

Plate 3. The southern elevation of the Vicarage showing Roof 1 and Roof 3. Dark green circle is emergence point of serotine on Roof 1 and light green circles are the emergence points of brown long-eared bats

Plate 4. The double chimney on the eastern elevation of Roof 3. Red and green circle is emergence point of common pipistrelle and brown long-eared bat

Plate 5. Brown long-eared bat (red circle) seen roosting in Roof 1

Plate 6. Concentration of bat droppings at the southern end of Roof 1

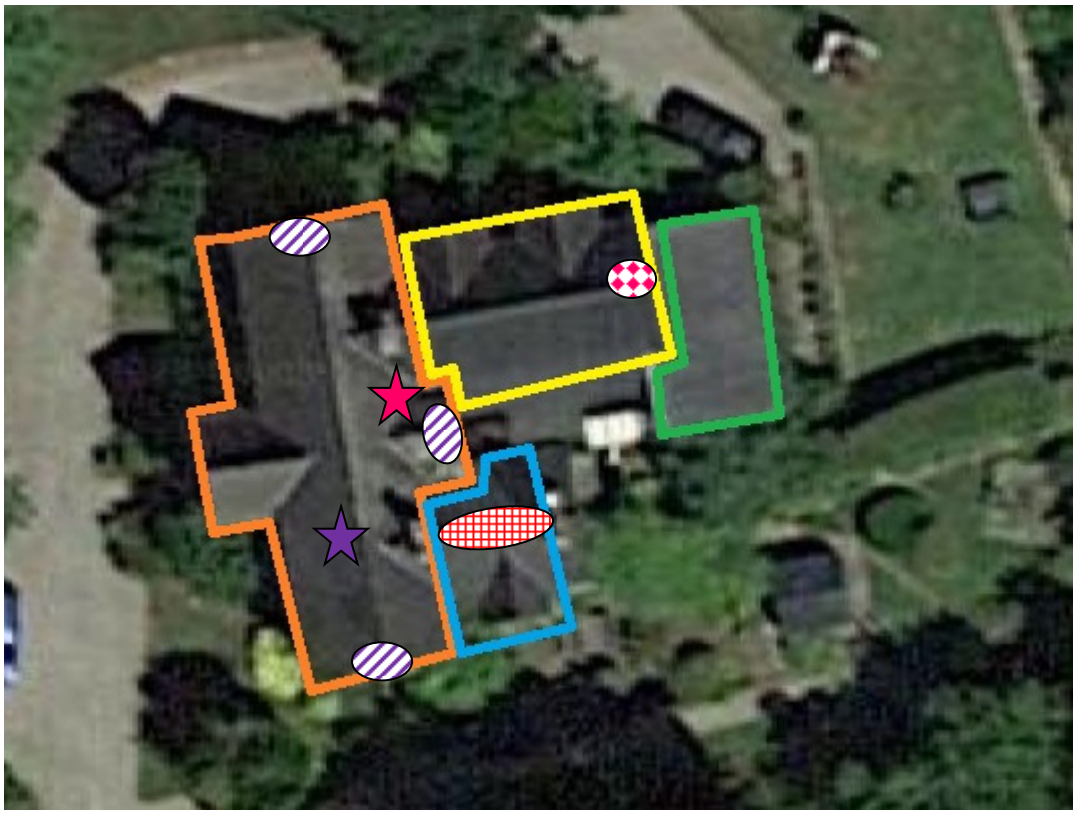
Plate 5. Bat droppings on the internal gable wall within Roof 2 (red circle)

