



Isles of Scilly Wildlife Trust
Trenoweth, St Mary's, Isles of Scilly, TR21 0NS
Tel: 01720 422153
darrenmason@ios-wildlifetrust.org.uk
www.ios-wildlifetrust.org.uk

PRELIMINARY ECOLOGICAL APPRAISAL & PRIMARY BAT ROOST ASSESSMENT OF:

TRELAWNEY
CHURCHTOWN
ST MARTIN'S
ISLES OF SCILLY
TR25 0QL

Client: Blackwell Building Services on behalf of Ken Rokison

Our reference: BS4-2018

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Author: Darren Mason BSc (Hons)

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1.0 Introduction

Survey and reporting

This report details the results of a primary ecological appraisal and a preliminary bat roost assessment of Trelawney, Churchtown, St Martin's, TR25 0QL. The survey, carried out on the 10th August 2018, was undertaken in order to inform proposals to replace the existing scantle roof of the main dwelling with traditional slate tiles.

The application site

The house is located in Churchtown, St Martin's (National Grid Reference SV9273815727, Figure 1.). The application site is comprised of a single detached dormer-style dwelling with conservatory a detached garage and out-house (Photo 1). The total area of the main dwelling is approximately 120m² (not including the garage and out-house) and the sites total footprint approximately 1,450m² (red area, see Figure 1).

Details of proposed works

It is proposed to replace the existing scantle tiles on the main dwellings roof with traditional slate tiles.



Figure 1. Location of Trelawney



Photo 1. North elevation of Trelawney with garage and outhouse in foreground

2.0 Methodology

Preliminary Ecological Appraisal - Desk Study

A desk study data search was undertaken. This involved carrying out a review of the Local Records Centres (LRC) available records for bat species and publicly available datasets and citations of statutory designated sites of importance for nature conservation for sites within the zone of influence (ZOI) of the survey area (considered to be a maximum of 2km in this case). The desk study was also undertaken to identify habitats and features that are likely to be important for bats and assess their connectivity through the use of aerial photographs.

Preliminary Bat Roost Assessment

The Preliminary Bat Roost Assessment comprised a survey of the building for bats, signs of bats and features potentially suitable for use by roosting bats, and an assessment of the surrounding habitat in terms of its suitability for commuting and foraging bats.

The survey consisted of a ground based inspection and a detailed search of the interior and exterior of the building (from ground level), looking for bats and/or evidence of bats including droppings (on walls and windowsills and in roof and loft spaces), rub or scratch marks, staining at potential roosts and exit holes, live or dead bats and features, such as raised or missing tiles, potentially suitable for use by roosting bats. Binoculars, a ladder and a high-powered torch were used as required.

Classification of building

The building was classified according its suitability for use by roosting bats. The classification was dependent on a number of factors including:

- Bats and/or signs of bats;
- External and internal features potentially suitable for use by roosting bats (e.g. raised or missing tiles, gaps behind fascia boards etc);
- Setting;
- Night time light levels;
- Disturbance levels;
- Proximity of suitable foraging habitat and commuting routes (e.g. ponds, streams, woodland, large gardens, hedgerows).

The categories used to classify buildings and the survey effort required to determine the presence or absence of bats (as per the Bat Conservation Trust's Bat Survey Guidelines¹, referred to by Natural England in their standing advice to planning officers) are described in Table 1.

Surveyor details

The survey was undertaken by Darren Mason BSc of the Isles of Scilly Wildlife Trust. Darren has undertaken professional Bat Licence Training to permit him to undertake professional surveys and is currently gathering sufficient 'working hours' to achieve a Natural England Class Level 1 licence.

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

Table 1 – Description of the categories used to classify a building’s bat roost potential and the survey effort required to determine the likely presence or absence of bats

Bat Roost Potential	Roost status	Description	Survey effort required to determine the likely presence or absence of bats
	High	Numerous features potentially suitable for use by roosting bats, optimal or good quality bat foraging habitat nearby and good habitat connectivity. Alternatively, a building with fewer features potentially suitable for use by roosting bats and optimal foraging habitat nearby.	Three dusk emergence and/or pre-dawn re-entry surveys between May and September. Optimum period May – August. Two surveys should be undertaken during the optimal period and at least one survey should be a pre-dawn survey.
	Moderate	More than a few features potentially suitable for use by roosting bats, good foraging habitat nearby and limited habitat connectivity. Alternatively, a building with a few features potentially suitable for use by roosting bats but optimal foraging habitat nearby.	Two or three dusk emergence and/or pre-dawn re-entry surveys between May and September (but only if features will be affected by the proposals).
	Low	Only a few features potentially suitable for use by roosting bats but good bat foraging habitat nearby. Alternatively, a building with more than a few features potentially suitable for use by roosting bats but sub-optimal foraging habitat nearby and limited habitat connectivity.	One or two dusk emergence and/or pre-dawn re-entry surveys between May and September (but only if features will be affected by the proposals).
	Negligible	Very few features potentially suitable for use by roosting bats and / or in an area (such as a densely populated urban area) which has limited habitat connectivity and poor foraging habitat.	No further surveys required.

