# Bat Survey Report

Site: Racket Town, Tresco, Isles of Scilly

Grid Reference: SV 8928 1492

9th July 2020

**Plan for Ecology Ltd**

Tremough Innovation Centre

Tremough Campus, Penryn, Cornwall, TR10 9TA

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www.planforecology.co.uk

## Document Control:

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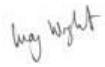
|---|---|
| **Site Name:** | Racket Town, Tresco, Isles of Scilly |
| **OS Grid Reference:** | SV 8928 1492 |
| **Report Author:** | Katherine Biggs BSc (Hons) MSc ACIEEM |
| **Document checked by:** | Dr Lucy Wright BSc (Hons) MSc PhD MCIEEM |
| **Document approved by:** | Dr Kim Jelbert BSc (Hons) MSc PhD MCIEEM |
| **Client:** | Tresco Estate |
| **Report Reference Number:** | P4E1199 |
| **Version:** | 01 |
| **Date:** | 9th July 2020 |

## Declaration:

"The information, evidence and advice, which we have prepared and provided is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology & Environmental Management's (CIEEM) Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions."

| | |
|---|---|
| **Katherine Biggs** |  |
| **Lucy Wright** |  |
| **Kim Jelbert** |  |

## Report Lifespan:

Ecological features can change over time, particularly if site management/ use changes. Typically, bat surveys are valid for 12 – 24 months (until June 2021/ 2022).



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## 1.0 Summary

| | |
|---|---|
| **Bat evidence?** | The property 'Racket town' was visually inspected for evidence of bats on the 11th March and 25th June 2020. Evidence of bats was found within the roof void of the bungalow, in the form of *c.* 60 bat droppings; the building was subsequently assessed as being of 'moderate suitability' for roosting bats.<br><br>Two bat emergence surveys and a static monitoring survey of the bungalow were carried out in accordance with the 'Bat Surveys for Professional Ecologists: Good Practice Guidelines' (2016). No bats were observed to emerge during the first emergence survey. During the second emergence survey, a single common pipistrelle bat (*Pipistrellus pipistrellus*) emerged from the soffit on the south-east projection of the building. No bat calls were recorded during the static detector survey of the roof void. DNA analysis of bat droppings collected from the roof void revealed that these were deposited by brown long-eared bat (*Plecotus auritus*). The results confirm that the building is used by at least one common pipistrelle bat as an occasional day roost, and by at least one brown long-eared bat as a likely occasional day roost. |
| **Proposed works?** | Partial demolition, refurbishment and extension of existing property. |
| **Bat specific mitigation recommendations?** | Works will be carried out under a European Protected Species (EPS) Mitigation Licence or Bat Mitigation Class Licence (CL21).<br><br>Works with potential to impact bats will be carried out under an ecological watching brief and scheduled for a time of year when bats are least likely to be negatively impacted. Two temporary 1FF Schwegler bat boxes will be installed onto a nearby tree to accommodate any bats uncovered during works.<br><br>The identified common pipistrelle day roost within the south-eastern projection will be lost to allow for the development. Loss of the roost site will be compensated by creation of a new roost feature within the refurbished building; this could either take the form of spacing off of fascia boards by 25mm to create a gap behind for bats to roost within, or installation of a single Schwegler Bat Access panels with back plate within the fabric of the building, to be located at least 4 metres above ground level on a south or west facing elevation of the modified property post-development.<br><br>Provision for roosting brown long-eared bats will be made by retaining a roof void measuring *c.* 4m x 4m x 1.5m (latter height), with suitable access for brown long-eared bats e.g. by spacing off of fascia boards by 25mm to provide access at the wall tops, or installation of bat slates or raised ridge tiles within the roof.<br><br>No exterior lighting will be installed close to the temporary and permanent replacement bat roosting features or access points. |



