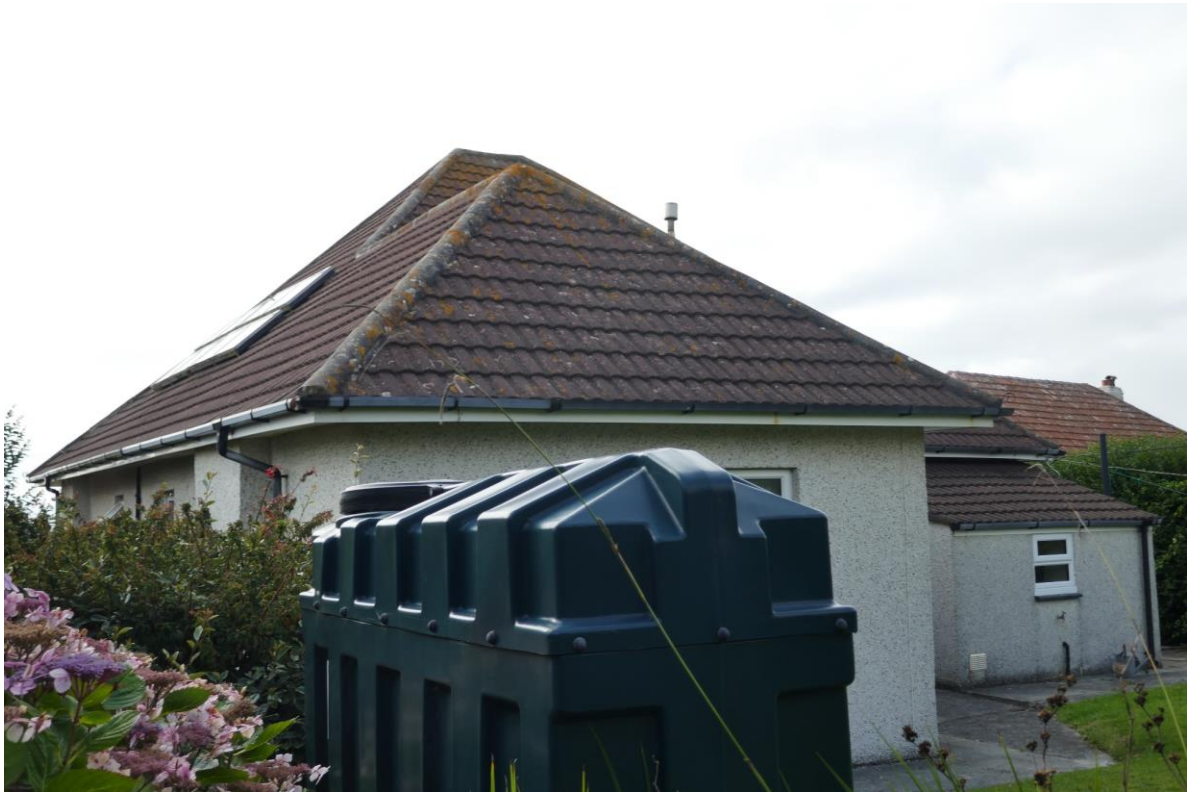
Bat Survey Report

Treverbyn, Polurrian Cliffs, Mullion, TR12 7EW



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1. INTRODUCTION

1.1 Background

Cove Ecological Surveys was instructed by Paul Harrison in August 2023 to carry out a programme of bat surveys at a property known as Treverbyn, located at Polurrian Cliffs, Mullion, Cornwall, TR12 7EW. The surveys were commissioned in preparation for a planning application to build two small extensions and add Velux windows. It followed an initial assessment carried out by Cove Ecological Surveys on 21 August 2023, which identified the building as holding moderate potential for bats using the national survey guidelines (Collins, 2016) and found evidence of bats in the form of droppings. Two emergence surveys and a period of remote monitoring were recommended in keeping with the survey guidelines. This report presents the results of the surveys and offers advice on licensing and mitigation.

1.2 Site description

The survey site (SW67021854) was located in an area of housing on the western outskirts of the villlage of Mullion on the Lizard peninsula, set on the cliff top overlooking Mounts Bay.

