PRELIMINARY ECOLOGICAL APPRAISAL & PRELIMINARY BAT ROOST ASSESSMENT OF:

TREVEAN, HIGHER TOWN, ST MARTIN'S, ISLES OF SCILLY, TR25 0QL

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Contents

Ар	pen	dix 1 – Bat DNA Analysis Results	27			
7.	Re	ferences	26			
6.	Sı	immary	25			
	5.4	4 Mitigation	24			
	5.3	Presence or absence surveys	23			
	5.2	2 Further survey requirements	22			
	5.	1 Survey constraints	22			
5.	As	Assessment and recommendations (bats)				
	4.3	3 Nesting birds	20			
	4.2	2 Habitats	20			
	4.	1 Protected sites	20			
4.	As	sessment and recommendations (excluding bats)	20			
	3.9	9 Summary	19			
	3.8	3 Single-storey Residential - Internal	17			
	3.	7 Single-storey Residential - External				
	3.0	6 Glasshouse/Workshop – Internal	14			
	3.	5 Glasshouse/Workshop - External	13			
F	Preli	minary Roost Assessment	13			
	3.4	4 Habitats within the application site	12			
	3.3	B Habitats surrounding the application site	11			
	3.2	2 Statutory and non-statutory sites	10			
	3.	Pre-existing information on bat species	10			
F	Preli	minary Ecological Appraisal	10			
3.	Re	sults				
ź	2.4	Surveyor details				
ć	2.3	Classification of building	9			
ć	2.2	Preliminary Bat Roost Assessment	9			
2	2.1	Preliminary Ecological Appraisal - Desk Study	9			
2.0)	Vethodology				
	1.3	Details of proposed works				
	1.2	The application site	6			
	1.1	Survey and reporting	6			
1.0)	Introduction	6			

Non-Technical Summary

- On 4th June 2020, a Preliminary Ecological Appraisal (PEA) and Preliminary Roost Assessment (PRA) was carried out on Trevean in Higher Town, St Martin's, Isles of Scilly, TR25 0QL in order to establish baseline conditions, determine the importance of any ecological features within and around the survey area and to establish the actual or potential use of the building by bats to help inform the determination of Planning Application P/20/039.
- This report outlines the findings of the PEA and PRA assessment and provides advice based on the surveys' conclusions. As the proposals contained within the Planning Application relate primarily to works within the existing footprint and structure of the existing buildings, this assessment is focused on the PRA of the buildings; however consideration is also given to habitats within the footprint of the proposed workshop and porch extensions.
- During the PRA an external/internal inspection of the building was undertaken (where accessible).
- Nesting birds including sparrow and starling were confirmed utilising nesting habitat associated with the apex of the pitched roof of the existing glasshouse/workshop, and the apex of the kitchen roof.
- The immediate habitat surrounding the proposed development presents optimal habitat for foraging bats including mature gardens, a network of small bounded agricultural fields and abundant semi-natural habitat with direct and proximate access to the shore and strandline.
- The kitchen loft space was **confirmed to support roosting common pipistrelle bats** the evidence gathered is consistent with non-breeding summer use by individual or small numbers of bats but further surveys to characterize the roost are required.
- The buildings offer further features which could be used by crevice-roosting species such as common pipistrelle, primarily externally but also within internal features such as the sealed void below the ridge of the glasshouse/workshop. The features are most likely to provide suitable conditions for non-breeding summer or transitional roosts.
- Taken in combination, the characteristics of the building and the surrounding habitat suggest **moderate roost potential** for bats within the buildings in features additional to the confirmed roost.
- The recommendations of this PEA and PRA are that two activity surveys are carried out, consisting of one dusk emergence and one dawn re-entry survey carried out within the bat

active season between May and September. Further surveys may be required to characterize the confirmed roost to an appropriate standard; however this must be reviewed following the results of the initial surveys.