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# 2.0 Introduction

## 2.1 Background

Diana Mompoloki, on behalf of Tresco Estate, commissioned Plan for Ecology Ltd to undertake a Preliminary Bat and Bird Assessment (sometimes referred to as a Bat and Barn Owl Assessment) of Racket Town, Tresco, Isles of Scilly (OS Grid Ref: SV 8928 1492) in March 2020. The client proposes to refurbish and extend the property, including partial demolition of the existing building (south-east projection). Evidence of roosting bats in the form of bat droppings was found within the roof void. In addition, a number of external features with potential to support crevice dwelling bats were noted (Plan for Ecology Ltd, 2020). Racket Town was assessed as being of 'moderate suitability' for roosting bats and further bat surveys were recommended. In accordance with the 'Bat Surveys for Professional Ecologists: Good Practice Guidelines' (Collins, 2016), the recommended further survey work comprised a minimum of two bat emergence or re-entry surveys during the bat active season (May to September inclusive), a static detector survey and DNA analysis of droppings. Diana Mompoloki, on behalf of Tresco Estate, commissioned Plan for Ecology Ltd to undertake the further survey work in May 2020.

This report describes and evaluates the use of the building by bats, and details mitigation recommendations to minimize impacts upon bats in accordance the 'Bat Surveys for Professional Ecologists - Good Practice Guidelines' produced by the Bat Conservation Trust (Collins, 2016).

## 2.2 Project Administration

| | |
|---|---|
| **Property Address:** | Racket Town, Tresco, Isles of Scilly |
| **OS Grid Reference:** | SV 8928 1492 |
| **Client:** | Tresco Estate |
| **Planning Authority:** | Council of the Isles of Scilly |
| **Planning Reference Number:** | Unknown |
| **Report Reference Number:** | P4E1199 |
| **Proposed work:** | Partial demolition (south-east projection only), refurbishment and extension of the property. |
| **Visual Assessment Date:** | 11th March and 25th June 2020 |
| **Emergence Survey Dates:** | 11th and 25th June 2020 |
| **Static Detector Survey Dates:** | Nights of 11th – 15th June 2020 |
| **Ecologist & Licence Number:** | Naomi Scala BSc (Hons) MSc ACIEEM: bat licence No. 2018-34120-CLS-CLS<br><br>Katherine Biggs BSc (Hons) MSc ACIEEM: Bat licence No. 2016-22188-CLS-CLS<br><br>Chloe Balmer MSci (Hons) Qualifying CIEEM member: Bat licence No. 2020-47040-CLS-CLS<br><br>Dr Lucy Wright BSc (Hons) MSc PhD MCIEEM |



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## 2.3 Legislation & Planning Policy

**Planning:** The local planning authority has a statutory obligation to consider impacts upon protected species resulting from development. Planning permission will not be granted with outstanding ecological surveys, and if applicable an appropriate mitigation plan.

**Bats**: In the UK all bat species are listed on Annex IV(a) of the European Communities Habitats Directive and as such are European Protected Species (EPS). In Britain protection of bats is achieved through their inclusion on Schedule 2 of the Conservation and Habitats Regulations 2010, Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 12 of the Countryside and Rights of Way Act 2000 (HM Government, 1981, 2000 & 2010).

As a result of this statutory legislation it is an offence to:

- Deliberately capture, injure or kill a bat;
- Intentionally or recklessly disturb a bat/s in its roost;
- Intentionally or recklessly damage, destroy or obstruct access to a bat roost (even if bats are not occupying the roost at the time);
- Possess or sell or exchange a bat (dead or alive) or part of a bat.

Works with potential to cause significant disturbance to roosting bats may require a European Protected Species (EPSL) licence or Bat Mitigation Class Licence (CL21) from Natural England before works can legally commence. Works likely to result in less significant disturbance may be carried out under a Bat Mitigation Method Statement. The magnitude of disturbance and therefore the requirement for an EPSL, Bat Mitigation Class Licence or method statement is assessed on a case by case basis by the bat ecologist. The Bat Mitigation Method Statement or EPSL must be prepared and/or applied for by a suitably experienced and licenced bat ecologist. Where planning permission is required, the appropriate licence cannot be obtained until planning permission has been granted.