3.0 Results

Primary Ecological Appraisal

3.1.1 Pre-existing information on bat species

The desk study showed that no species of bat have previously been recorded within the building. But, a data search of LRC records for bats revealed information on 1 species of bat recorded within the 2km ZOI of the site. The species conclusively identified was Common Pipistrelle (*Pipistrellus pipistrellus*).

3.1.2 Statutory and non-statutory sites

In addition, the desk study revealed the presence of the following statutory designated sites within the 2Km ZOI of the site:

- i. **Plains and Great Bay SSSI** – Lying approximately 250m north-west of Trelawney, Plains and Great Bay SSSI is designated for a variety of habitats, including a well-developed strandline and embryo dunes and associated species. The dune grassland further inland is particularly important for the nationally scarce Orange Bird's-foot (*Ornithopus pinnatus*) and the rare Ramping Fumitory (*Fumaria capreolata*). The heathland is dominated by Common Heather (*Calluna vulgaris*), Bell Heather (*Erica cinerea*) and Western Gorse (*Ulex gallii*) and associated lichen flora.
- ii. **Chapel Down SSSI** – Situated approximately 900m due-east of Trelawney is Chapel Down SSSI. An important site for its 'waved' maritime heath, dominated by Common and Bell Heather, with scarce records of Bird's-foot-trefoil (*Lotus corniculatus*), Heath Bedstraw (*Galium saxatile*) and the nationally scarce Orange Bird's-foot and rare Hairy Bird's-foot (*Lotus subuliflorus*). On the western edge of the SSSI there is a small population of the locally rare Pignut (*Conopodium majus*).
- iii. **White Island SSSI** – Located 1.3km from Trelawney to the north-west and just off the coast of St Martin's is White Island SSSI. Designated primarily for its geological deposits, maritime heathland, maritime grassland and small colonies of breeding seabirds along its isolated cliffs.
- iv. **Tean SSSI** – Lying 1.5km due west of Trelawney Tean SSSI is an uninhabited island designated primarily for its dune and scrubby grassland species assemblage including the very rare Dwarf Pansy (*Viola kitaibeliana*), Four-leaved Allseed (*Polycarpon tetraphyllum*), the nationally scarce Balm-leaved Figwort (*Scrophularia scorodonia*) and Orange Bird's-foot.

- v. **Eastern Isles SSSI** – Situated off the south-east coast of St Martin's and 1.9km south-east of Trelawney lies this small group of isolated islands. Designated for their wildflower assemblage (111 species in total), archaeology and breeding seabirds including, Lesser Black-backed Gull (*Larus fuscus*), Great Black-backed Gull (*Larus marinus*), Puffin (*Fratercula arctica*), European Shag (*Phalacrocorax aristotelis*) and Fulmar (*Fulmaris glacialis*).

3.1.3 Habitats surrounding the application site

Trelawney lies on the western edge of Churchtown, a very small conurbation consisting of 3 detached dwellings, Churchtown Farm, the local school and the local church. Situated in the centre of the island, Trelawney is linked to the other dwellings to the north and the school to the west via small lanes bounded by mature hedgerows on both sides. The lane immediately to the south-west leads to a large area of small fields (once bulb fields), which now appear to be used to grow vegetables. Immediately to the east lies Churchtown Farm, an active flower farm with small fields and mature hedgerows which backs onto Higher Town, the main conurbation of St Martin's. Here there are numerous dwellings with various size gardens, which back onto a range of former flower fields and hedgerows continuing eastwards. The immediate habitat around Trelawney provides good foraging habitat for bats and this habitat remains well connected to the west and south for a further 500m and approximately 1000m to the east. However, beyond these distances and to habitat to the north of Trelawney this connectivity for bats to commute and forage breaks down.