Plate 6. Scattered bat droppings (red circle) under the ridge within Roof 2

Plate 7. A concentration of bat droppings (red circle) within Roof 2

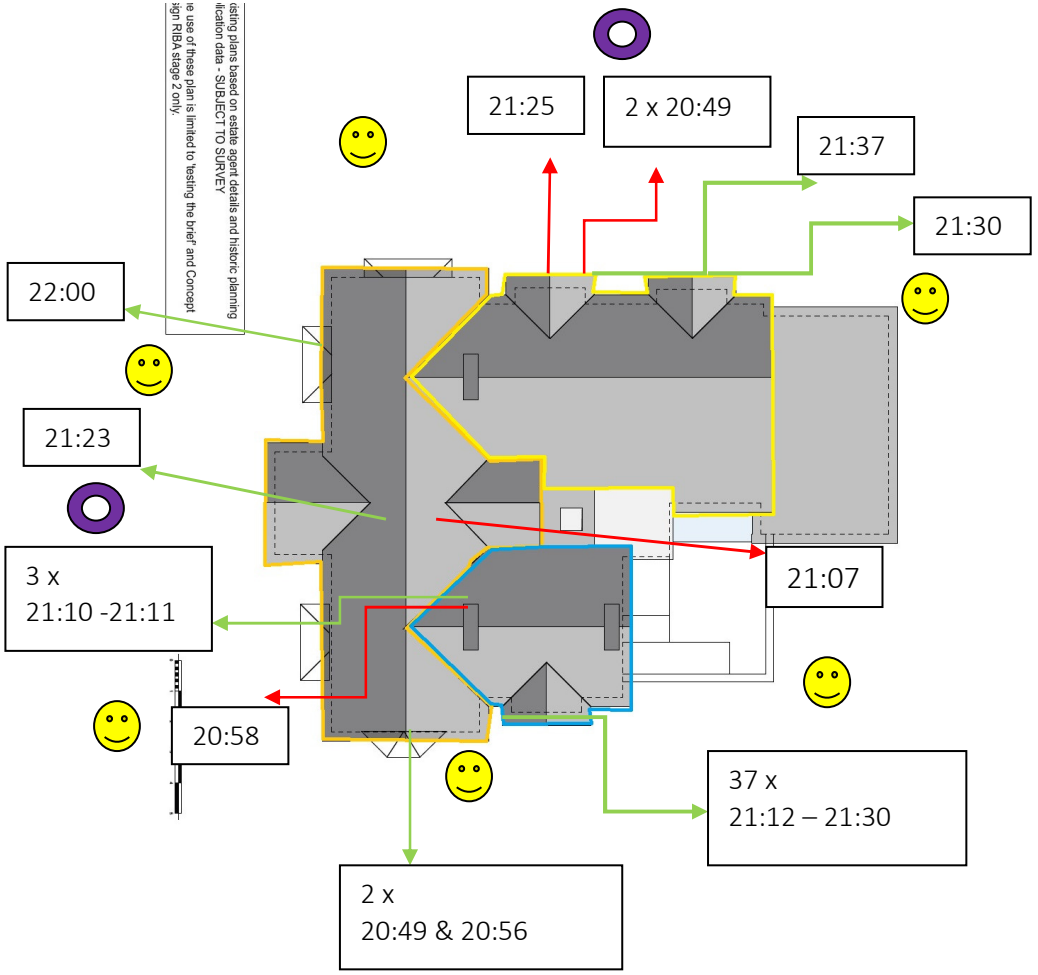
Plate 8. Concentration of bat droppings at the eastern gable end of Roof 3, adjacent to a chimney cavity

Appendix 3 Plan showing evidence of bat activity



	Roof 1
	Roof 2
	Roof 3
	Cottage – not surveyed
	Approximate location concentrated common pipistrelle, serotine, brown long-eared and whiskered bat droppings. Scattered droppings not shown but located under the ridge
	Location of alive brown long-eared bat
	Location of dead brown long-eared bat
	Concentration of brown long-eared and bat droppings
	Concentration of brown long-eared and serotine bat droppings