- Aside from bats and nesting birds, no other ecological receptors are identified which require consideration to inform the determination of this Planning Application.
- It must be noted that this report is not enough to support a Planning Application.

1.0 Introduction

1.1 Survey and reporting

This report details the results of a preliminary ecological appraisal (PEA) and a preliminary bat roost assessment (PRA) of the single-storey elements of the residential dwelling and a detached glasshouse/workshop at Trevean, Higher Town, St Martin's, Isles of Scilly, TR25 0QL. The survey was carried out on the 4th June 2020.

1.2 The application site

Trevean is located centrally along the southern periphery of the settlement of Higher Town in St Martin's (National Grid Reference SV 93023 15534). The Application Site comprises of a detached house adjacent to a workshop/glasshouse set within a plot of mature garden which stretches to the south and west. This is illustrated in **Figure 01** below.



Figure 01 – Aerial map showing the location of the Application Site – reproduced from Google Earth imagery in accordance with their Fair Use Policy.

The main detached house can be considered to comprise four distinct components for the purpose of this report and these are indicated in **Figure 02** below. The main residential property comprises:

- an two-storey component with a higher ridge line (shown in blue in Figure 02 below);
- a two-storey component with a lower ridge line (shown in purple);
- a single-storey kitchen (shown in yellow) and;
- a single-storey linking porch and second kitchen (shown in orange) attaching the main kitchen to the main two-storey components.

In addition to the main residential dwelling formed of the four contiguous components, there is a separate detached workshop/glasshouse (shown in green).



Figure 02 – showing the structurally or physically distinct components of the property – reproduced from the Existing Plans submitted by the Applicant in support of Planning Application P/20/026. This map pertaining to a different application is used to provide consistency between the two reports produced which deal with proposals relating to the same buildings.

1.3 Details of proposed works

Two separate planning applications associated with this property have been submitted by the Applicant in June 2020 – this report relates to work associated with Application P/20/039 and the focus of descriptions and results is concentrated on the elements of the property to be affected by the proposals.

Application P/20/039 concerns the conversion of the existing detached glasshouse/workshop (shown in green on Figure 02) into a studio/workshop space. This includes erecting an extension to

the south-west, and a porch to the north-east connecting it with the existing kitchen (shown in yellow in Figure 02). Minor modifications to the existing single-storey link section (shown in orange in Figure 02) will also occur – it is understood that this relates to the replacement of the existing roof coverings with a glazed canopy.

Minor modifications to the two-storey buildings (shown in blue and purple in Figure 02) include modification of the internal layout and the installation of two new windows. These are not given further consideration in this report as they do not materially differ from the proposals and potential impacts detailed within Application P/20/026 with regards to bats, and are therefore more conveniently considered through the further survey recommendations relating to that Application.

2.0 Methodology

2.1 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.

2.2 Preliminary Bat Roost Assessment

The Preliminary Bat Roost Assessment comprised a survey of the buildings 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 buildings (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.

2.3 Classification of building

The buildings were classified according to their suitability for use by roosting bats. The classification was dependent on a number of factors including (but not limited to):

- 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 (see below).

2.4 Surveyor details

The survey was undertaken by James Faulconbridge MRes, MCIEEM on behalf of the Isles of Scilly Wildlife Trust. James has twelve years' experience undertaking bat surveys and holds a Natural England WML-A34-Level 2 (Class 2 License); registration number: 2015-12724-CLS-CLS which permits him to survey bats using artificial light and endoscopes and capture bats using hand and hand-held static nets.

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

	Roost status	Description	Survey effort required to determine the likely presence or absence of bats
Bat Roost Potential	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.

Table 1. Categorising and classifying a building's bat roost potential

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

3. Results

Preliminary Ecological Appraisal

3.1 Pre-existing information on bat species

The desk study showed that no species of bat have previously been recorded within the building and no known roosts have been recorded within 2km of the proposed development.