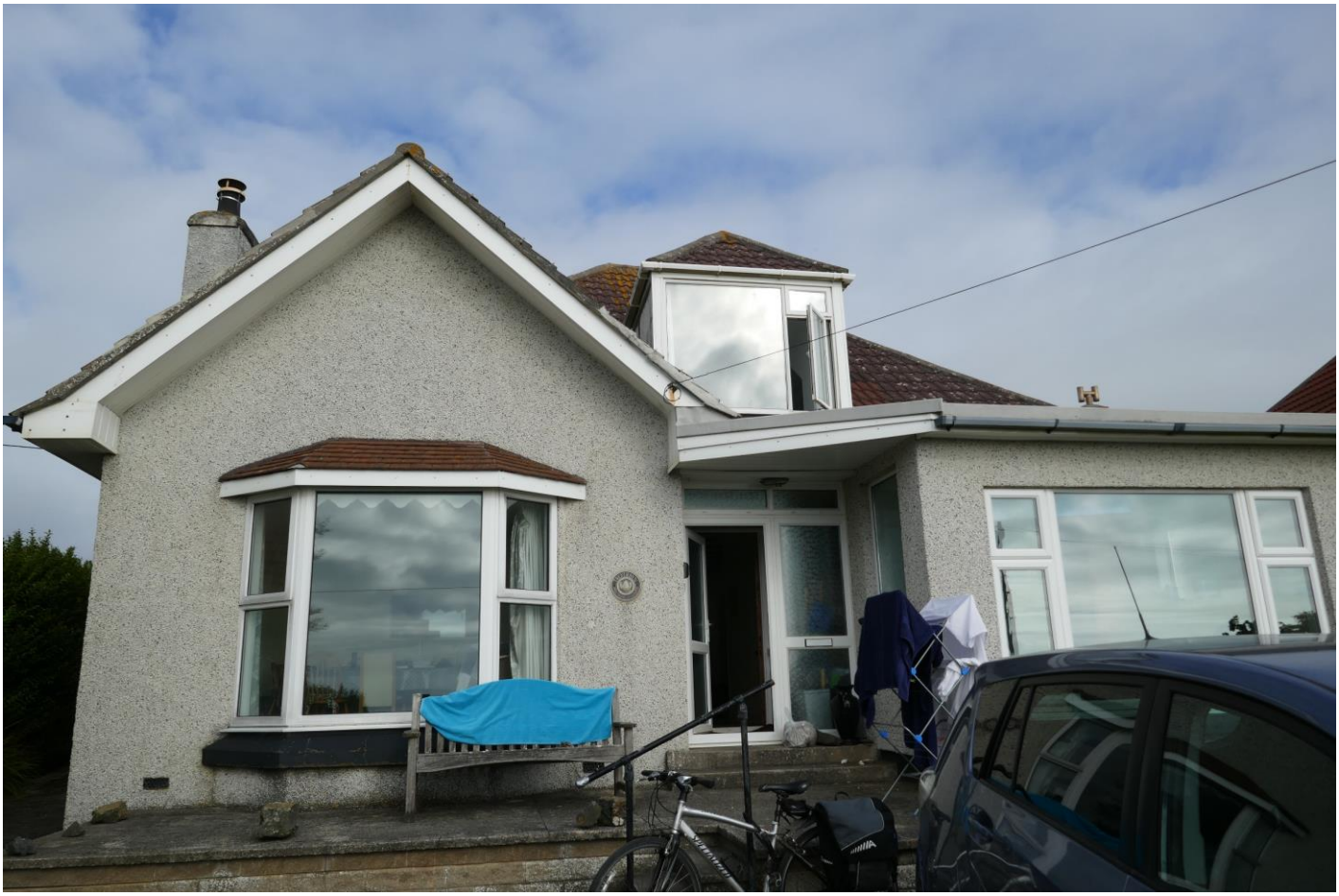

Figure 1. Western aspect of the building.

The detached dormer bungalow (Figures 1–3) was block built with a multiple hipped roof constructed of interlocking concrete tiles, some of which had gaps beneath suitable for roosting bats (Figure 4). The roof ridge was tightly cemented and did not provide any suitable gaps. Two small loft areas were present, of approximately 3m height, with wooden boarded floors; the roof was lined with bitumen felt, which was ripped in places and could allow bats to enter the roof void from gaps beneath tiles.

At the back of the property a single storey lean-to was present with a sloping concrete tiled roof. The broad wooden soffits around the house were tightly fitted and did not offer suitable gaps for bats.

