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PRELIMINARY ECOLOGICAL APPRAISAL & PRIMARY BAT ROOST ASSESSMENT OF:

LONGSTONE LODGE
LONGSTONE
ST MARY'S
ISLES OF SCILLY
TR21 0NW

Client: Amy Jenkins

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Contents

Non-Technical Summary

- On 15th July 2019 a Primary Ecological Survey (PEA) and Primary Roost Assessment (PRA) was conducted to inform proposals to develop the roof space of Longstone Lodge into four self-catering units.
- This report outlines the findings of the PEA and PRA assessment and provides advice based upon the surveys' conclusions.
- The PEA found that three species of bat have been recorded within a 2km radius of the site and that eight known bat roosts are found within a 500m radius.
- The site sits within optimal habitat with a woodland and riparian habitat immediately to its east (Higher Moors & Porth Hellick SSSI) with good connectivity to other habitat including Lower Moors SSSI.
- During the PRA an external/ internal inspection of the building was undertaken.
- Evidence of birds was found within the roof space.
- No bat sign was found, although a number of potential features were noted that potentially could roost a small number of crevice dwelling species of bat.
- This PEA and PRA has identified that the roost potential for this development is "moderate" and recommends that two further presence and absence surveys are required; one dusk emergence and a separate dawn re-entry survey. These must be carried out within the bat active season between May and September.
- **This report is not sufficient to accompany 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 Roost Assessment (PRA) of Longstone Lodge, Longstone, St Mary's, TR21 0NW. The survey, carried out on 15th July 2018, was undertaken to inform proposals to develop the roof space of Longstone Lodge into four self-catering units. This report details the results of this PEA and PRA.

1.2 The application site

The Lodge is located in Longstone, St Mary's (National Grid Reference SV91881 11330, Figure 1.). The sites total footprint is approximately 7599 m^2 (red area, see Figure 1). The location of the proposed development within the site is approximately 354 m^2 (yellow area, see Figure 1).

1.3 Details of proposed works

It is proposed to develop the roof space of Longstone Lodge into four self-catering units, including the creation of four dormer windows along the south elevation and three entrance dormers and five velux windows along the north elevation roofs respectively.

Figure 1. Location of Longstone Lodge.

Photo 1. Longstone Lodge (south aspect)

Photo 2. Longstone Lodge (north aspect).

2.0. Methodology

2.1 Preliminary Ecological Appraisal – Desk Study

A desk study data search was carried out. This involved gathering any records from the Local Record Centre (LRC) of bat species and roosts in the area. Citations of statutory designated sites of importance for nature conservation were looked at and whether they are within the Zones of Influence (ZOI) of the survey area (considered to be 2km in this case). Surrounding habitats were also identified and the connectivity of habitat was assessed through the use of aerial photography.

2.2 Preliminary Bat Roost Assessment

The Preliminary Roost Assessment comprised of a detailed search of the building both external and internal, looking for bats, bat sign and also for features that could be potentially used by bats. Also an assessment of the surrounding habitat and its suitability for commuting and foraging bats was undertaken.

The survey was carried out from ground level looking for bats and/or evidence of bats including grease and scratch marks, droppings (on walls, surfaces as well as on the rooves), staining at potential roost exit holes, live or dead bats and features. Features might include raised or missing tiles, a gap in the mortar, overhanging tiles or gaps behind fascia boards; any small space potentially suitable for use by roosting bats. A ladder, binoculars and a high powered torch were used when required.

2.3 Classification of building's bat roost potential

The classification of the buildings suitability for use by roosting bats was dependent on a number of factors including:

- Bats and/or bat sign
- Features potentially suitable for use by roosting bats, these may include gaps in mortar and behind fascia boards.
- Night light levels
- Disturbance levels
- Setting
- Proximity to suitable foraging habitat and commuting routes.

The categories used to classify the buildings and the survey effort needed to determine the presence or absence of bats is taken from the Bat Conservation Trust's Good Survey Guidelines[1] and are described in Table 1.