Appendix 4 Location of surveyors, cameras & emerging bats



Roof 1

Roof 2

Roof 3

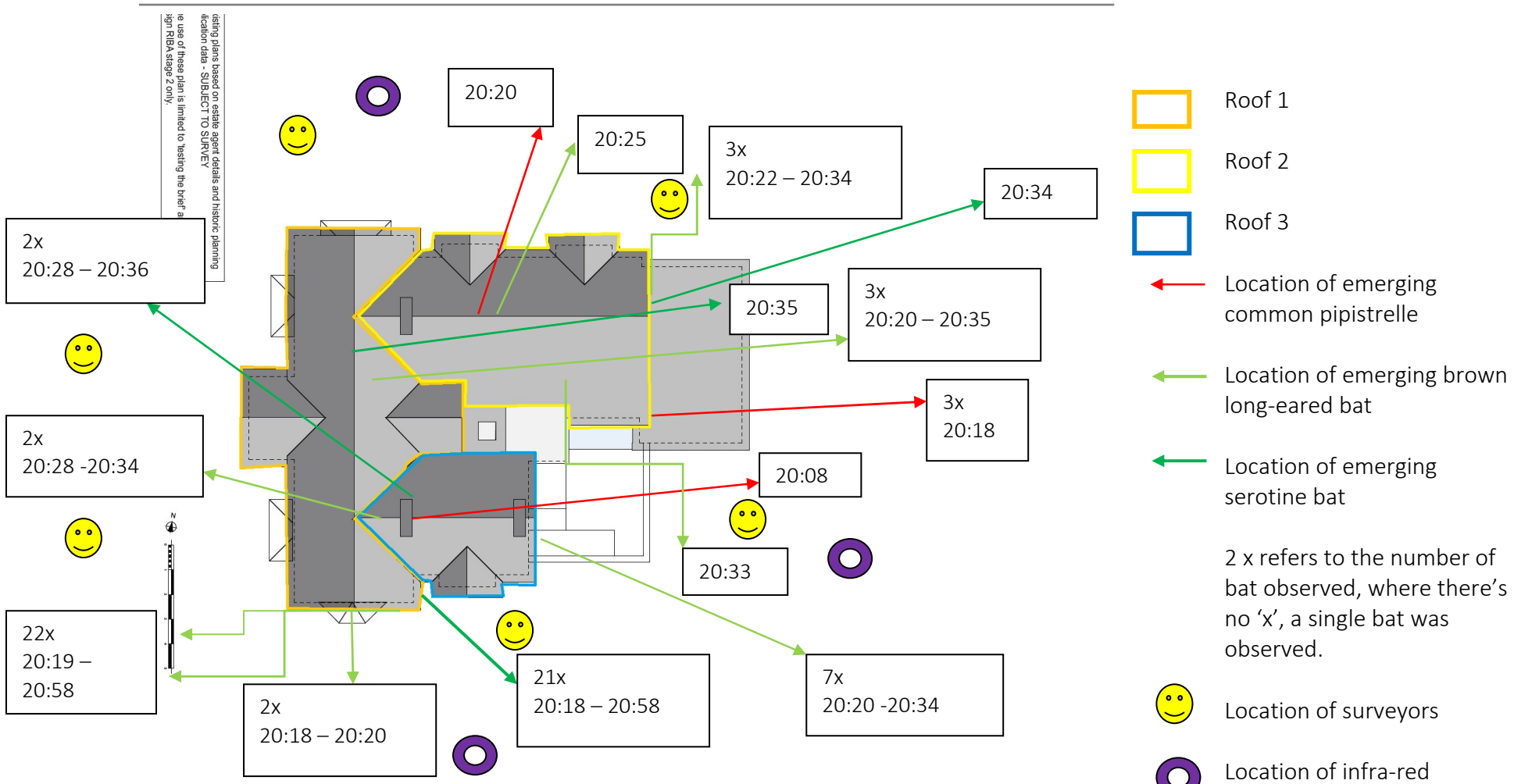
Location of emerging common pipistrelle

Location of emerging brown long-eared bat
2 x refers to the number of bat observed, where there's no 'x', a single bat was observed.