3.1.4 Habitats within the application site

Trelawney is a detached property that is bounded by well maintained hedgerows of Pittosporum (*Pittosporum tenuifolium*) and Coprosma (*Coprosma repens*) of varying heights on three sides. On its northern boundary the Pittosporum hedge that backs onto the lane also includes English Elm (*Ulmus procera*) and two mature Sycamore (*Acer pseudoplatanus*). Scattered throughout the open grassed garden are small borders of mixed shrubs including Hebe (*Hebe sp.*), Bottlebrush plant (*Callistemon sp.*), Hydrangeas (*Hydrangea macrophylla*) and New Zealand Flax (*Phormium sp.*). Scattered amongst the shrub are plants such as Monbretia (*Crocasmia sp.*), Agapanthus (*Agapanthus africanus*), Aeonium (*Aeonium sp.*) and Fuchsia (*Fuchsia sp.*). Scattered throughout the garden are several tall, mature Yuccas (*Yucca sp.*) and standing very close to the western end of the house are 2 Monterey Cypress (*Cupressus macrocarpa*).

Primary Roost Assessment

3.2.1 External

Trelawney is a detached one and a half storey, stone-rendered house. The house has a half-hipped roof with a pitch of approximately 30° on both its northern and southern aspects. Both pitches are clad with scantle roof tiles and capped with clay and what appear to be concrete ridge tiles. On its southern aspect are two dormer windows clad in slate on their west and east aspects. There are two internal chimneys set at both the western and eastern ends of the southern elevation of the house. The fascia and soffit boards appear to be wooden. The windows and guttering are modern UPVC. Attached to the western end of the house is a modern UPVC conservatory with an opaque plastic roof. On its northern aspect is a small porch with an open gable roof with an east/west aspect.

Set apart from the house is a detached garage and conservatory and an adjoining outhouse. The garage and conservatory has a closed gable roof with an east/west aspect of approximately 25° clad with modern slate tiles. The outhouse has a north facing mono-pitch roof with a pitch of approximately 15° clad with modern slate tiles. In the garden, west of the house is a large, wooden ship-lap shed with an open gable roof, lined with felt.

The dwelling has a number of features potentially suitable for roosting bats, including:

- Large gap between the fascia and sarking of the roof at the eaves on the eastern aspect (see photo 2.)
- Raised roof tiles towards ridge of east facing porch roof (see photo 3.)
- Slim crack between top of fascia (eastern elevation) and mortar of south-facing roof (see photo 4).
- Large gaps around base of chimney to the east and adjoining flashing (see photos 5)
- Large gaps where dormer windows and roof joins, gaps in flashing and large gaps in vertical tiles on both windows and both sides (see photos 6 & 7).
- Individual gaps at base of dormer windows, where flashing lies over roof tiles (see photos 8 & 9).
- Above and to the right of the velux window there is a group of loose raised tiles (see photo 10).
- Several raised tiles below and to the left of the velux window there are individual raised tiles (see photo 11).
- On western elevation there is a large gap between the fascia and the sarking of the roof (see photo 12).

- At the base of the soffit board on the west gable (south facing) end there is a large hole along with a large gap behind the flashing where the conservatory sits against the building (see photo 13.)
- At the opposite end of the gable (north facing) there is a large hole between the soffit boards of the west and north elevations (see photo 14).
- Several raised tiles throughout the north facing roof (see photo 15).



Photo 2. Gap between fascia and sarking on east elevation.



Photo 3. Raised roof tiles towards ridge of porch roof (east elevation)