A data search of LRC records for bats revealed information on 2 species of bat recorded within the 2km ZOI of the site. The species conclusively identified were Common Pipistrelle (*Pipistrellus pipistrellus*) and Soprano Pipistrelle (*Pipistrellus pygmaeus*) a UK Biodiversity Action Plan (BAP) priority species.

3.2 Statutory and non-statutory sites

The desk study confirmed 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 arstotelis*) and Fulmar (*Fulmaris glacialis*).

3.3 Habitats surrounding the application site

The Application Site is situated within Higher Town – this is the eastern-most and largest settlement on the island of St Martin's in the Isles of Scilly. The town comprises a small number of detached and terraced houses along with chalets, small-scale agricultural buildings and outbuildings. There is no external street lighting within the settlement with night-time lighting arising from residential light spill eg. through windows.

The town comprises three 'arms' linked in the centre by a triangular junction. The northern-western portion is the most built-up whilst the southern arm comprises a single terraced row of cottages and a farmhouse known as Signal Row. The Application Site is on the western arm of Higher Town which comprises scattered detached houses and some terraced components running along a ridge line with the land falling away to the south – the property lies on this southern boundary and opens directly onto gardens and agricultural land to the south.

Trevean is set within a mature garden which extends to the south; beyond which is a contiguous landscape of small, hedgerow-bound fields which vary in their level of current use and management. Significant encroachment of elm (*Ulmus sp.*) has occurred in some of these fields presenting a habitat mosaic of young secondary woodland, productive 'fallow' leys, disused flower

fields and unmanaged grassland with strong linear vegetated components in the form of evergreen hedges. Further south are the dunes, beach and associated stand-line of Par Beach and Higher Town Bay. To the south-east is the peninsula of Cruthers Hill which is dominated by gorse, bracken and heather whilst further agricultural land-use including a vineyard and permanent pasture dominates to the south-west.

To the north-west of the property, the landscape is dominated by small, bounded fields under active cultivation for bulbs and flowers; whilst permanent pasture demarked into small fields by stone walls dominate to the north-east. Beyond both of these land uses lies the northern portion of the island which is not subject to agricultural management and presents a mosaic of habitats dominated by heathland with grassland, dunes, beaches and the strandline as the coastline is reached.

This mosaic of habitats surrounding Trevean presents optimal quality foraging habitat for the common pipistrelle which is the primary species regularly recorded in flight on St Martin's and represents the vast majority of the background records. The habitats would also be suitable for use by soprano pipistrelle which has broadly similar habitat requirements.

3.4 Habitats within the application site

The residential dwelling and workshop/glasshouse of Trevean are situated on the northern periphery of the Application Site, abutting the road directly along the boundary.

The remainder of the property comprises a mature garden which was been under-managed but has recently been cleared and opened by the Applicant to restore the original character and design. The garden boundaries to the south, east and west are demarked by evergreen windbreaks whilst the northern boundary, where not lined by the buildings, is open with 3x hawthorn (*Crataegus sp.*) trees.

The garden includes a typical range of herbaceous and ornamental species including shrubs, bulbs and perennial species. Occasional arable wildflowers within the borders along with bramble (*Rubus fruticosus agg.*) and honeysuckle (*Lonicera sp.*) scrambling through vegetation and climbing stonework in places. A number of mature elm (*Ulmus sp*) trees occur within the garden along the eastern boundary of the site – these have undergone tree surgery to manage their shape and structure during the winter 2019/20 following clearance of competing trees/shrubs. A number of these trees have a knot-holes and rot holes which could present suitable nesting habitat for breeding birds, or roosting opportunities for bats.

The proposed footprint of the linking porch between the glasshouse/workshop and the kitchen is currently dominate by hardstanding with minor ornamental elements. The proposed footprint of the workshop extension is recently cleared vegetation comprising typical ruderal species with some remaining ornamental components.