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# 3.0 Methodology

## 3.1 Summary Visual Assessment

A visual assessment of Racket Town, Tresco, Isles of Scilly was undertaken on 11th March 2020. A further visual inspection of the roof void was undertaken when collecting the static detector on 25th June 2020. The ecologists (Naomi Scala and Katherine Biggs respectively) assessed the suitability of the building and the surrounding habitat to support bats and birds. A high-power torch was used to illuminate all accessible areas of the building with potential to support roosting bats and roosting/ nesting birds. The ecologist searched for signs of bats and birds including droppings, staining, feeding remains, bird nests, barn owl pellets and liming. Accessible crevices with potential to conceal a roosting bat were inspected using an endoscope.

The assessment was carried out in accordance with the 'Bat Surveys for Professional Ecologists - Good Practice Guidelines' produced by the Bat Conservation Trust (Collins, 2016). Potential bat roosts identified during the visual inspections of the building were categorised as to their suitability in accordance with the Bat Conservation Trust's (BCT) Good Practice Guidelines (Collins, 2016) as described below:

Negligible: negligible features with potential to support roosting bats.

Low: one or more features with potential to support individual bats on an occasional basis. Unlikely to support large numbers of bats.

Moderate: one or more features with potential to support roosting bats but unlikely to be of high conservation status.

High: one or more features with potential to support large numbers of bats on a regular basis.

## 3.2 Emergence Surveys

Emergence surveys of the building were undertaken on 11th and 25th June 2020. Two ecologists were used during the first survey and it was deemed necessary to include a third surveyor for the second survey in order to fully observe all elevations of the building. Surveyor locations are shown in Figure 1 (below). On both survey occasions surveyors 1 (Chloe Balmer) and 2 (Lucy Wright) used an EMT 2. On the second survey occasion surveyor 3 (Katherine Biggs) used an EMT 2 and an Elekon Batscanner Stereo. Each detector type uses a different method of detecting. The EMT 2 detector and Elekon Batscanner Stereo detectors use heterodyne and real-time expansion, both of which are described below:

- Heterodyne: this method identifies bat calls echolocating at the frequency set by the operator but will fail to/ or only partially record bat calls outside this frequency.
- A real-time expansion bat detector digitally records ultrasonic bat calls and then plays them back at a slower rate and frequency to give an audible output.
- Frequency division: this method automatically and continuously records bat calls at all frequencies, and makes them audible to the human ear by dividing the call frequency by 10. Calls are played in real time and can be readily identified with sound analysis.



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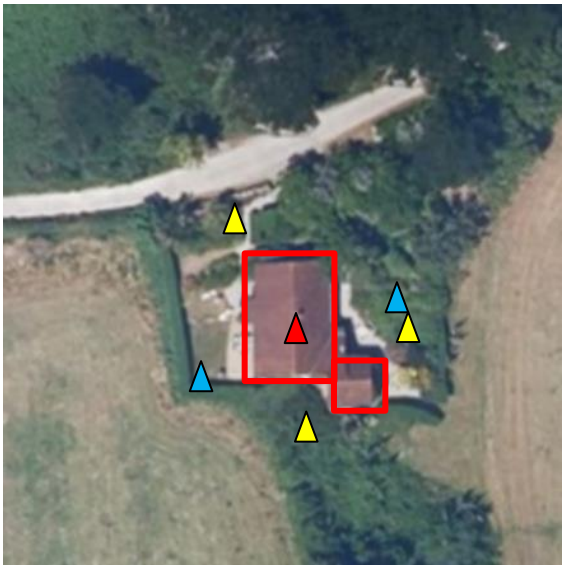

Figure 1: Emergence surveys – surveyor locations. Racket Town is outlined in red. Blue triangles show surveyor locations on the first emergence survey, yellow triangles show surveyor locations on the second emergence survey, and the red triangle shows the location of the static detector within the roof void.

### 3.3 Static Detector Survey

To provide more detailed information about bat activity, a static detector survey was carried out of the building between the nights of 11th and 15th June 2020. A static bat detector (Anabat Express) was installed within the interior of the roof void (Fig. 1; red triangle). The detector was set to record continuously overnight (30 minutes prior to sunset until 30 minutes after sunrise) for a total of 5 nights. The Anabat Express uses the frequency division method of detecting as described in Section 3.2 above.

