

**RESULTS OF FURTHER BAT SURVEYS OF A BARN AT  
TRETHERWEY FARM, RUMFORD, PADSTOW**

**May / July 2022**



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## RESULTS OF FURTHER BAT SURVEYS OF A BARN AT TRETHERWEY FARM, RUMFORD, PADSTOW

**O.S. Grid Ref:** SW 9036 7217

**Survey date:** Bat and Barn Owl survey: 26<sup>th</sup> May 2022  
Emergence survey: 5<sup>th</sup> July 2022

**Surveyors:** Katherine Hampton BSc (Hons) QCIEEM  
Robin Curtis BSc (Hons) MSc PhD  
Gemma Patten  
Craig Finch BA (Hons)

**Time spent on site:** Bat and Barn Owl survey: 1 hour  
Emergence survey: 1.5 hours

**Taxonomic groups:** Bats  
Barn Owls

**Report author:** Katherine Hampton BSc (Hons) QCIEEM


**Report completed:** 6<sup>th</sup> September 2022

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**Report for:** C/O: Dan Mitchell, Influence Planning.

**Report No:** 21-102\_Further\_Bats\_Trethewey\_Farm\_Barn

**Document approved by:** Adrian Spalding PhD Director

**Signature:** 

**Date:** 6<sup>th</sup> September 2022

## 1. INTRODUCTION

Spalding Associates (Environmental) Ltd were instructed by Dan Mitchell of Influence Planning to carry out a Bat and Barn Owl survey on behalf of the client of a barn located at Trethewey Farm, Rumford, Padstow. This was completed in May 2022 during which time features with the potential to be used by roosting bats were highlighted and a further emergence survey was recommended. This was carried out in July 2022 during the peak bat activity season and the results of all surveys are included within this report.

## 2. DESCRIPTION OF BUILDING

The building surveyed is a large two-storey barn approximately 14m x 8m. It is composed of breeze block on both gable ends, and the southern aspect, and a mixture of wood and breezeblock on the northern aspect. The southern aspect lies closely along a hedgebank which is well vegetated. The top storey is an open mezzanine floor which extends almost the entire length. The barn is orientated approximately east-west and is divided into 4 rooms on the lower level.

The roof of the barn is corrugated mixed asbestos sheeting which is folded over the gable ends creating fascia-like coverings. Metal corrugated sheeting covers the top half of both gable ends, attached underneath the folded over asbestos sheeting here. The lower half is exposed breeze block. The ridge tiles are also asbestos mixed and continuous along the length of the roof. There is a large window within the western gable end which is missing areas of glass. Bramble is growing up the wall here and the eastern gable end is close to a hedgerow of planted trees. The top half of the northern aspect to the floor of the mezzanine is lined with a bare wooden frame which is open throughout.



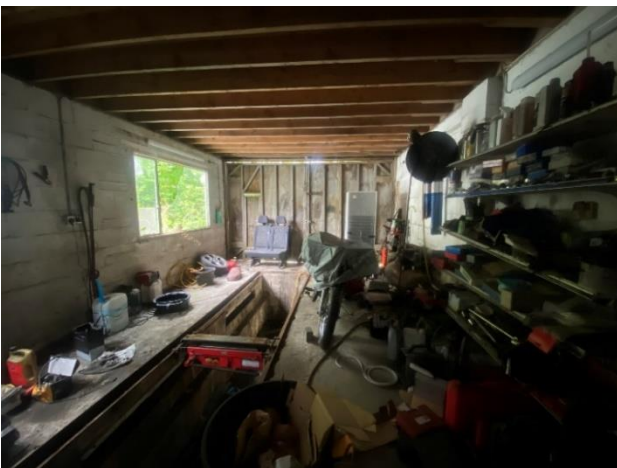
**Figure 1: The southern aspect and western end (left) and the northern aspect of the building behind a hedgebank (right).**

Internally the building is relatively open to the eastern end. This end consists of a large room open to the roof which contains stairs providing access to the mezzanine floor continuing westward. The room is used for storage and oil/fuel has been spilled on the floor. There are

no doors present providing open access. Along the mezzanine floor the bare frame allows light and weather to enter here. This floor is also used for storage and is relatively cluttered.

Within the centre of the building is a small dark room used as a mechanics storeroom and as such is very full of tools and oily. This is accessed through wooden doors loosely fitted on the northern aspect and is segregated along the southern end, leading into a small office which takes up the remaining space. There is a large window within the office.