In summary, within Trevean's immediate footprint there is a mature garden with a range of native and ornamental species of shrub and plant that may attract a variety of invertebrates which bats may prey upon, making the immediate habitat optimal for bats leaving and entering a roost. A number of small mature trees provide structural variety and further potential foraging opportunities.

Preliminary Roost Assessment

This assessment will focus only on those elements of the property which are to be directly affected by the proposals contained within Planning Application P/20/039, for clarity and brevity. This is restricted to the single-storey elements of the main residential building at Trevean and the detatched glasshouse/workshop – see Figure 02 for illustration. Proposals affecting the two-storey elements of the residential building are subject to a separate Planning Application and a PEA/PRA of these proposals will be contained in a separate report.

3.5 Glasshouse/Workshop - External

The existing single-storey glasshouse/workshop is granite-built with significant areas of woodentimbered glazing onall aspects except for the north-western side which abuts the road. There are frequently gaps between the timber frame elements and the granite block walls into which they are fitted.

The stonework is generally in good condition though there are minor gaps in the pointing throughout and occasional gaps in the south-western gable end where pipes enter the wall or have been removed. Minor gaps could be identified above the timbers which line the wall-plate on the south-eastern aspect. Barge boards on the eaves and gable verges have gaps created by the junction between the linear board and the irregular texture of the stonework to which they are attached. These present potential roosting opportunities behind the boards themselves as well as allowing access to the wall plate and to potential gaps associated with the roof structure.

To the south-east, the majority of the roof is glazed with wooden timbers forming the framework – however there is a corrugated sheet section to the eastern end (closest to the dwelling) which has solar panels installed. To the north-west, the roof is slate-tiled. Tiles are generally well-fitted but occasional gaps or lifted elements occur in places, especially at the western end of the north-western aspect.

There is a chimney present within the roof of the building – no potential roosting opportunities were identified associated with this feature.

A number of nesting birds are confirmed in the building, utilising access features associated with the apex at each gable end. A sealed triangular void runs beneath the ridgeline and it is believed that nesting birds are accessing sites associated with this void. Species confirmed include house sparrow and starling.

3.6 Glasshouse/Workshop – Internal

The building is open to the rafters creating a high internal ceiling at the apex despite being only single-storey. The current use is for storage and the internal space requires a degree of renovation and restoration – to the south it is light and open due to the glazed roof whilst the northern side beneath the slate roof is darker.

No potential roosting features are identified associated with the south-eastern aspect due to the predominance of glazing in the structure; to the north-west the roof has exposed rafters and purlins with plastering in between to seal the tiles from the internal space. There is potential for minor roosting opportunities to occur beneath these.

The structure is constructed around a central wall which runs beneath the ridge and represents the central support – it is above this feature that the triangular sealed void formed by the pitch of the roof is located. It was not possible to access or otherwise inspect this feature internally. This may represent suitable roosting opportunities.

No other internal roosting opportunities were identified associated with the building.



Photo 01 – north-eastern gable of the existing glasshouse/workshop where the porch linking to the main residential dwelling is proposed.



Photo 02 – showing the gap into the sealed ridge void from the north-eastern; gaps between timber frame elements and adjacent blockwork; and gaps behind fascia/barge boards.





Photo 03 – showing an example of an access feature Photo 04 – showing the building photographed in the south-western aspect where pipework enters the wall.

from the south-west.



Photo 05 – showing the interior of the building to the south-east with significant areas of glazing. The central wall below the ridge is seen to the right.



Photo 06 – showing the interior of the building to the north-west with plastering between the rafters. The central wall below the ridge is seen to the left.

3.7 **Single-storey Residential - External**

The existing kitchen is granite built and single-storey with a pitched, slate-tiled roof with ridge tiles. The tiles are generally well fitted – however a lifted ridge tile presumed to have a ventilation function is present which could potentially provide access to a roosting opportunity.