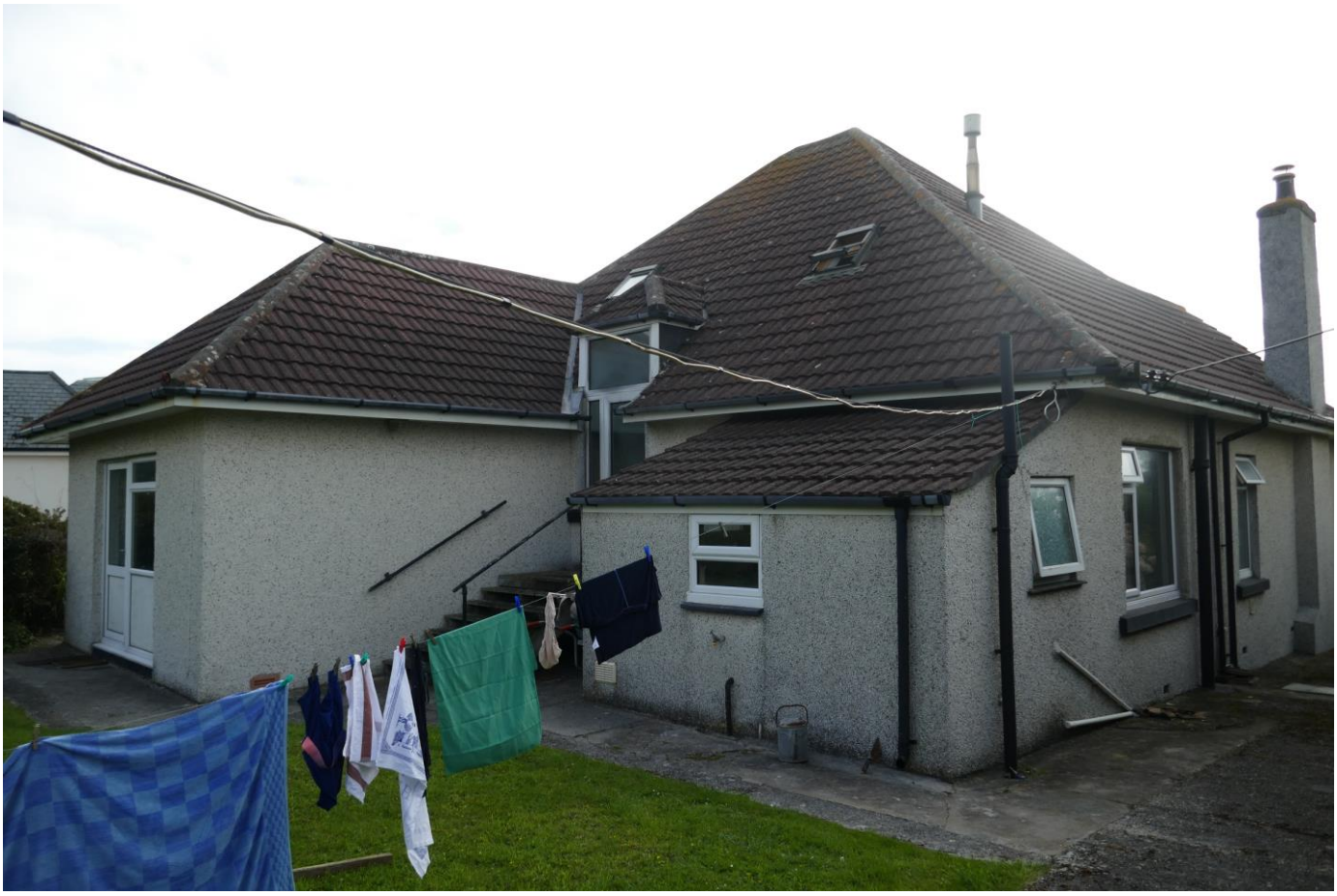

Figure 2. Northern and eastern aspect of the building.