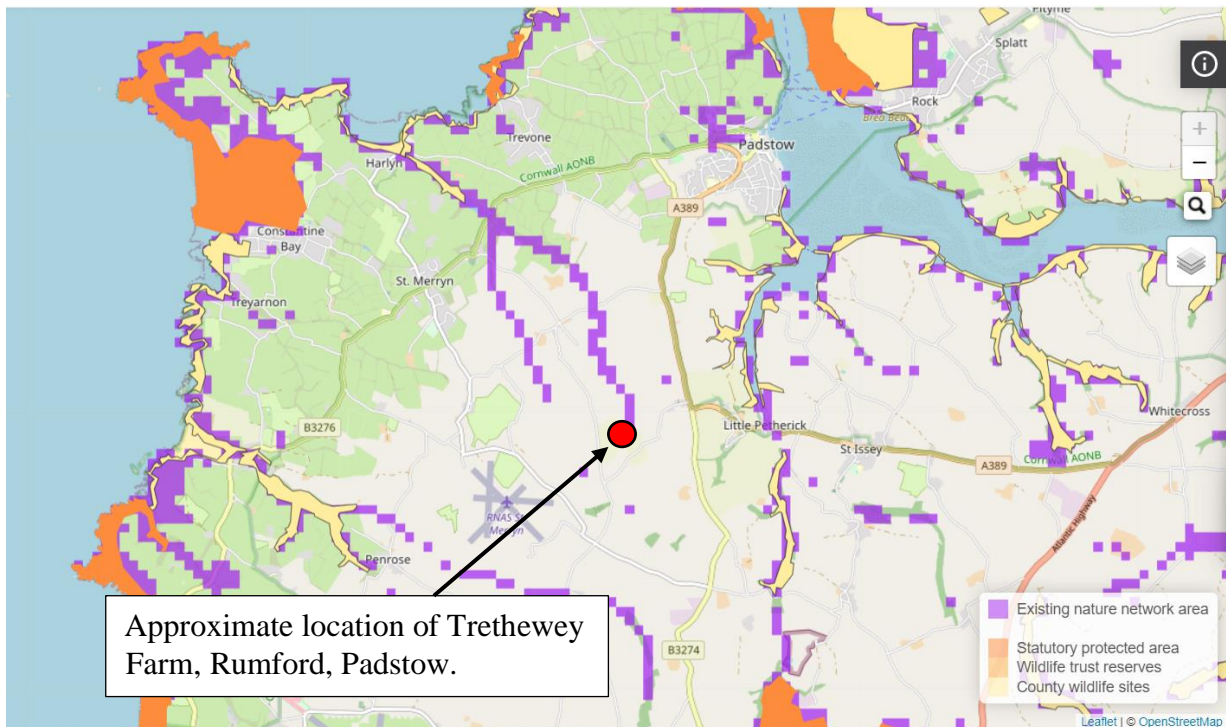
The remaining room to the west is larger and open and used as a mechanics garage with an inspection pit in the centre. This room is also well cluttered and oily and receives high light levels from the large window in the western end.



**Figure 2: Top level - The open room to the east and an example of the mezzanine floor.  
Middle level – The middle room used for storage and the office to the rear of this.  
Lower level – mechanic garage to the west of the building.**

## 2.1. Surrounding Landscape

The barn is located adjacent to a tributary leading towards Harlyn on the north coast of Cornwall. This is well vegetated throughout the length and provides foraging and commuting potential for bats. The surrounding area is composed of open farmland, which is lined by well vegetated hedgebanks, providing further corridors and foraging opportunities for bats across the landscape. Little Petherick Creek runs approximately 1.5km to the east of the site which provides a corridor through the landscape south and west (Figure 1).



**Figure 3: Existing nature networks surrounding the barn at Trethewey Farm, Rumford, Cornwall. (Source Lagas Nature Network Maps: 2022, [www.lagas.co.uk/app/product/nature-network](http://www.lagas.co.uk/app/product/nature-network)).**

## 3. METHODS

### 3.1. Visual survey

#### 3.1.1. Bats

With the aid of a high-power torch the building was carefully searched internally and externally, where access allowed, for bats or any signs of bat presence, past or present. This included searching for droppings, feeding remains and individuals as well as searching for potential entry points, polishing, or scratching of woodwork (indicating use by bats) and for cavities capable of providing roosting space for bats.

All surfaces were examined where accessible, internally, and externally, as well as ledges, hanging tiles and other protruding features for bat droppings and feeding evidence. Any cavities present and open areas were searched with a torch, for roosting bats, as were any

cavities present along the wall tops, between the roof timbers and walls and around any openings.