2.4 Surveyor details

The survey was undertaken by Darren Hart (BSc) and Darren Mason (BSc) who have both undertaken professional Bat Licence training to permit them to undertake professional surveys. They are currently gathering sufficient 'working hours' to achieve a Natural England Class 1 Licence.

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

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

3.1 Preliminary Ecological Appraisal (PEA)

3.1.1 Pre-existing information on bat species

The desk study showed that no bat species have previously been recorded within the Lodge building itself as the building is a new build, built winter 2017/18. However, Longstone Café which is attached to the western aspect of the Lodge is a known bat roost. A data search of LRC records revealed a number of bats recorded within 2km of the site. The 3 species identified were Common Pipistrelle (*Pipistrellus pipistrellus*), Soprano Pipistrelle *(Pipistrellus pygmaeous*) a UK Biodiversity Action Plan (BAP) priority species and the rare Nathusius Pipistrelle (Pipistrellus nathusii).

Several bat roosts are known to exist within the 2km of the proposed development, with 8 known roosts within 500m of the property.

3.1.2 Statutory and non-statutory sites

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

I. **Higher Moors & Porth hellick Pool** – Only approximately 130m south east of the site. Higher Moors and Porth Hellick Pool is a topogenous mire that has a range of wetland habitats, but, is designated primarily for several rare and notable plant species including; Bog pimpernel (*Anagallis tenella*), Star Sedge (*Carex echinata*) and Marsh St John's-wort (*Hypericum elodes*).

II. **Penninis Head SSSI** – Lying approximately 1636m south west. The SSSI designation is primarily for its maritime heathland, maritime grassland and scrub habitats together with populations of a number of rare plant and lichen species, in addition to its significant quaternary geomorphology.

III. **Watermill Cove SSSI** – Located approximately 1039m north east, Watermill Cove SSSI is designated for its cliff exposures of Quaternary sediments that clearly show the sequence of changes in the climate and environment during the Quarternary period.

IV. **Porthloo SSSI –** Situated approximately 978m west, Porthloo is designated for its geology, particularly for the Quaternary sediments in the cliffs that show changes in the climates and environments of the Quaternary period.

V. **Lower Moors SSSI** – Located approximately 803m south west, this topogenous mire has a range of wetland habitats supporting a diverse range of wetland wildflower species, including the Nationally Scarce Tubular Water-dropwort (*Oenanthe fistulosa*). The site also holds locally important populations of Royal Fern (*Osmunda reglis*) and Southern Marsh Orchid (*Dactylhoriza praetermissa*) and is particularly important feeding for passage and wintering birds including Corncrake (*Crex crex*) and Spotted Crake (*Porzana porzana*).

3.1.3 Habitats surrounding the application site

Longstone Lodge is situated in Longstone, a small community with approximately 6 dwellings found roughly in the centre of the island of St Mary's. Longstone is a low lying sheltered area, containing mature trees, hedgerows and small fields, providing suitable edge habitat that connects these habitats together. It has been shown that bats are more active in sheltered areas of habitat than exposed areas[2,7,8].

Immediately to the north are two fields of open pasture with associated hedgerows, beyond these are further small cultivated fields and pasture all bounded by mature hedgerows. To the north east (220m) is Holy Vale a small community which is itself surrounded by mature gardens and hedgerows as well as mature trees that appears to have grown from field boundaries. Due north west (93m) there is a mature stand of pine trees (*Pinus sp.*) acting as a shelter belt that extends further north (435m) until it reaches the road. South west there is good connectivity of habitat, a mixture of pine plantation, mature gardens and hedgerows, from the Lodge all the way to Lower Moors SSSI a riparian habitat with a mixture of fen, willow carr, ponds and salt marsh. To the south west (280m) is Carreg Dhu gardens, a private collection of mature trees and shrubs. There is good mature hedgerow connectivity between Longstone and these habitats. It has been shown that bats use tree lines and hedgerows for both commuting and foraging and that Pipistrelles have a preference for foraging along tree lines[5,6,7,8].