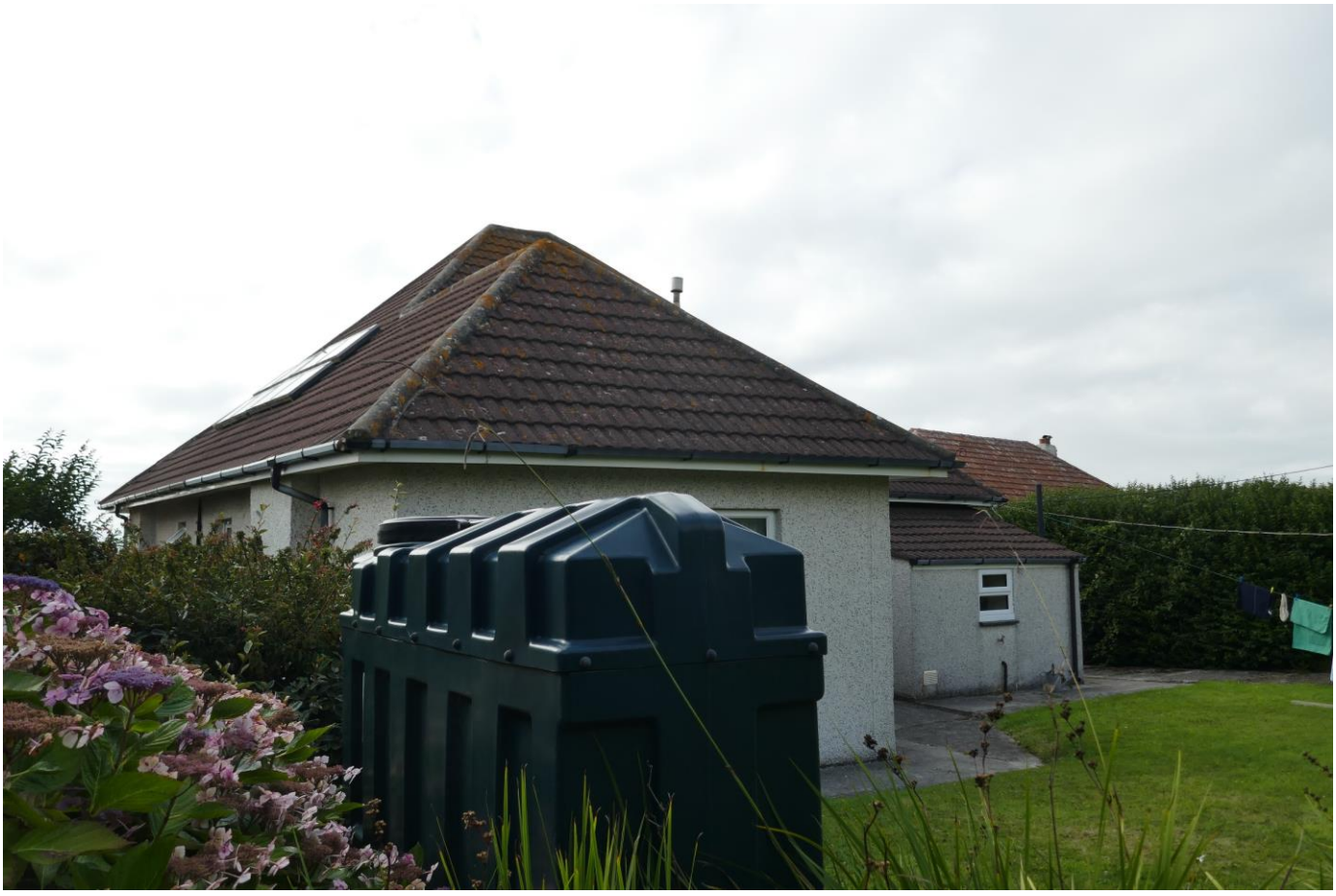

Figure 3. Southern and eastern aspects of the building.

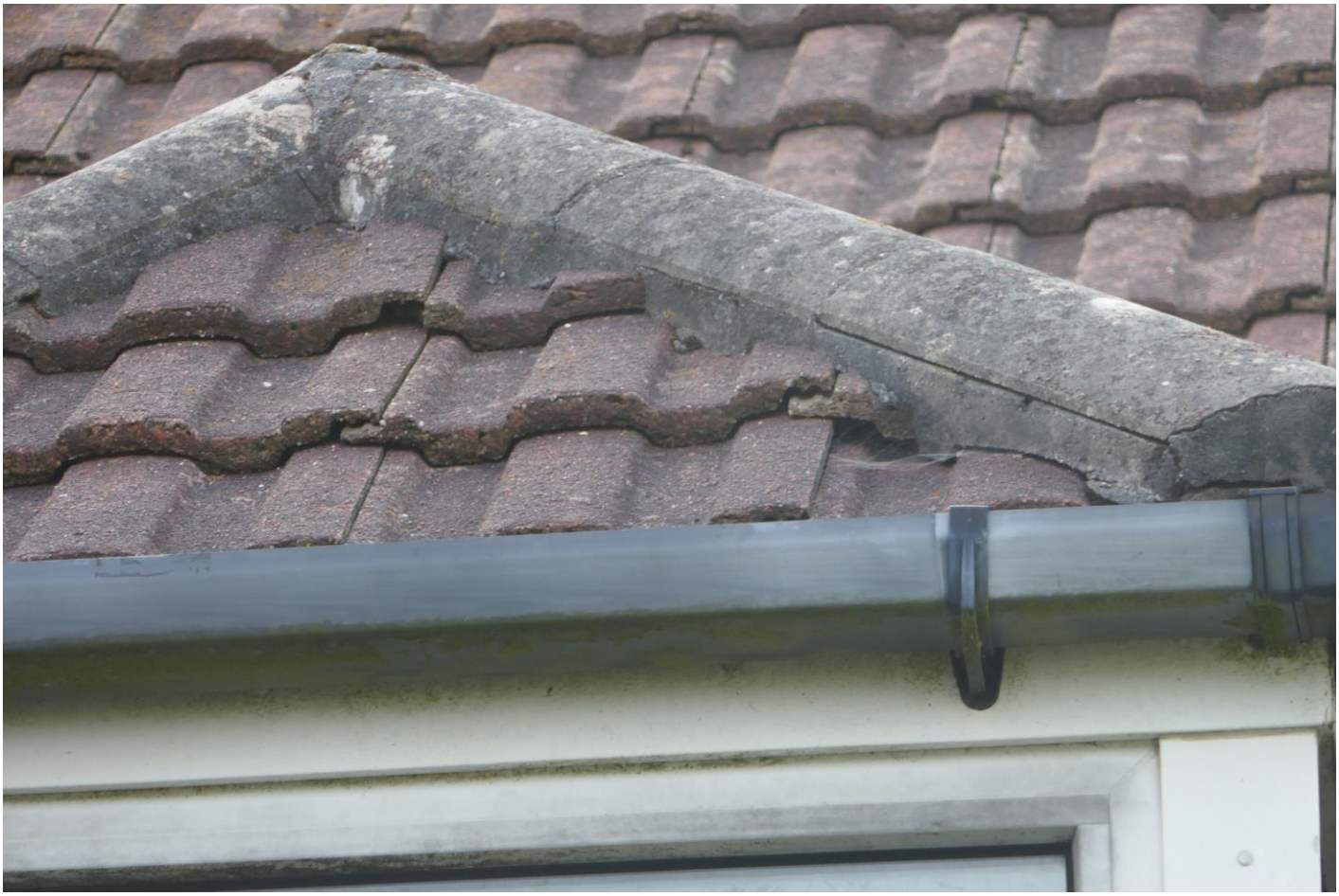

Figure 4. Gaps beneath roof tiles.