As bats can leave little evidence of their occupation, this survey included an assessment of the potential of the building and features of the building to support roosting bats.

The survey was carried out on 26<sup>th</sup> May 2022 and the weather was overcast but mild with a temperature of 12°C.

### **3.1.2. Barn Owls**

With the aid of a torch any access points which could admit Barn Owls into the building were searched for and any ledges present within the buildings which were thought to have the potential to be used by nesting or roosting Barn Owls were searched for owl pellets, feathers, and nest debris, as were the floors and beneath crossing timbers.

### **3.1.3. Swallows and other birds**

Suitable ledges and spaces which could provide nesting space for Swallows and other birds were inspected for evidence of previous or current nest building attempts.

## **3.2. Emergence survey**

Emergence surveys aim to establish if the building being surveyed is used by day roosting bats and if so to establish the levels of use, confirm the species present, identify the number of individuals present and identify the access points. In this instance a single emergence survey using three trained surveyors was carried out. An emergence survey involves positioning surveyors, experienced with the use of bat detectors, around the outside of a building identified as having the potential to support roosting bats. These surveyors watch the roof line, openings or features identified as having the potential to support roosting bats from a quarter of an hour before sunset until at least one hour afterwards.

On 5<sup>th</sup> July 2022 Robin Curtis, Craig Finch and Gemma Patten were positioned around the outside of the building. The survey began at 21:15 and finished at 22:45 with sunset at 21:33. The weather was 70% cloud but still and clear in places with a starting temperature of 11°C.

## **3.3. Remote detector survey**

A remote monitoring device survey involves installing a remote detector into the building and leaving it in place for a pre-determined period, in this instance for 9 consecutive nights. During this time the device will log all the calls emitted by bats that pass within its range. This device allows the surveyor to assess the levels of use of the building by bats and the species of bats using the structure over the course of the installation. In this instance, an Anabat Express was installed into the building between 5<sup>th</sup> to the 13<sup>th</sup> July 2022 and was fully operational throughout its deployment.

### 3.4. Methodology for assigning value

Evaluation of the ecological value of the site for bats was undertaken following the framework provided by CIEEM (2018). The biodiversity value of ecological features is assessed according to various characteristics; including non-statutory designations, rarity, threat, diversity (species-richness), connectivity and size of populations. Each ecological feature is assigned a biodiversity value at the following geographical scale:

- International or European
- National (England)
- Regional (South West)
- County
- Local

Impact assessment and mitigation follows the guidance provided by CIEEM (2018) and the ‘Bat Mitigation Guidelines’ (Mitchell-Jones, 2004).

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 UK), as well as the type of roost (based on the results of the emergence/ re-entry and static detector surveys as applicable). 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).

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

Rarity	Species
Common	Common Pipistrelle ( <i>Pipistrellus pipistrellus</i> ) Soprano Pipistrelle ( <i>Pipistrellus pygmaeus</i> ) Brown Long-Eared ( <i>Plecotus auritus</i> )
Rarer	Lesser Horseshoe ( <i>Rhinolophus hipposideros</i> ) Whiskered ( <i>Myotis mystacinus</i> ) Brandt’s ( <i>Myotis brandtii</i> ) Daubenton’s ( <i>Myotis daubentonii</i> ) Natterer’s ( <i>Myotis nattereri</i> ) Leisler’s ( <i>Nyctalus leisleri</i> ) Noctule ( <i>Nyctalus noctula</i> ) Nathusius’ pipistrelle ( <i>Pipistrellus nathusii</i> ) Serotine ( <i>Eptesicus serotinus</i> )
Rarest	Greater Horseshoe ( <i>Rhinolophus ferrumequinum</i> ) Bechstein’s ( <i>Myotis bechsteinii</i> ) Alcathoe ( <i>Myotis alcathoe</i> ) Greater Mouse-Eared ( <i>Myotis myotis</i> ) Barbastelle ( <i>Barbastella barbastellus</i> )

	Grey Long-Eared ( <i>Plecotus austriacus</i> )
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**Table 2: Value of bat roosts (adapted from Wray *et al.* 2010)**