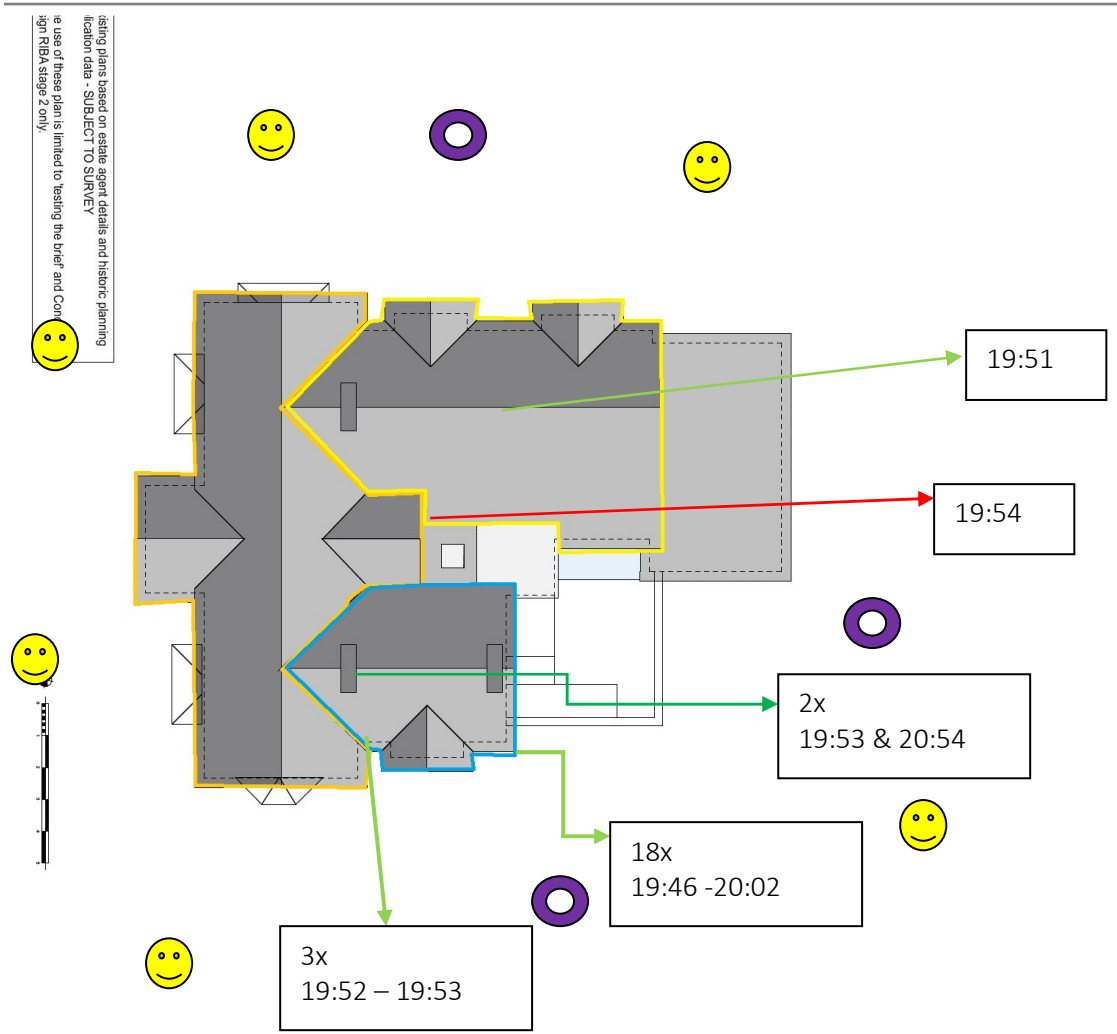
Location of surveyors

Location of infra-red cameras

10/08/2023 – 1st Dusk emergence survey



31/08/2023 – 2nd Dusk emergence survey



Roof 1

Roof 2

Roof 3

Location of emerging common pipistrelle

Location of emerging brown long-eared bat

Location of emerging serotine bat

2 x refers to the number of bat observed, where there's no 'x', a single bat was observed.