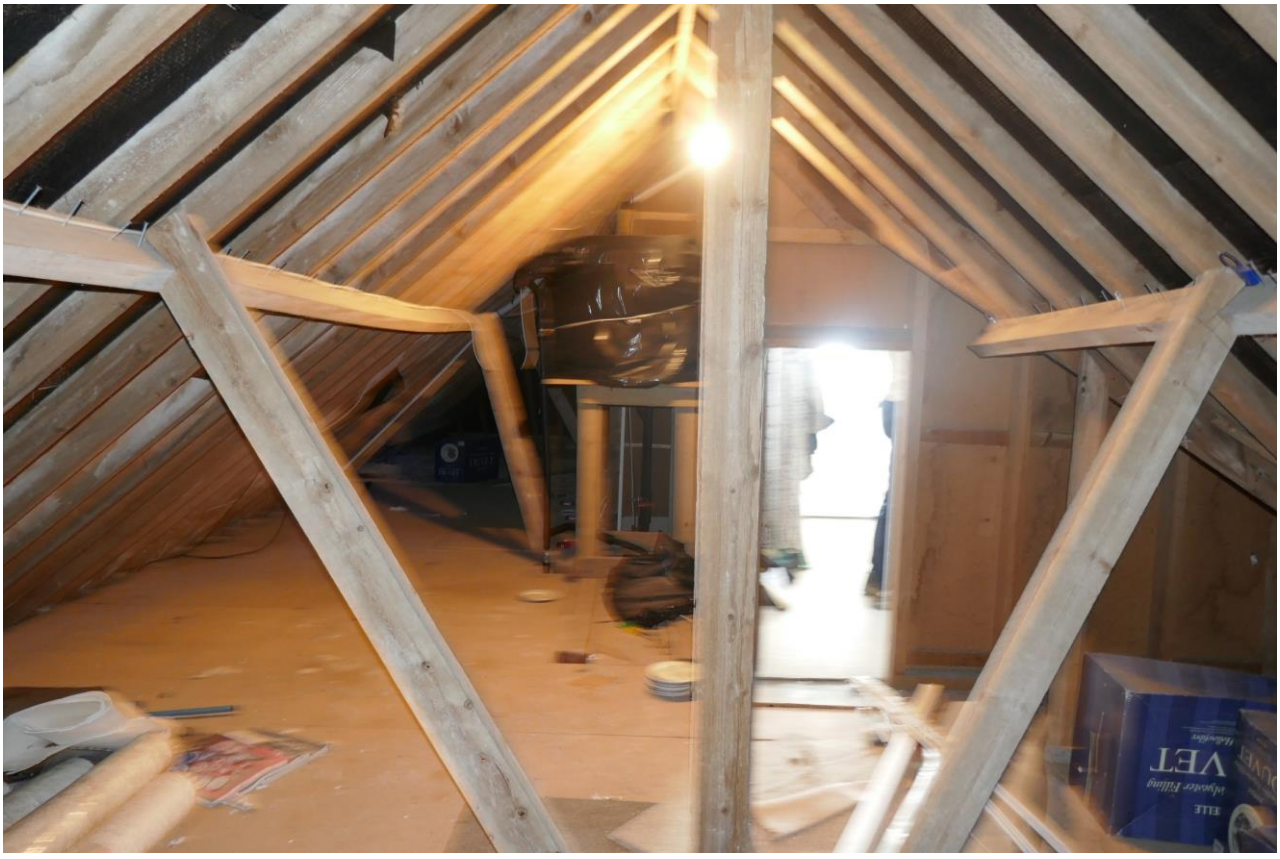

Figure 5. Roof void.

The survey location was exposed to the elements, perched above Mounts Bay, and will be subject to strong south-westerly winds. The landscape immediately to the north, east and south was rural in nature, consisting of a patchwork of pasture and arable fields with mature hedgerows and blocks of woodland. The wider area thus offered suitable foraging habitat for bats with good habitat connectivity.

1.3 Proposed work

It is proposed to demolish the lean-to on the eastern side of the building and to extend the property to occupy that space. On the western side of the building the current flat-roofed extension will be replaced. Velux windows will also be fitted into the existing roof.

1.4 Aims of the surveys

The aim of the surveys were to establish if roosting bats were present and if so, what species and numbers, as well as the location of any roosts and means of access. The initial visual inspection also focused upon presence of nesting birds.

2. METHODS

2.1 Visual survey

A visual survey was carried out on 21 August 2023, searching for evidence of bat use, including droppings, feeding remains and staining from urine or grease from fur. The equipment used during the survey to examine accessible parts of the building were a high-powered torch and binoculars. An assessment was also made of general nesting bird activity.