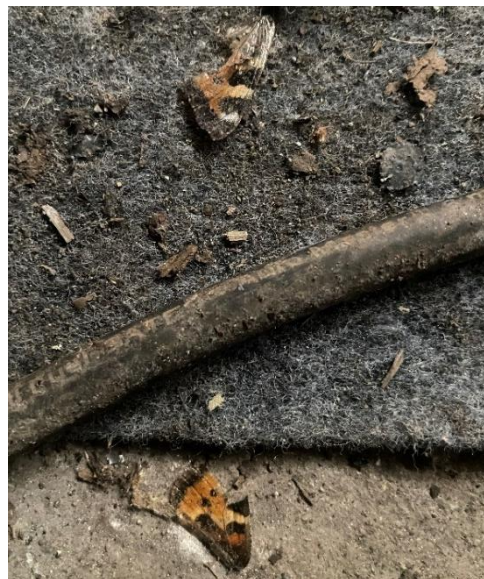
Value	Roost types
District, local or parish	Feeding perches (common species) Individual bats (common species) Small numbers of non-breeding bats (common species) Mating sites (common species)
County	Maternity sites (common species) Small numbers of hibernating bats (common and rarer species) Feeding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

## 4. RESULTS

### 4.1. Visual survey

#### 4.1.1. Bats

No bat droppings were seen, however, approximately 10 Lepidoptera wings were discovered within the middle room used for storage indicating that it may be used as a night roost by bat species. This room is also the darkest room, with limited light spill from the office window to the south.



**Figure 4:**  
 Evidence of foraging thought to be from rodents within the middle room



Where the metal corrugated sheeting ends on the west end of the building, the joists for the mezzanine floor are visible. As such, the sheeting is slightly stepped away from the wall. There are gaps here giving access behind the sheeting and up the side of the building which bats could use. On the eastern end the sheeting is sitting to the wall, however, the gaps between the corrugations on the sheet provide gaps for bats. There are also several gaps underneath the roofing sheets and continuous ridge tile.



**Figure 5: Gaps leading to the mezzanine floor and up behind the corrugated sheeting (left), and gaps underneath the roofing sheets and ridge tiles (right).**

Within the western garage room there are gaps along the wall tops on the southern side which lead into a cavity wall. These may provide suitable areas for bats to roost; however, the room receives high levels of daylight and is open.



**Figure 6: An example of the gaps at the wall top in the western room providing access to a cavity wall.**

#### 4.1.2. Barn Owls

No evidence of the use or occupation of this building by Barn Owls was found. There is potential for Barn Owl to use the open eastern room and on the mezzanine floor.

#### 4.1.3. Swallows and other bird species

Two bird nests were recorded within the building. One Barn Swallow nest on the western end of the mezzanine floor and one Wren nest which was within the rafters of the western garage room. Both nests were disused.



**Figure 7: Old Wren nest within the western garage room (left) and Barn Swallow nest on the mezzanine level (right).**

#### 4.2. Emergence survey

No bats were recorded emerging from the building during the emergence survey.

#### 4.3. Remote detector survey

A total of 109 calls from Brown Long-eared bats were recorded in the middle room.

**Table 3. Remote detector data summary for Trethewey Bat Data, 5<sup>th</sup> – 13<sup>th</sup> July 2022.**

Date	Species	Number of calls	Time of first call	Time of last call
05/07/22	Brown Long-eared	8	23:30	01:07
06/07/22	Brown Long-eared	6	21:29	01:21
07/07/22	Brown Long-eared	12	21:58	23:44
08/07/22	Brown Long-eared	6	21:49	22:35
09/07/22	Brown Long-eared	14	22:24	00:06
10/07/22	Brown Long-eared	15	20:59	01:59
11/07/22	Brown Long-eared	26	21:41	02:10
12/07/22	Brown Long-eared	15	21:03	02:46
13/07/22	Brown Long-eared	7	22:29	00:50

#### 4.4. Summary of survey results

The remote detector survey indicates that the central room of the building is used as a regular night roost and feeding perch for Brown Long-eared bats.

#### 4.6. Status of the roost

Through evaluation of the number and nature of bats using the building and their conservation status (following the guidance given in CIEEM, 2006 and the Bat Mitigation Guidelines as detailed in section 3.7), the barn has the following value:

- Local value for Brown Long-eared bats (individual bats of a common species)

Where a building supports multiple roosts, the highest value is assigned. **The barn at Tretthewey is therefore of Local value for the conservation of bats.** Without mitigation the proposed works could lead to the permanent loss of the above roosts and potential injury or death to bats.

### 5. PROPOSAL, POTENTIAL IMPACTS AND MITIGATION

#### 5.1. Proposal

The proposal is to convert the building into a dwelling.