Photo 4. Slim crack between top of fascia and mortar of south facing roof



Photo 5. Gaps in flashing at base of chimney



Photo 6. Raised tiles and gap in flashing around dormer window



Photo 7. Large gaps where dormer joins roof and gaps under tiles



Photo 8. Gap in flashing at base of dormer window



Photo 9. Gaps in flashing at base of dormer windows



Photo 10. Small group of loose and raised tiles above velux window

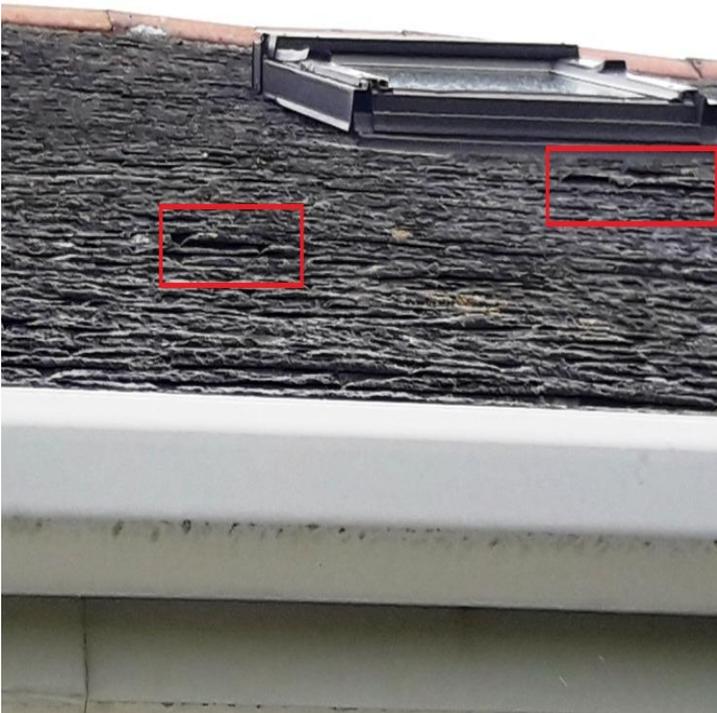


Photo 11. Raised tiles below velux on south facing roof



Photo 12. Large gap between sarking and fascia on west elevation



Photo 13. Large hole in south-facing gable (western aspect) and gap between conservatory and main building



Photo 14. Gap between the soffit boards of north and western facing elevations



Photo 15. Numerous raised tiles in north-facing roof

Evidence of bat activity around Trelawney was also recorded with bat droppings found (photos 16 and 17) on the east-facing wall below the slim crack between the fascia and the mortar (see photo 4). These were taken back to the office for examination. The lengths of the droppings were 7mm long by 1.5mm wide. The texture when broken-up, were of a very fine consistency. These findings are consistent with droppings from a Pipistrelle species of bat.



Photos 16 & 17. Bat droppings found on eastern aspect below slim gap between fascia and mortar as seen in photo 4.

3.2.2 Internal

The half-hipped roof design meant that most of the loft space is occupied by bedrooms and bathrooms. Access to the limited loft space was via small access hatches in the bedrooms at floor height, and only found in the north and south-facing aspects. The majority of the loft space was boarded, with fibreglass insulation evident where no boards existed. There was little evidence of cobweb development throughout the whole of the loft space. In the south facing loft space the roof was lined with modern breathable membrane (see photo 18). In contrast, the north-facing loft space no lining existed. This enabled examination of the tiling which, in places was tightly bound together (see photo 19) and appears to provide limited space for roosting bats. However, this varied throughout and in places numerous gaps existed (see photo 20).

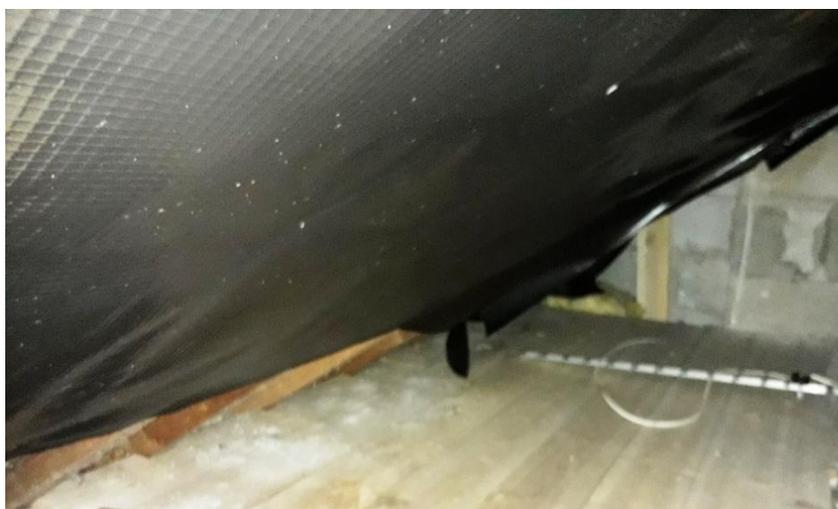


Photo 18. Southern loft space with breathable membrane



Photo 19. Northern loft space showing not gaps between the roof tiles.



Photo 20. Northern loft space showing gaps between the roof tiles

4. Assessment and recommendations (excluding bats)

4.1.1 Protected sites

The proposed development falls into the SSSI Impact Risk Zones of Plains and Great Bay SSSI. Impact zones are used in the assessment of planning applications for likely impacts on SSSI's, Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar Sites (England). However, the impact in this zone is for large-scale residential developments and therefore the development is not likely to impact on the surrounding SSSI.