The walls of the building are well-pointed throughout. uPVC windows are well-fitted and in good condition, with no gaps noted except for a minor gap in the timber lintel above the gable window. There are hanging tiles which line the gable verge and these have minor gaps beneath.

Barge boards on the eaves have gaps created by the junction between the linear board and the irregular texture of the stonework to which it is attached. These present potential roosting opportunities behind the boards themselves as well as allowing access to the wall plate and to potential gaps between the felting and the slate tiles associated with the roof structure. The boards on the south-eastern aspect are generally tighter fitting and well-cobwebbed indicating a lack of recent use by bats, but more open gaps exist on the north-western aspect.

Nesting starlings are confirmed using an access feature on the gable and are assumed to be nesting associated with the wall plate.

The flat-roofed linking component of the building, which attaches the kitchen (described above) with the main two-storey component of the residence, has little potential for use by roosting bats aside from lifted leaf flashing where the flat roof ties in with the adjacent buildings.

3.8 Single-storey Residential - Internal

A loft exists above the pitched-roof kitchen – this was accessed but the size, layout and structure of the roof precluded full inspection.

The roof is built around a timber A-frame construction with wooden purlins and rafters and a square-profile ridge beam. Underfelting above is in good condition throughout but potential access points for bats do occur along the eaves and at the gable. Potential internal roosting opportunities would be restricted to those associated with the roof timbers, or associated with gaps in the gable wall or wall plates along the eaves.

Scattered droppings characteristic of pipistrelle were recorded at the time of survey – a small congregation were identified below an apex timber close to the gable with individual droppings identified elsewhere including upon the loft hatch. A DNA analysis subsequently confirmed this identification (see Appendix 1). The scattered distribution indicates flight within the void, whilst the congregation of droppings closer to the gable indicates roosting associated with the timbers. The number of droppings of varying degrees of freshness indicates roosting by individual or small numbers of bats as a non-breeding summer roost – it is not considered that the number, character

and distribution would be consistent with exploratory behaviour and therefore confirmation of roosting is determined. The evidence is not consistent with a maternity colony; however there are further areas of the loft which could not be accessed safely due to the size and structure of the void and it cannot be ruled out that further roosts occur in these areas. Other evidence of small mammals included mouse and lesser white-toothed shrew droppings.



Photo 07 – showing the south-western and southeastern aspects of the kitchen building with the single-storey link section visible to the left.



Photo 08 – showing the south-western and northwestern (roadside) aspects of the kitchen building



Photo 09 – showing a typical gap associated with a fascia/barge board



Photo 10 – showing the gap in the ridge tile on the south-eastern aspect of the roof



Photo 11 – showing the internal roof void - the location of the confirmed roost is highlighted.

3.9 Summary

The DNA analysis of droppings found within the loft of the kitchen means that the kitchen void is a confirmed roost for common pipistrelle – further surveys to characterise this use would be required but the distribution is consistent with a non-breeding summer roost.

There are a number of further features associated with the buildings which are considered suitable for transitional or non-breeding summer roosts, particularly for common pipistrelle. These include features behind barge/fascia boards along the eaves and gable; beneath lifted lead flashing around the single-storey link section; behind hanging tiles on gable ends; in gaps between roofing felt and slate tiles; in gaps under ridge tiles; in the triangular void beneath the ridge of the roofline in the glasshouse/workshop; between timber elements and stonework; in gaps in the wall where pipework enters; and associated with timber window lintels.

4. Assessment and recommendations (excluding bats)

4.1 **Protected sites**

The proposed development falls just within the boundary of 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 likely attributable impact in these zones is for residential developments of 100, or 50 or more houses outside existing settlement/urban areas. The proposals under consideration are highly unlikely to impact on the SSSI.

4.2 Habitats

The modest extension to the footprints of the buildings are not considered too represent ecological issues aside from potential impacts to bats and nesting birds associated with the existing buildings.