2.2 Emergence surveys

Two dusk emergence surveys were carried out at the site in 2023. The first was conducted on 26 August, starting at 20.03 (15 minutes before sunset) and finishing at 21.48; sunset was at 20.18 B.S.T. The second survey was conducted on 20 September, commencing at 19.10 (14 minutes before sunset) and finishing at 20.55; sunset was at 19.24 B.S.T.

Two surveyors were present on each survey. Surveyor 1 was located in the back garden to the east of the property, viewing the northern and eastern aspects, with surveyor 2 positioned on the drive to the west observing the southern and western aspects. This strategy enabled all aspects of the building to be viewed. Table 1 summarises the personnel and equipment used, whilst Figure 6 shows the surveyor and equipment locations and Figure 7 shows the infrared illumination at the darkest point of the 26 August survey from surveyor 1's position.

Table 1. Surveyor and equipment information.

Date (2023)	Surveyor number	Surveyor name	Equipment used	Method of detection
26 August	1	Mark Tunmore	Anabat Walkabout, Sony AX100EB & 2 x Nightfox XB5 infrared torch	Pitch shifting & infrared
26 August	2	Anthony Blunden	Echo Meter Touch 2 Pro & Anabat SD1	Time expansion & frequency division

20 September	1	Anthony Blunden	Echo Meter Touch 2 Pro & Anabat SD1	Time expansion & frequency division
20 September	2	Joshua Blunden	Echo Meter Touch 2 Pro	Time expansion

Methods of detection are described below:-

- Full spectrum records at very high sample rates, enabling high frequency sounds to be recorded in real time. Files are recorded for subsequent sound analysis.

- Heterodyne plays back sound in real time, operating at a narrow bandwidth of frequencies, dependent upon the frequency the observer is tuned into.

- Pitch shifting compresses the ultrasonic spectrum into an audible band by shifting the pitch of the sound, allowing calls to be heard in real time. Harmonic components and amplitude of bat calls are kept in the process. Files are recorded for subsequent sound analysis.

- Frequency division divides the frequency of ultrasound by a pre-set ratio (typically 16) so that ultrasonic noises can be heard. Calls are recorded for subsequent sound analysis

- Time Expansion plays back recorded sound at a slower than normal speed (typically 1/10th), which has the effect of lowering the frequency of sound so that it is audible to the human ear. Calls are played in real time and recorded for subsequent sound analysis.