To the east (50m) there is a medium sized copse of woodland mature Elm and willow part of which belongs to the Higher Moors & Porth Hellick Pool SSSI. The northern part of this site is dominated by mature elms (*Ulmus sp.*). These are growing out of old field boundaries with the surrounding small fields being very wet. Moving south along the site the elms are replaced by willows (Salix sp.). This riparian habitat has been created by the small stream that runs from Holy Vale through the site to Porth Hellick pool. Soprano pipistrelle (*Pipistrellus pygmaeus*) are known to preferentially forage in riparian habitats, over water and in adjacent riparian woodland[2,3,4,5]. Common pipistrelle

(*Pipistrellus pipistrellus*), however, has been recorded foraging over a wider range of habitats, including rivers, lakes, woodland and cattle pasture[2,3,4,5]. Longstone and the surrounding area is therefore considered to have optimal foraging habitat for bats.

3.1.4 Habitats within the application site

There is a communal garden in front of the southern aspect that runs the full length of the Lodge, with a clipped hedge, also running the full length of the garden, providing shelter from the track on the other side (see photo 3). The hedge comprises species including Escallonia *(Escallonia macrantha),* Olearia spp, Hebe spp and Tree Bedstraw *(Caprosma repens)*. There is a very wide variety of flowering plants within the flower beds including, Buddleia *(Buddleja spp)*, Lupin *(Lupinus spp)*, Poppy spp, Cat's ear (*Hypochaeris radicata*), Red-hot-poker *(Kniphofia uvaria),* Viburnum spp, Argentinian vervain *(Verbena bonariensis)*, Tree echium (*Echium pininana*), Red Valerian (*Centranthus ruber*) and a multitude of species of the Asteracea (Daisy) family.

Photo 3. Communal garden on the southern side.

On the eastern aspect there's a small private lawn garden with a clipped hedge around the perimeter.

At the back of the Lodge on the northern aspect there is a second communal area that is comprised of a gravel seating area, a slopped lawn and flower beds. The flower beds contain species including Red campion (*Silene dioica)*, Poppy spp, Viburnum spp, Buddleia spp as well as species of the Asteracae (daisy) family. There are also areas, mainly to the periphery, of Bracken *(Pteridium)*, Bramble (*Rubus fruticosus*), Common gorse *(Ulex europaeus)* and Foxglove *(Digitalis purpurea)*.

Towards the north of the site there are areas where free range chickens are kept as well as vegetable beds and poly tunnels. East of the Café and Lodge there is a medium sized recreational field and a small play park. In summary, the habitat within the footprint of the Lodge provides many species of nectar producing flowers that will attract a variety of invertebrates which bats can feed on, as all bats in the UK are insectivorous[6].

3.2 Primary Roost Assessment (PRA)

3.2.1 External

Longstone Lodge is a single storey timber frame building with a simple gable roof with a pitch of 20^0. The building is finished with hit and miss rough sawn timber cladding. The roof is finished with corrugated metal sheets, ridge capping and bargeboard flashing all finished with a coat of polyester paint (see photos 1 & 2). The downpipes and guttering are all plastic and the windows and doors are UPVc. On the eastern aspect there is a timber porch with a mono-pitched roof and UPVc windows and door. The building has a number of features potentially suitable for roosting bats, including:

- At the north-west corner the hit and miss timber has left gaps and access into the roof space from below (see photo 4).
- There are gaps under the lead flashing where the porch roof ties into the main building on the east elevation, on both sides of the porch north and south (see photos 5 & 6).
- A small gap at the south east corner at the top of the timber towards the roof (see photo 7).
- At the south west corner there's a gap into the roof space where the barge flashing fits over the roofing sheets (see photo 8).
- There are voids created by the hit and miss timber on the western aspect that are accessible from below (see photo 9).

On the eastern aspect of the Lodge is the café, a single storey building with an m-shaped roof one half of the roof (south) is finished with roof felt and timber batons, the other with corrugated roof sheeting (north). The café appears to have been built in stages as one part of the build is partly constructed of breeze block with a white render (north) finish and the other is partly timber framed and timber clad (south). The cafe is not part of the development but has historically had bats roosting in the north western corner.