### 3.4 DNA Analysis

A sample of bat droppings was collected from the roof void of Racket Town just prior to the start of the second emergence survey on 25th June 2020. The sample was sent for DNA analysis to provide further information on the bat species present. DNA analysis was carried out by SureScreen Scientifics Ltd, Derbyshire, U.K.

### 3.5 Ecological Evaluation

The value of buildings/ other structures for roosting bats is determined following the framework provided by Wray *et al.* (2010). This framework determines the appropriate value of a roost on a geographic scale, based on the relative rarity of the bat species using the site (based on the known distribution and population size in the U.K.), as well as the type of roost (based on the results of the emergence/ re-entry and static detector surveys). Where more than one bat species is present within the site, each species is valued individually, and the highest value obtained is assigned to the site.

Table 1 (below) categorizes bat species by their distribution and rarity in England. Table 2 (below) assigns a value for each roost type for the different rarity categories (Tables 1 and 2 are adapted from Wray *et al*. 2010).



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Table 1: Relative rarity of bat species in England (adapted from Wray *et al.* 2010)

| **Rarity (within range)** | **Region**<br>**England** |
|---|---|
| Common | Common pipistrelle (*Pipistrellus pipistrellus*)<br>Soprano pipistrelle (*Pipistrellus pygmaeus)*<br>Brown long-eared (*Plecotus auritus*) |
| Rarer | Lesser horseshoe (*Rhinolophus hipposideros)*<br>Whiskered (*Myotis mystacinus)*<br>Brandt's (*Myotis brandtii)*<br>Daubenton's (*Myotis daubentonii)*<br>Natterer's (*Myotis nattereri)*<br>Leisler's (*Nyctalus leisleri)*<br>Noctule (*Nyctalus noctula)*<br>Nathusius' pipistrelle (*Pipistrellus nathusii)*<br>Serotine (*Eptesicus serotinus)* |
| Rarest | Greater horseshoe (*Rhinolophus ferrumequinum)*<br>Bechstein's (*Myotis bechsteinii)*<br>Alcathoe (*Myotis alcathoe)*<br>Greater mouse-eared (*Myotis myotis)*<br>Barbastelle (*Barbastella barbastellus)*<br>Grey long-eared (*Plecotus austriacus)* |

Table 2: Value of bat roosts (adapted from Wray *et al.* 2010)

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



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### 3.6 Weather Conditions

The weather during the initial visual assessment was in line with seasonal norms. The emergence surveys were undertaken during suitable weather conditions, as described below:

- 11th June 2020: Dry with part cloud cover and a temperature of 15°C at the beginning of the survey; and 13°C, dry and clear at the end of the survey; in accordance with the Beaufort Scale, wind was no greater than a 'light breeze'.
- 25th June 2020: Dry with full cloud cover and a temperature of 16.5°C at the beginning of the survey; and 14°C, dry with part cloud at the end of the survey; in accordance with the Beaufort Scale, wind was no greater than 'light air'.

### 3.7 Limitations

There are a number of visible features on the exterior of the building with potential to support roosting bats, which could not be fully inspected for evidence of bats. This limitation was addressed by undertaking two bat emergence surveys. Two surveyors were used for the first survey, although it was deemed necessary to include a third surveyor for the second survey in order to fully observe all elevations of the building. There are no limitations associated with weather conditions.

The bat surveys were undertaken in accordance with best practice guidance; however, the results of these surveys represent only a snapshot of use at the time of survey.

The calls of four bat species are notoriously difficult to record: the long-eared bats (*Plecotus spp.)* and the barbastelle bat (*Barbastella barbastellus*) have a quiet echolocation call, and the horseshoe bats (*Rhinolophus hipposideros* & *R. ferrumequinum*) have highly directional calls. The long-eared, barbastelle and horseshoe species can be easily missed during bat detector surveys. We presume all *Plecotus spp.* recordings are those of brown long-eared bat (*Plecotus auritus*) because Cornwall is outside the known range of the grey long-eared bat (*Plecotus austriacus*).