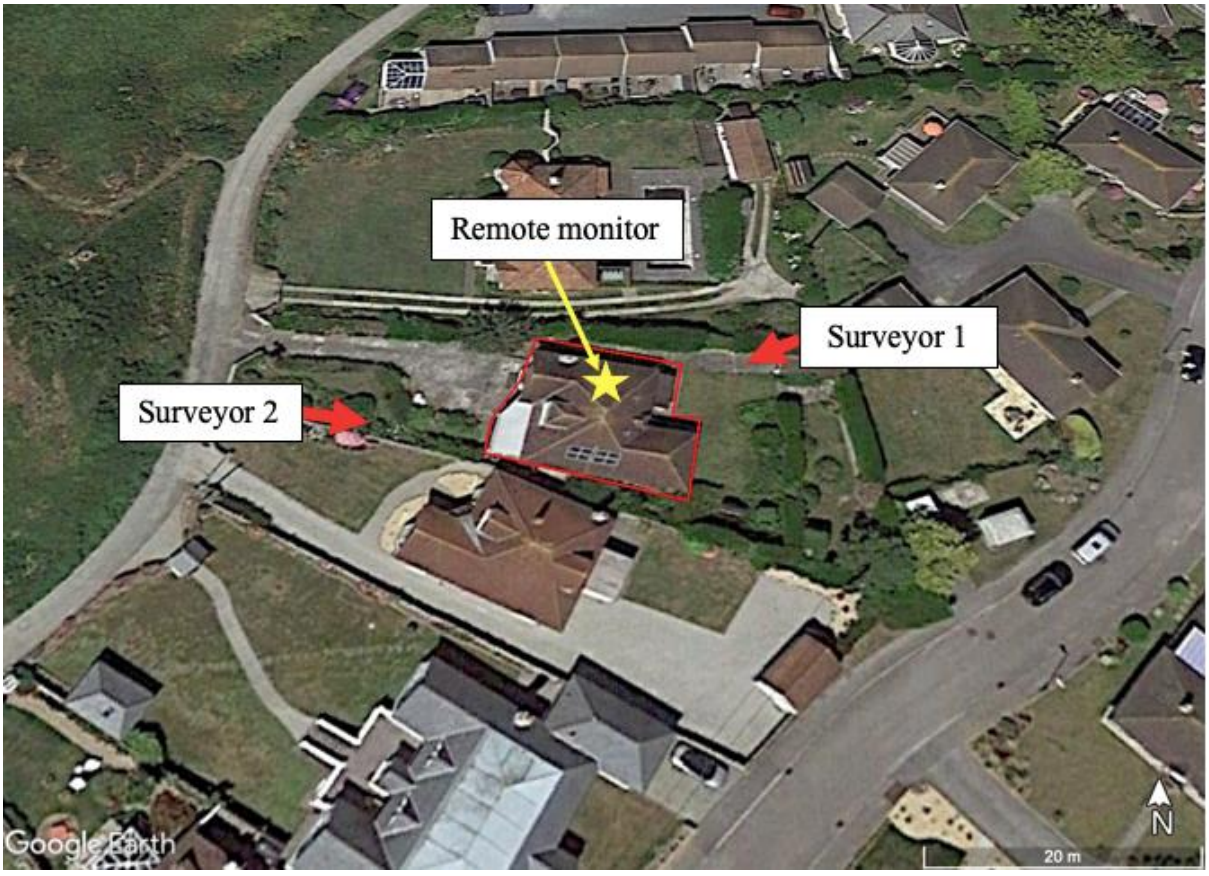

Figure 6. Surveyor and equipment locations.

Figure 7. Infrared illumination. Surveyor 1, 26 August 2023.

2.3 Weather conditions

During the dusk emergence survey on 26 August conditions were dry with 5/8 cloud cover and a north-westerly wind of Beaufort Force 4. Temperatures started at 15.8°C, falling to 15.5°C by the end of the survey.

During the second emergence survey on 20 September weather conditions were dry with 3/8 cloud cover and a westerly wind of Beaufort Force 2. Temperatures maintained a constant 15°C throughout the survey.

2.4 Surveyor information

Mark Tunmore (Natural England license number 2015-14995-CLS-CLS) and Anthony Blunden (Natural England licence number 2015-10884-CLS-CLS Level 2) are both licenced and experienced bat surveyors, and Joshua Blunden is a bat surveyor with experience on similar development projects.

2.5 Remote monitoring

An Anabat Express bat detector was left recording bat activity inside the main roof void on the nights of 27 August to 4 September 2023. The unit was programmed to switch on 30 minutes before sunset and to switch off 30 minutes after sunrise. This equipment uses frequency division to record bat activity.

3. RESULTS

3.1 Visual survey

Approximately 12 bat droppings were found in the roof void, which were subsequently confirmed by DNA analysis to be from Common Pipistrelle *Pipistrellus pipistrellus*. No evidence of nesting birds was found.

3.2 Emergence surveys

During the dusk emergence survey on 26 August no bats were seen to emerge from the building. Common Pipistrelle was observed on three occasions, at 20.39, 21.03 and 21.24 B.S.T in the garden of the property.

During the dusk emergence survey on 20 September a single **Common Pipistrelle** emerged from the northern roof pitch next to the boiler flue at 19.54 B.S.T. (see Figure 8). No other bat activity was observed during the survey.

Figure 8. Common Pipistrelle emergence location.

3.3 Remote Monitoring

No bats were recorded on the remote detector left in the main roof void between 27 August and 4 September.

4. LEGISLATION AND POLICY

4.1 Bats

As a result of the substantial declines in bat populations that have taken place over the last century bats are legally protected by domestic and European legislation. All British bats are European Protected Species (EPS), listed under Annex IV (a) of the EC Habitats Directive. They receive legal protection under the Conservation of Habitats and Species (amendment) (EU Exit) Regulations 2019. Additional legal protection is afforded under Section 9 of the Wildlife and Countryside Act (as amended by the Countryside and Rights of Way Act 2000), all British Bats being listed under Schedule 5 of the Act. In combination this makes it an offence to:

Intentionally kill, injure or take a wild bat

- Intentionally or recklessly damage, destroy or obstruct access to a wild bat roost (regardless of whether bats are present at the time or not)
- Intentionally or recklessly disturb a wild bat while it is occupying a structure or place it uses for shelter or protection

Since 2007 it is no longer a valid defence to show that the killing, capture or disturbance of a species covered by the Conservation Regulations or the destruction or damage of their breeding sites or resting places was the incidental or unavoidable result of an otherwise lawful activity.

4.2 Nesting birds

All nests and eggs of wild birds are protected under Part 1 of the Wildlife and Countryside Act 1981 (and amendments). Additional legal protection is given to Barn Owl, which makes it a legal offence to disturb the species when nesting or to damage/destroy the nest site while it is in use.

4.3 Planning policy

The National Planning Policy Framework (NPPF) 2021 sets out government policy with regard to the consideration of biodiversity in planning decisions. The presence of a protected species is a material consideration when a planning authority is considering a development proposal that would be likely to cause harm to the species or its habitat. The NPPF states that if significant harm 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.

Under Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 local authorities have a duty to have regard to the conservation of biodiversity in England when carrying out their normal functions, which includes consideration of planning applications. The England Biodiversity List was published in compliance with section 41 of the Act and includes 941 species which make up the UK Biodiversity Action Plan Priority Species list. This includes seven of the UK's bat species (listed below).