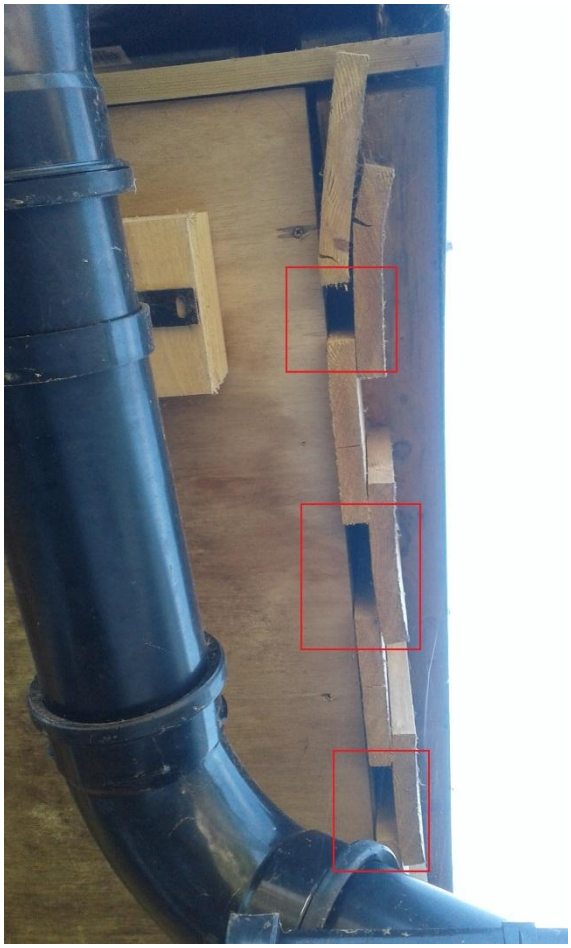

Photo 4. North west corner

Photo 5. Porch on east aspect

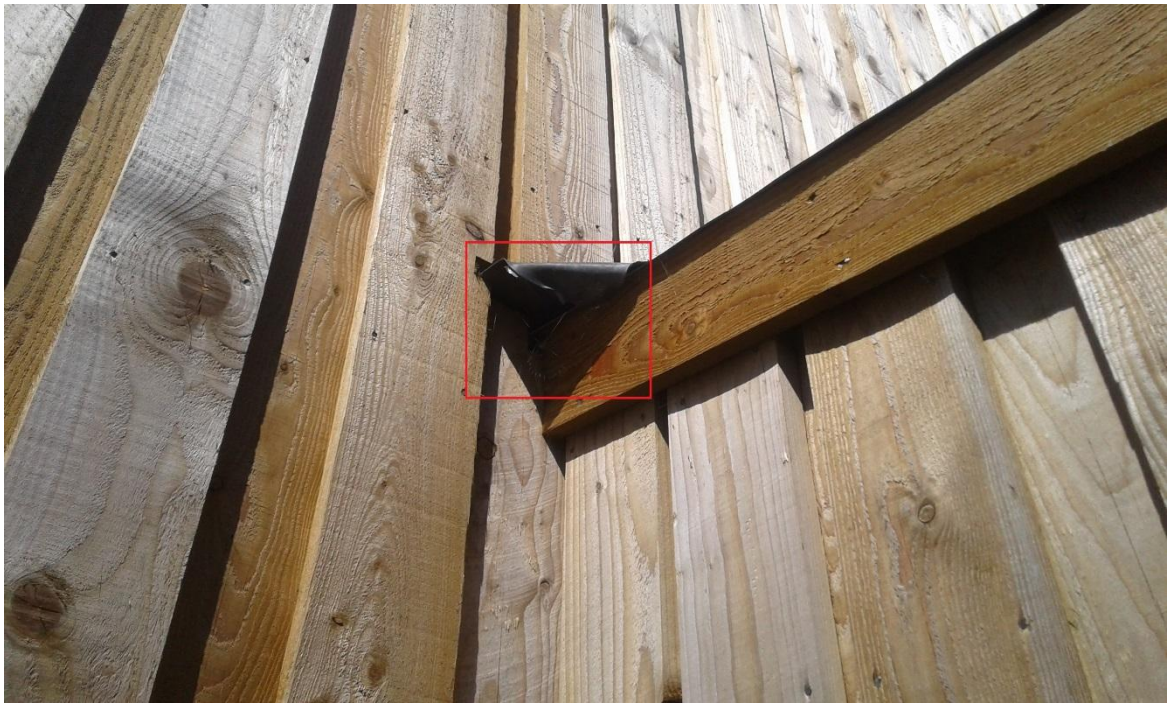

Photo 6. Porch on east aspect aspect – gap under lead flashing.

Photo 7. South east corner – gap at the top of timber.