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# 4.0 Bat Survey Results

## 4.1 Site Description and Habitat Assessment

The property 'Racket Town' is located centrally on the island of Tresco, Isles of Scilly, *c.* 0.3 km east of New Grimsby beach, *c.* 4.5 km north-west of Hugh Town on St Marys and *c.* 4.4 km west of Higher Town on St Martin's, Isles of Scilly. The location is rural in character with the property next to an area of broadleaved woodland to the north and mixed farmland (pasture and arable with hedgerows) to the south, east and west. An area of reedbeds (Section 41 NERC Act (2006) / UK BAP Priority Habitat) is located *c.* 130 m south of the property. Great Pool (Tresco) Site of Special Scientific Interest (SSSI) is present 140 metres to the south of the site, Castle Down (Tresco) SSSI is present 800 metres to the north west of the site and Pentle Bay, Merrick and Round Islands SSSI is present 630 metres to the north east of the site. Buildings in the wider area comprise a mixture of period and modern properties, outbuildings and barns. In combination these features provide potential high-quality foraging and roosting habitat for bats.

## 4.2 Visual Assessment Summary

The visual assessment was undertaken on 11th March 2020. A further visual inspection of the roof void was undertaken on 25th June 2020.

The property 'Racket Town' is a single-story building of stone construction with a pitched roof and a small porch (Figs 2-4). The roof is of interlocking clay roof tiles with clay ridge tiles (Figs 2-4). There are wooden fascias and soffits; on the southwest corner the fascia is rotten. There is wooden cladding on the north and south elevations (Figs 3-4). There is a small projection off the south-eastern elevation, which is clad with ivy (Fig 5). There is a concrete chimney on the eastern elevation and gaps were observed under the lead flashing. Gaps beneath the lead flashing and a gap in the rotten wooden fascia board provide potential habitat for roosting bats/ provide potential bat access to the building interior.

Internally, the roof void supports a fink style traditional wooden roof structure, is bitumen lined, with rolled insulation between the joists. The void measures *c.* 1.5 m to the apex. Gaps at the wall tops with potential to permit bats access/ provide roosting locations were observed. During the initial visual assessment, *c.* 50 bat droppings were observed scattered throughout the roof void (Fig 6) and a further cluster of *c.* 10 bat droppings were observed beneath, and on, the internal chimney breast. No fresh droppings were noted during the inspection on 25th June 2020.

External features were identified with potential to support roosting bats, and bat droppings were observed within the building interior. The property 'Racket Town' was assessed as being of **'moderate suitability'** for roosting bats.



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Figure 2: View of the west elevation of Racket Town.

Figure 3: View of the east elevation of Racket Town.



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Figure 4: View of the north elevation of the Racket Town.

Figure 5: View of the eastern elevation of the south-east projection of Racket Town, showing dense ivy.



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Figure 6: View of the bat droppings scattered throughout the roof void.

### 4.3 Emergence Surveys

During the first emergence survey on 11th June 2020, no bats were seen to emerge from the building. During the second emergence survey on 25th June 2020, a single common pipistrelle was seen to emerge from the building, from a gap behind the soffit on the western face of the south-eastern projection (Fig 7).

Figure 7: West elevation (left) and aerial view (right) of the south-east projection, showing emergence location of a single common pipistrelle bat on 25th June 2020.



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### 4.4 Bat Static Detector Survey

A static detector survey of the roof void was undertaken between the nights of 11th and 15th June 2020. During the monitoring period no bat activity was recorded within the roof void.

### 4.5. DNA Analysis

DNA analysis of droppings collected from the roof void of Racket Town confirmed the presence of brown long-eared bat.

### 4.6. Bat Species Evaluation

The combined survey results have shown that Racket Town supports a day roost for at least one individual common pipistrelle bat. DNA analysis of bat droppings collected from the roof void also indicates use of the building as a day roost for at least one brown long-eared bat; however, this species was not recorded during the emergence or static detector surveys of the building, suggesting occasional use of the building by brown long-eared bat.

The common pipistrelle: is common and widespread throughout the UK. The population is considered to have increased since 1999 (BCT, 2020).

Racket Town likely supports an occasional day roost for a single non-breeding common pipistrelle bat. The location of the roost is likely within a gap behind a fascia board/ soffit on the western face of the south-eastern projection (Fig. 7). This roost is considered to be of **low conservation significance** for common pipistrelle bat.