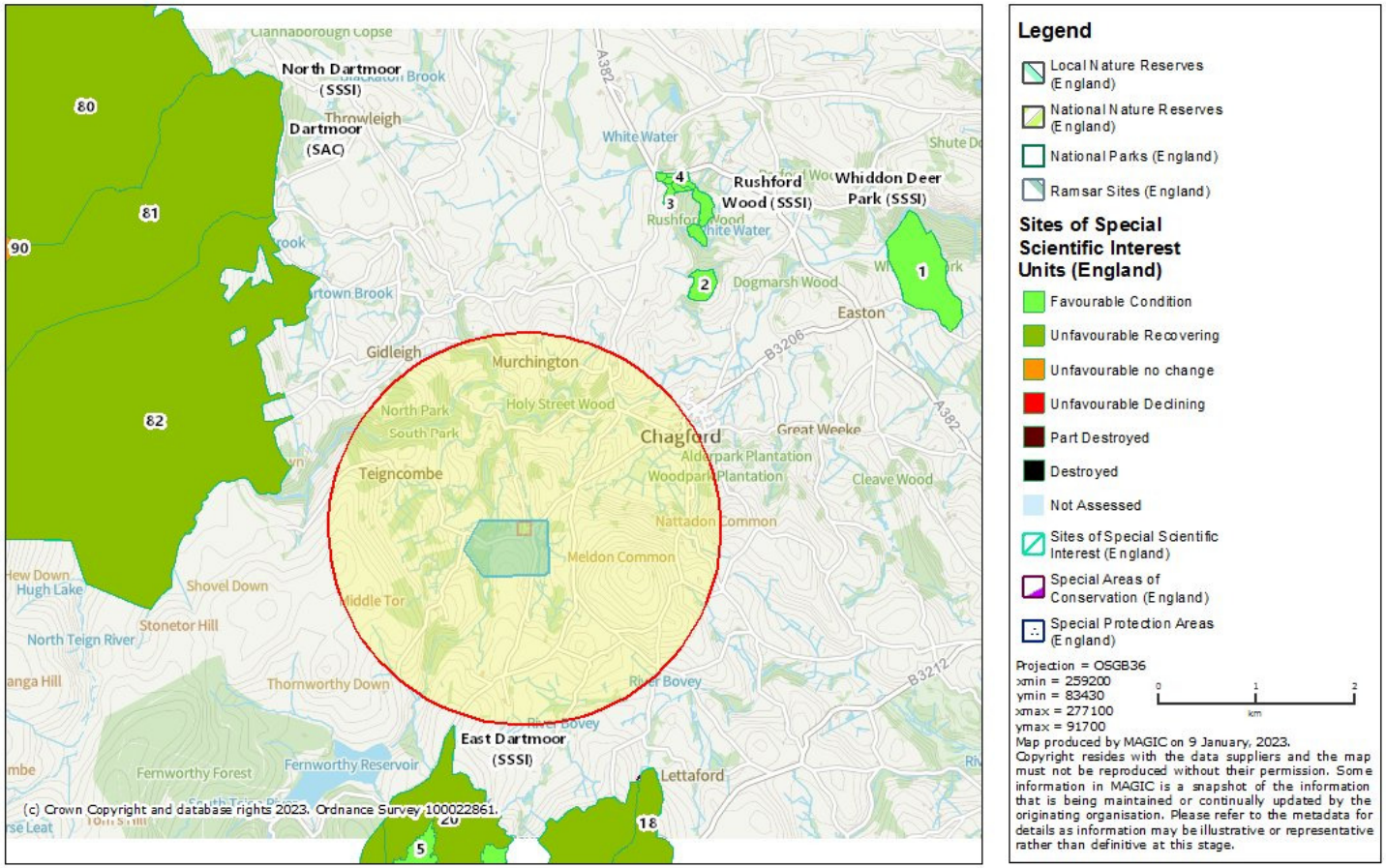
Location of surveyors

Location of infra-red cameras

18/09/2023 – 3rd Dusk Emergence Survey

Appendix 5 Data Search

MAGIC tatutory designated sites of nature conservation



Appendix 6 DNA analysis

Ecotype Genetics

Sample ID: EG-1129-2

Sample information:

Sample type: Faecal	**Species group:** Bats
Suspected species:	**Site Location:** The Old Vicarage, Loft space 1, EX5 1EF
Comments:	

Laboratory information:

DNA Extraction Code: EG-2023-1080	**Identification method:** qPCR
Analysis Procedure Notes:	
Laboratory Comments: None	

Species Identified:

Species 1: Pipistrellus pipistrellus (Common pipistrelle bat) 23	**qPCR Ct Value:** 23
Species 2: Plecotus auritus (Brown long-eared bat) 20	**qPCR Ct Value:** 20
Species 3: Eptesicus serotinus (Serotine bat) 23	**qPCR Ct Value:** 23
Species 4: Myotis mystacinus (Whiskered bat)	**qPCR Ct Value:** 23