The new porch linking the detached glasshouse/workshop with the kitchen would be over existing hardstanding with minor formal planted elements. The extension of the workshop to the south-west would be over a recently-cleared garden area which does not have trees or woody components associated. Provided care is taken to avoid impacts to adjacent retained habitats and features such as the line of hawthorn trees along the boundary wall, no significant ecological impacts arising from the footprint of the new extensions are identified.

4.3 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 the survey, evidence of nesting birds were identified associated with the sealed triangular void below the ridge in the glasshouse/workshop and in the apex of the gable to the kitchen – these were also reported by the Applicant. Species confirmed included sparrows and starlings. The

current nests are likely to have fledged at the time of determination of the current Application; however second broods may occur and if work was to commence between the months of March and August inclusive, then the site would need to be checked first for nesting birds. If any evidence of breeding activity was found, or nests are identified, then works that would disturb the adults, the nest or young must be postponed until all young have fledged the nest and it is no longer in use.

Following the proposed renovation works, it is unlikely that suitable nesting habitat for these species will remain. It is therefore recommended that mitigation measures to replace lost nesting features are incorporated into the design.

House sparrows nest communally and nest boxes should accommodate this, either through the installation of a single purpose-built nest box comprising several individual chambers with separate entrances, or the installation of 3+ nest boxes in close proximity. These should be mounted on the wall of the house if possible, at a height of at least 3m above the ground with an entrance clear of vegetation/other features which may put them at risk of predation from cats. Boxes can be sourced online, or can be constructed on site using methodology and specifications provided by the RSPB (https://www.rspb.org.uk/get-involved/activities/give-nature-a-home-in-your-garden/garden-activities/createasparrowstreet/)

Starlings require larger nest boxes with entrances suited to their size – these could be mounted on the house or on retained trees in the garden if desired. Boxes can be sourced online, or can be constructed on site using methodology and specifications provided by the RSPB (https://www.rspb.org.uk/get-involved/activities/give-nature-a-home-in-your-garden/garden-activities/createacosystarlinghome/).

5. Assessment and recommendations (bats)

5.1 Survey constraints

The survey was undertaken at an appropriate time of year, during the main summer active season.

Internal inspection for evidence of dropping etc. in the glasshouse/workshop was constrained by the internal condition of the building due to extensive ongoing use and use for storage. Full inspection of the loft void above the kitchen was constrained by the lack of access further from the gable due to the size and structure of the void.

5.2 Further survey requirements

The **detached glasshouse/workshop** of Trevean is considered to provide 'moderate' potential to support bat roosts (see Table 1). This assessment is based on the occurrence of the following features within or immediately adjacent to the site:

- The building has multiple features which would provide suitable roosting habitat for small numbers of crevice dwelling bats – these are likely to be suitable for use as transitional or non-breeding summer roosts with lower likelihood of use for maternity or hibernation roosts.
- There are a number of potential roosting features where evidence of occupation would not be visible during a daytime building inspection – these include the sealed triangular void beneath the ridge; features associated with the wall plate; and cavities which provide access into the stone structure.

The **single-storey residential components** of Trevean are confirmed as providing bat roost associated with the loft above the kitchen, likely to be a non-breeding summer roost. Further features are considered to provide 'moderate' potential to support other roosts (see Table 1). This assessment is based on the evidence confirmed by DNA analysis, and the occurrence of the following features within or immediately adjacent to the site:

- The building has multiple features which would provide suitable roosting habitat for small numbers of crevice dwelling bats – these are likely to be suitable for use as transitional or non-breeding summer roosts with lower likelihood of use for maternity or hibernation roosts.
- There are a number of potential roosting features where evidence of occupation would not be visible during a daytime building inspection – these include features between the roofing felt and the tiles; features associated with the wall plate; and gaps beneath barge/fascia boards and hanging tiles where access to inspect for the presence of droppings was not possible eg. over the single-storey link section.

To characterise the use of the confirmed roost, and confirm whether or not additional roosts are present, further surveys (see section 5.3) would need to be undertaken during the bat active season.