The UK Biodiversity Action Plan (UK BAP) is the national strategy developed in response to the Convention on Biological Diversity signed in Rio in 1992. It identified the species requiring priority action to address their causes of decline and take action to maintain and conserve their biodiversity. Listed bats are:

- Barbastelle *Barbastella barbastellus*
- Bechstein's Bat *Myotis bechsteinii*
- Noctule *Nyctalus noctula*
- Soprano Pipistrelle *Pipistrellus pygmaeus*
- Brown Long-eared Bat *Plecotus auritus*
- Greater Horseshoe Bat *Rhinolophus ferrumequinum*
- Lesser Horseshoe Bat *Rhinolophus hipposideros*

5. EVALUATION

The surveys have shown that a single Common Pipistrelle is day-roosting beneath tiles on the northern aspect of the building; the presence of bat droppings from this species in the main roof void indicate that this bat is occasionally entering the void via the roof.

Common Pipistrelle is common and widespread throughout the UK. The population has increased during the monitoring period 1999–2022 (BCT, 2023). The species is listed as vulnerable within the Red Data Book for Cornwall and the Isles of Scilly (CISFBR, 2009).

Roost types are valued using the system proposed by Wray *et al.* (2010), in which bat species are categorized by distribution and rarity (Table 2) and roosts assigned to a geographic frame of reference based on the rarity of the species (Table 3). Using these criteria, the building has district importance for bats.

Table 2. Categorising bats by rarity in England (adapted from Wray *et al.*, 2010).

Rarity in England	**Species**
Common	Common Pipistrelle *Pipistrellus pipistrellus*, Soprano Pipistrelle *P. pygmaeus*, Brown Long-eared Bat *Plecotus auritus*
Rarer	Lesser Horseshoe *Rhinolophus hipposideros*, Whiskered Bat *Myotis mystacinus*, Brandt's Bat *M. brandtii*, Daubenton's Bat *M. daubentonii*, Natterer's Bat *M. nattereri*, Leisler's Bat *Nyctalus leisleri*, Noctule *N. noctula*, Nathusius' Pipistrelle *Pipistrellus nathusii*, Serotine *Eptesicus serotinus*

Rarest	Greater Horseshoe *Rhinolophus ferrumequinum*, Bechstein's Bat *Myotis bechsteinii*, Alcathoe Bat *M. alcathoe*, Greater Mouse-eared Bat *Myotis myotis*, Barbastelle *Barbastella barbastellus*, Grey Long-eared Bat *Plecotus austriacus*

Table 3. Valuing bat roosts (taken from Wray *et al.*, 2010).

Geographic Frame of Reference	**Roost Type**
District, local or parish	Feeding perches (common species) Individual bats (common species) Small numbers of non-breeding bats (common species) Mating sites (common species)
County	Maternity sites (common species) Small numbers of hibernating bats (common and rarer species) Feeding perches (rarer/rarest species) Small numbers of non-breeding bats (rarer/rarest species)
Regional	Mating sites (rarer/rarest species) including well-used swarming sites Maternity sites (rarer species) Hibernation sites (rarest species) Significant hibernation sites for rarer/rarest species or all species assemblages
National/UK	Maternity sites (rarest species) Sites meeting SSSI guidelines
International	SAC sites

6. RECOMMENDATIONS

Whilst the development proposals are understood to leave the current loft areas intact, some roof tiles will be removed in fitting Velux windows, which has the potential to impact upon roosting bats.

Before work can lawfully proceed the site must be registered by the ecologist under the Bat Mitigation Class Licence (WML-CL21). An appropriate mitigation strategy will need to be proposed as part of the licence application in order to maintain the favourable conservation status of the species roosting there. **Until the site has been confirmed as registered under the WML-CL21 class licence, no work must take place upon the building.** The following recommendations are made:

- Prior to work commencing a Schwegler 2F woodcrete bat box will be appropriately fitted to nearby trees, under the supervision of the bat ecologist. This box must be kept away from any forms of artificial lighting and kept in place for a minimum of five years. Any bats uncovered during work will be relocated by the ecologist to the box.
- A pre-works inspection will be carried out by a bat ecologist before work takes place.
- Contractors will be given a toolbox talk by the bat ecologist prior to commencing work.
- The relevant parts of the roof will be soft stripped by hand in the presence of a licensed bat ecologist with roof tiles removed with care and checked for bats underneath. Any other features identified by the ecologist as holding potential for roosting bats will also be removed under a watching brief.
- As there current roof voids will remain unchanged there is no requirement for additional bat mitigation.

A precautionary approach to nesting birds must be adopted during building works. Birds may nest between March and September inclusive and if any nests are found within 5m of the works then work must cease until nesting has finished. All wild birds, their nests and eggs are protected by law.

Under the Environment Act recently passed into law (HM Government, 2021) there is a legal requirement for all development requiring planning permission to deliver at least a 10% Biodiversity Net Gain (BNG). Provision is made for this in terms of planning policy under **NPPF** (2021) in the **Cornwall Local Plan** (Cornwall Council 2016). Best practice guidance for developers is provided in the **Cornwall Planning for Biodiversity Guide** (Cornwall Council, 2018).

A single Schwegler 1SP Sparrow Terrace will be fixed to the exterior of the building to take the above requirement into account.

The findings of this report are valid for one year and if works do not commence within that time an update survey will be required.

7. REFERENCES

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