Roof 1

Ecotype Genetics

Sample ID: EG-1129-3

Sample information:

Sample type: Faecal	**Species group:** Bats
Suspected species:	**Site Location:** The Old Vicarage, Loft space 2, EX5 1EF
Comments:	

Laboratory information:

DNA Extraction Code: EG-2023-1081	**Identification method:** qPCR
Analysis Procedure Notes:	
Laboratory Comments: None	

Species Identified:

Species 1: Plecotus auritus (Brown long-eared bat)	**qPCR Ct Value:** 18
Species 2: Eptesicus serotinus (Serotine bat)	**qPCR Ct Value:** 24

Ecotype Genetics Limited, Sussex Innovation Centre, Science Park Square, Falmer, Brighton, BN1 9SB

e: orders@ecotypegenetics.co.uk t: 01273704505 w: ecotypegenetics.co.uk

Roof 2

Ecotype Genetics

Sample ID: EG-1129-4

Sample information:

Sample type: Faecal
Species group: Bats
Suspected species:
Site Location: The Old Vicarage, Loft space 3, EX5 1EF
Comments:

Laboratory information:

DNA Extraction Code: EG-2023-1082
Identification method: qPCR

Analysis Procedure Notes:
All UK bat species tested for - only a single species detected in this sample.

Laboratory Comments:
None

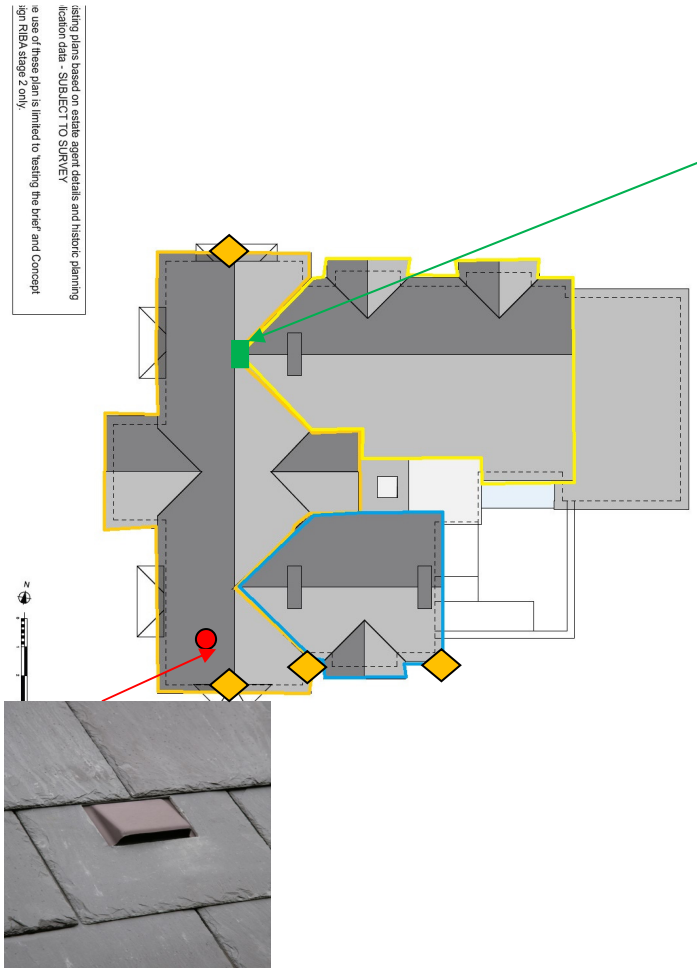
Species Identified:

Species 1: Plecotus auritus (Brown long-eared bat)
qPCR Ct Value: 18

Ecotype Genetics Limited, Sussex Innovation Centre, Science Park Square, Falmer, Brighton, BN1 9SB
e: orders@ecotypegenetics.co.uk t: 01273704505 w: ecotypegenetics.co.uk

Roof 3

Appendix 7 Proposed Bat Access points



- New bat access at the ridge, suitable for serotine, brown long-eared and common pipistrelle
- New bat access slate, suitable for common pipistrelle & whiskered bats
- Wall top access points to be retained