5.3 **Presence or absence surveys**

The Bat Conservation Trust's Bat Survey Guidelines (referred to by Natural England in their advice to planning officers) state that buildings with 'moderate' bat suitability require two survey visits comprising one dusk emergence survey and a separate dawn re-entry survey.

The surveys should take place between May – September in optimum weather conditions, in order to maximise the likelihood of recording bats, with dusk air temperatures exceeding 10° C and not rain or strong wind. Dusk emergence surveys should commence 15 minutes before sunset and continue for 1.5 - 2 hours after sunset. A pre-dawn re-entry survey should commence 1.5 - 2 hours before sunrise and continue until 15 minutes after sunrise.

Sufficient surveyors should be used on each survey so that all relevant aspects of the building can be viewed at one time. 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 the number and species of bats and their activity in a defined area. With due regard to the distribution of potential roosting features; the size and orientation of the buildings; and the scope of potential impacts associated with the proposals, it is identified that **two surveyors** would be required to provide comprehensive visual coverage of the relevant aspects of the buildings.

Characterisation of a confirmed roost, such as is identified in the kitchen loft void, requires expert judgement to determine whether sufficient information has been gathered to understand usage patterns and numbers. It is considered reasonable that the survey effort associated with a moderate potential building may provide this information, however this would need to be reviewed following the completion of the two survey visits and it should be understood that further surveys may be required to characterise use or to support an EPSML.

5.4 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.

The information gained through additional surveys 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 (EPSML), to be considered and issued by Natural England prior to the works commencing.

6. Summary

A **confirmed roost** of common pipistrelle was identified in the loft of the single-storey kitchen building of Trevean – further potential roosting opportunities suitable to support transitional or non-breeding summer roosts for cavity dwelling species such as common and/or soprano pipistrelle were also identified across the buildings. Overall, these further features are considered to have a **moderate potential** to support further roosts.

To characterise the confirmed roost, and to assess whether bats are using other features within the building, two further surveys are initially recommended; one dusk emergence survey and one dawn re-entry survey to be carried out between May and September. Each survey would require two surveyors to be strategically positioned to ensure all potential roosting features which may be affected by the proposals can be observed. Depending on the outcome of the surveys, further survey visits may be required to fully characterise the roost and inform a mitigation strategy which would need to be implemented.

Breeding birds were confirmed nesting at the time of survey. Recommendations are provided relating to timing of works and pre-commencement nesting bird checks, as well as mitigation measures to secure continuity of nesting habitat in the long term.

The modest extension to the footprints of the buildings would be over existing hardstanding, or recently-cleared garden areas which do not have trees or woody components associated. No significant ecological impacts arising from the footprint of the new extensions are identified.

Aside from bats and nesting birds, no other ecological receptors are identified which require consideration to inform the determination of this Planning Application.

7. References

- Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition). The Bat Conservation Trust
- English Nature (EN), (2004., Bat Mitigation Guidelines, English Nature, Peterborough.
- HMSO (1981). The Wildlife and Countryside Act 1981 (as amended). London.
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 London.
- JNCC, (2004). Bat Worker's Manual, JNCC, Peterborough

Appendix 1 – Bat DNA Analysis Results

X	Swift Ecc	ology	FOR LABORATORY USE ONLY				Genetics				
Company	y Isles of Scilly Wildlife Trust		POSITIVE CONTROL SAMPLE		Report date to SEL	COMMENTS					
Date 080620]					
					Author						
	SAMPLES										
SAMPLE	Group	Group Suspected identity of sample	DNA EXTRACT	SPECIES	COMMENTS	qPCR Sequencing					
NUMBER			code	- SPECIES		primers	Ct	primers	match%	bases	
SEL4267-1	C. Bats.	P.pipistrellus	EG-2020-0249	Pipistrellus pipistrellus (Common pipistrelle bat)		Ppipcytb	18				
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