4.1.2 Nesting birds

All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended). Section 1 of this Act makes it an offence to kill, injure or take any wild bird, or intentionally to take damage or destroy the nest of any wild bird while that nest is in use or being built. During this survey, no evidence was found of nests, or breeding birds. However, if works on the roof are to commence between the months of March and August inclusive, then the site would need to be checked first for nesting birds and, if any nests are found, works that would disturb the nest must be postponed until all young have fledged the nest and it is no longer in use.

5. Assessment and recommendations (bats)

5.1 Survey constraints

The survey was undertaken at a time of year suitable for undertaking preliminary bat roost assessments. However, the chimneys were not accessible. These limitations have been taken into consideration in the assessment and recommendations given below.

5.1.1 Further survey requirements

The value of the house for bats is considered to be 'moderate' (see Table 1). This assessment is based on the occurrence of the following features within or immediately adjacent to the site:

- Evidence of use due to the presence of droppings typical of a Pipistrelle species of bat.
- Several potential roost sites for a large number of bats
- Several potential opportunistic roost sites for a small number of bats
- The house has a large mature garden, with a varied structure both in terms of height and the species present providing optimal foraging habitat.

- The garden is connected to the west and east by established hedgerows that lead to small enclosed fields with further hedgerows as boundaries. However, this habitat connectivity is limited to approximately 500m and 1000m in each direction respectively. Pipistrelle species typically have a minimum foraging distance of 2km².
- To the north and south the habitat is very open, with little habitat connectivity. Typically, smaller species of bat such as Pipistrelles will not cross gaps in hedgerows as small as 10m³.

Trelawney has been used by bats, on the basis of the evidence found so far, it is considered most likely to have been a pipistrelle species (most likely Common Pipistrelle) used occasionally by one or two individual bats. The building also has potential to host further crevice-dwelling species of bat.

To confirm whether or not the house continues to host roosting bats further surveys (see section 5.1.2) carried out during the bat active season would need to be undertaken.

5.1.2 Presence or absence surveys

The Bat Conservation Trust's Bat Survey Guidelines¹ (referred to by Natural England in their advice to planning officers) state that buildings with 'moderate' bat suitability require two separate survey visits between May and September. These surveys should consist of one dusk emergence survey and a separate dawn re-entry survey.

The surveys should take place in optimum weather conditions, in order to maximise the likelihood of recording bats, with dusk air temperatures exceeding 10⁰C and not rain or strong wind.

Dusk emergence surveys should commence 30 minutes before sunset and continue for up to three hours after sunset. A pre-dawn re-entry survey should commence 90 minutes before sunrise and continue until 15 minutes after sunrise.

2. Nicholls, B. & Racey, P.A. (2006). *Contrasting home-range size and spatial partitioning in cryptic and sympatric pipistrelle bats*. *Behav. Ecol. Sociobiol.* 61: p131-142

3. Entwistle, A.C. et al. (2001). *Habitat Management for Bats*. JNCC.

Sufficient surveyors should be used on each survey so that all aspects of the building can be viewed at one time, therefore the building should be adequately surveyed by two surveyors. Surveyors should be positioned no more than 50m away from the buildings with an awareness of the likely exit/access points and potential roost locations. Each surveyor should be equipped with a bat detector and recording equipment and should count and not bats and their activity in a defined area.

If no roosts are found during the presence or likely absence surveys then no further surveys would be required.

5.1.3 Mitigation

In order to comply with planning policy and wildlife legislation (both domestic and European) it will be necessary to ensure that following the development the "favourable conservation status" of bats will be maintained. This means that, where a roost will be lost, appropriate mitigation needs to be provided.

If roosts are found a detailed roost characterisation survey would be required to establish how bats use the roost, the intensity of use and what features and characteristics of the roost and the surroundings are important. The information gained would allow an accurate assessment of the potential impacts of the development on bats and inform the requirement of a European Protected Species Mitigation licence, to be considered and issued by Natural England prior to the works commencing.

If roosts are found then a data search will be required to support the European Protected Species Mitigation licence if an application is required. Information should be obtained in relation to bat roost sites or any sites of nature conservation importance designated for their bat interest within or near to the proposed development site. When requesting information a minimum search radius of 2km from the site should be applied.

6. Summary

Trelawney has been used by bats (on the basis of the evidence so far, most likely Common Pipistrelle) and it may still be used by a Pipistrelle species. To assess whether bats roost in the building two surveys are required; one dusk emergence and one separate dawn re-entry survey carried out between mid-May and September. If bats are found to be roosting in the dwelling then, the status of the roost(s) will need to be identified. Further surveys will then be required to inform a mitigation strategy which would need to be implemented.

Other than bats, if the recommendations given in this report regarding nesting birds are adhered to, there should be no further ecological constraints to the proposals.