Photo 8. South west corner – void created where the barge flashing fits over the roofing sheet.

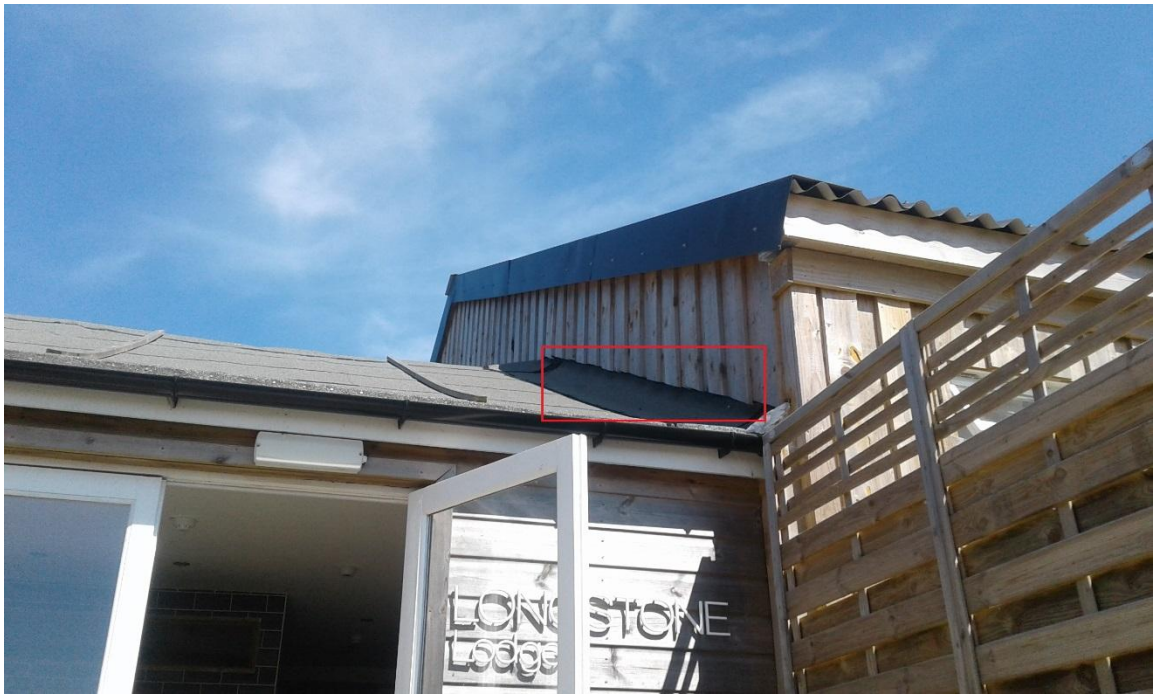

Photo 9. The hit and miss timber arrangement creates voids with access below.