The brown long-eared bat: is common and widespread throughout the UK. The population is considered to have been stable since 1999 (BCT, 2020).

Racket Town also supports a likely occasional day roost for at least one non-breeding brown long-eared bat. The location of the roost is within the interior of the roof void, as indicated by the presence of a number of droppings from this species within this part of the building. Brown long-eared bat requires a crawl-in access point, like the gaps underneath lead flashing, behind the fascia and gaps at the wall tops, which were observed from inside the roof void. This roost is considered to be of **low conservation significance** for brown long-eared bat.

Following the framework described by Wray *et al* (2010), as outlined in Section 3.4 above (Tables 1-2), the rarity of the bat species recorded on-site is 'common'. The corresponding value for a day roost of a small number of a common bat species bats is 'District, local or parish' level. Racket Town is, therefore, considered to be of **Local** importance for roosting bats.


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# 5.0 Impacts and Mitigation Recommendations

## 5.1 Evaluation of Development Proposals and Impacts

The further survey work has shown that Racket Town supports a likely occasional day roost for at least one individual common pipistrelle bat and at least one brown long-eared bat. The client proposes to refurbish and extend the existing property, including demolition of the south-east projection, where the common pipistrelle day roost is located.

In the absence of mitigation, the proposals have the potential to disturb, injure or kill bats and to result in the loss of the identified bat roosts (low impact).

## 5.2 Mitigation

To avoid, mitigate and compensate for potential impacts, an outline of the recommended mitigation is provided below (to be agreed with the client). The proposals have potential to have a significant impact on roosting bats; a European Protected Species (EPS) licence or Bat Mitigation Class licence (CL21) must be obtained from Natural England before works can lawfully commence. The appropriate licence will set out the mitigation required to maintain the favourable conservation status (FCS) of the bat species using Racket Town, Tresco.

Outline of recommended mitigation:

- Works will not commence until an appropriate licence has been obtained from Natural England. The licence application should, ideally, be informed with a 3rd emergence or re-entry survey of the building;

- Works will be scheduled for a time of year when bats are least likely to be impacted;

- Works with potential to impact bats will be carried out under an ecological watching brief. A licensed bat ecologist will oversee works to the roof / fascia etc; any common pipistrelles or brown long-eared bats uncovered will be relocated to temporary bat boxes installed onto nearby trees within the garden. NB: the bat boxes (2 x Schwegler 1FF) will be installed in advance of works commencing and in a location that will not be disturbed as a result of building works. See https://www.nhbs.com/ for product specification.

- The existing common pipistrelle day roost behind the soffit on the west elevation of the south-eastern projection will be lost to allow for the development. Loss of this roost will be compensated by creation of a new roost feature within the refurbished building. This could either take the form of spacing off of fascia boards by 25mm to create a gap behind for bats to roost within, or installation of a single Schwegler 1FE bat access panel with back plate within the fabric of the building, to be located at least 4 metres above ground level, on a south or west elevation of the property post-development.

- Provision for day roosting brown long-eared bat will be made in the modified building by retaining a roof void measuring *c.* 4m (length) x 4m (width) x 1.5m (height). Suitable bat access into the roof void will created by spacing off the fascia boards by 25mm to create a gap behind for bats to access at the wall tops, or installation of two bat slates onto each of the eastern and western aspects of the roof with a corresponding slit created in the felt underneath to enable brown long-eared bats to access the roof void below. Alternatively, two raised ridge tiles featuring a gap as described above with corresponding slit in the roof membrane can be used to provide access to the roof void. The roof must be lined with type 1F bitumen as opposed to a synthetic breathable membrane, which can be harmful to bats.


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- No exterior lighting will be installed close to the temporary and permanent bat roost features or access points.

- Building contractors will be briefed prior to commencement of site works. Contractors will be notified about the potential presence of bats and informed that if a bat/s is/are uncovered during works, then work must stop immediately (as soon as it is safe to do so) and advice sought from the licensed bat ecologist/s (Plan for Ecology Ltd, 01326 218839).


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