3.2.2 Internal

The loft space of the Lodge runs the entire length of the building (see photo 10). It is almost one entire open space, apart from at the eastern end where there's a partially boarded-off section. The timber roof is a variation of a Queen post roof, with collar beams and queen posts which the purlins sit behind. The roof is lined with a breathable roof membrane which is in good condition. The loft

is part boarded and works seem to be ongoing to board the entire space. The loft is insulated between the tie beams. Inspection of the top of the boxes, the floor, insulation and materials in the loft space revealed no evidence of bat droppings. Inspection of the loft did reveal evidence of bird droppings (see photo 11). There weren't many cobwebs, this may well be due to the fact that it is presently being utilised as a working area.

With the lights off there was natural light entering the loft space from under the eaves from both the north and the south aspects (see photo 12). This could permit the access of bats and birds into the loft space. The entire loft space was searched and no signs of bats were found including no grease and scratch marks or droppings.

Photo 10. The loft space.

Photo 11. Bird dropping in loft.

Photo 12. Natural light entering loft space.

4.0 Assessment and recommendations

4.1 Protected Sites

The proposed development falls into the SSSI Impact zones of Higher Moors & Porth Hellick Pool, Lower Moors and Peninnis Head. Impact zones are used in the assessment of planning applications for the likely impacts on SSSI's, Special Areas of Conservation (SAC), Special Protected Areas (SPA) and Ramsar sites (England). However, this development and its scale is not likely to impact on the surrounding SSSIs; the zones are important for large-scale residential developments.

4.2 Nesting Birds

All wild birds are protected under the Wildlife & Countryside Act 1981 (as amended). Section 1 of this Act makes it an offence to kill, injure or take away 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 bird dropping were found internally, therefore it is likely that the site hosts birds (see photo 11). To check that the site is not being used by breeding birds a thorough search of the structure should be made prior to the start of any demolition works taking place during the

breeding season (March 1st to August 31st). If breeding birds 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.

5.0 Assessment and recommendations - bats

5.1 Survey constraints

The survey was undertaken at a suitable time of year for carrying out preliminary roost assessments and all areas were adequately accessible to be searched.

5.2 Further Survey requirements

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

- A few features potentially suitable for use by roosting bats.
- Optimal foraging habitat nearby.
- Longstone being a low lying area, provides sheltered conditions for bats[2].
- 8 known roost sites are within a 500m radius suggesting that the surrounding area is appropriate and favoured by bats.
- Longstone Café being a known bat roost.

To confirm whether or not bats use the structure further surveys would need to be carried out during the bats active season (see section 5.3).

5.3 Presence or absence surveys

The Bat Conservation Trust's Bat Survey Guidelines[1] (referred to by Natural England in their advice to planning officers) states 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, these two visits should be spaced at least two weeks apart.

The surveys should be undertaken in optimum weather conditions, so that to maximise the likelihood of recording bats, with dusk air temperatures exceeding 10^0C and no rain or strong wind.

Dusk emergence surveys should start 15 minutes before sunset and finish 1.5-2 hours after sunset. Dawn re-entry surveys should start 1.5-2 hours before sunrise and end 15 minutes after sunrise.

Sufficient surveyors should be used on each survey so that all aspects of the building can be viewed at one time, therefore the building would need two surveyors. Surveyors should be no more than 50m away from the structure with an awareness of the likely exit/entry points and potential roost locations. Each bat surveyor should be equipped with a bat detector and recording equipment and should count the bats in a defined area.

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

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.

If a roost is 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 surroundings are important. The information gained would allow an accurate assessment of the potential impacts of the development on the 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 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 of 2km from the site should be applied.

6.0 Summary

Longstone Lodge has several features that potentially could roost a small number of crevice dwelling bats. Longstone itself affords natural shelter for bats with optimal foraging habitat including numerous tree lines, riparian habitat and good connectivity to outlying habitat which includes three SSSI's.

To assess whether bats roost in the structure, two surveys are required; one dusk emergence and one separate dawn re-entry survey should be carried out between mid-May and mid-September. If bats are found in the structure, the status of the roost(s) will then need to be identified. Further surveys would then be required to inform a mitigation strategy which would need to be implemented.

Other than bats, the building is likely to host birds in the breeding season and this will need to be considered in any mitigation strategy.

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