#### 5.2. Potential impacts on bats

Without mitigation the proposed works could lead to the permanent loss of the following bat roosts which have collectively been assessed as having Local value for bat conservation.

- Night roosting Brown Long-eared bats
- Feeding perch of Brown Long-eared bats

Without mitigation the proposed works have the potential to cause the following impacts:

- accidental death or injury to bats,
- disturbance of bats
- degradation of the roost due to inappropriate membrane installation (breathable membranes are detrimental to bats).
- Potential loss of the roosts due to blocking of bat access points.

#### 5.3. Proposed mitigation - bats

The aim of the mitigation should be to minimise the potential impacts of the works on the bats and ensure that adequate and appropriate roosting provisions are provided following the completion of the works. The proposed mitigation should be available to bats before works commence to the building, or temporary mitigation provided.

**The proposed works will be subject to an ecological watching brief following a detailed method statement.** Full details of the mitigation will be set out below. Disturbance should avoid the winter hibernation period mid-November to mid-March and will need to be completed under an ecological watching brief by a licenced bat ecologist.

### 5.3.1. Replacement night roost/feeding perch for Brown Long-eared bats

The small, dark central room is used as a night feeding perch by Brown Long-eared bats and will be lost during the development of the building. A replacement of this roost should be erected to fulfil this ecological function. This can be provided through one of the following:

- Provide a replacement within an existing building: If there is scope to provide a replacement night/feeding perch within an adjacent building this could be accomplished by providing an area of 25m<sup>2</sup> with the height from the floor to the apex measuring at least 3m. This should be kept within darkness and so not internally or externally lit at night.
- Replacement building: Build and provide a new standalone building within the grounds of the property suitable for Brown Long-eared feeding/night perch. The building could be comprised of wood throughout and have a large opening on one elevation or can be developed to be three sided. The roof can be pitched or mono-pitch and can consist of corrugated sheeting. The underside of the roof should consist of untreated rough timber battens which bats can hang upon. The external roof covering is not critical as it is not intended for day roosting bats. As such, the feeding perch may have an alternative day time function such as a mower or log store of required. It will not be fitted with or near to any internal or external lighting.
- Replacement lean-to: Build a lean-to style building onto the current building which provides a space for Brown Long-eared feeding/night roost similar in construction to the replacement building listed above.

To encourage the bats to utilise the new space, it would be beneficial to remove some of the ceiling beams if possible and place them within the new roost space.

### 5.3.1. Enhancements for crevice dwelling bats

Suitable roosting areas could be installed onto the externals of the new dwelling by providing purpose-built bat boxes. These can be mounted to provide a range of different aspects and therefore a range of roosting conditions. We recommend Schwegler, if available, as these are the most durable. There are other durable products on the market but if alternatives are to be used then these should be appraised by a qualified bat expert to ensure their suitability. Please note that durable bat boxes are heavy and will need secure fixings (see below for some examples).



Vivaro Pro Woodstone bat box



2F Schwegler box



Schwegler 1WQ

#### **5.4. Barn Owls**

No evidence of the use of the barn by Barn Owls was discovered and therefore no mitigation is necessary.

#### **5.5. Swallows and other bird species**

A Barn Swallow and Wren nest were discovered during the visual survey. These were within the western garage room and on the mezzanine floor against the wall. Both were empty suggesting they were from previous years.

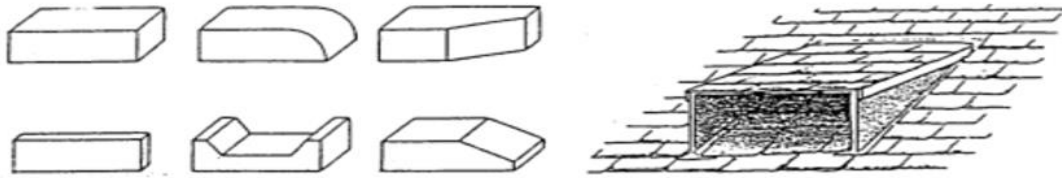
When the proposed works commence, care should be taken to ensure birds are not nesting in the buildings. A careful inspection of the buildings for nesting birds should be carried out prior to works commencing to ensure no nesting birds are present. If nesting birds are found to be present, works should wait until the chicks have left the nest. This is because birds are protected by law whilst nesting.

Opportunities for nesting birds could be incorporated into the designs for the proposed dwelling. The inclusion of deep overhanging eaves would encourage Swallows or House Martins to build natural nests, and nest boxes for other species could be provided for cavity nesters.

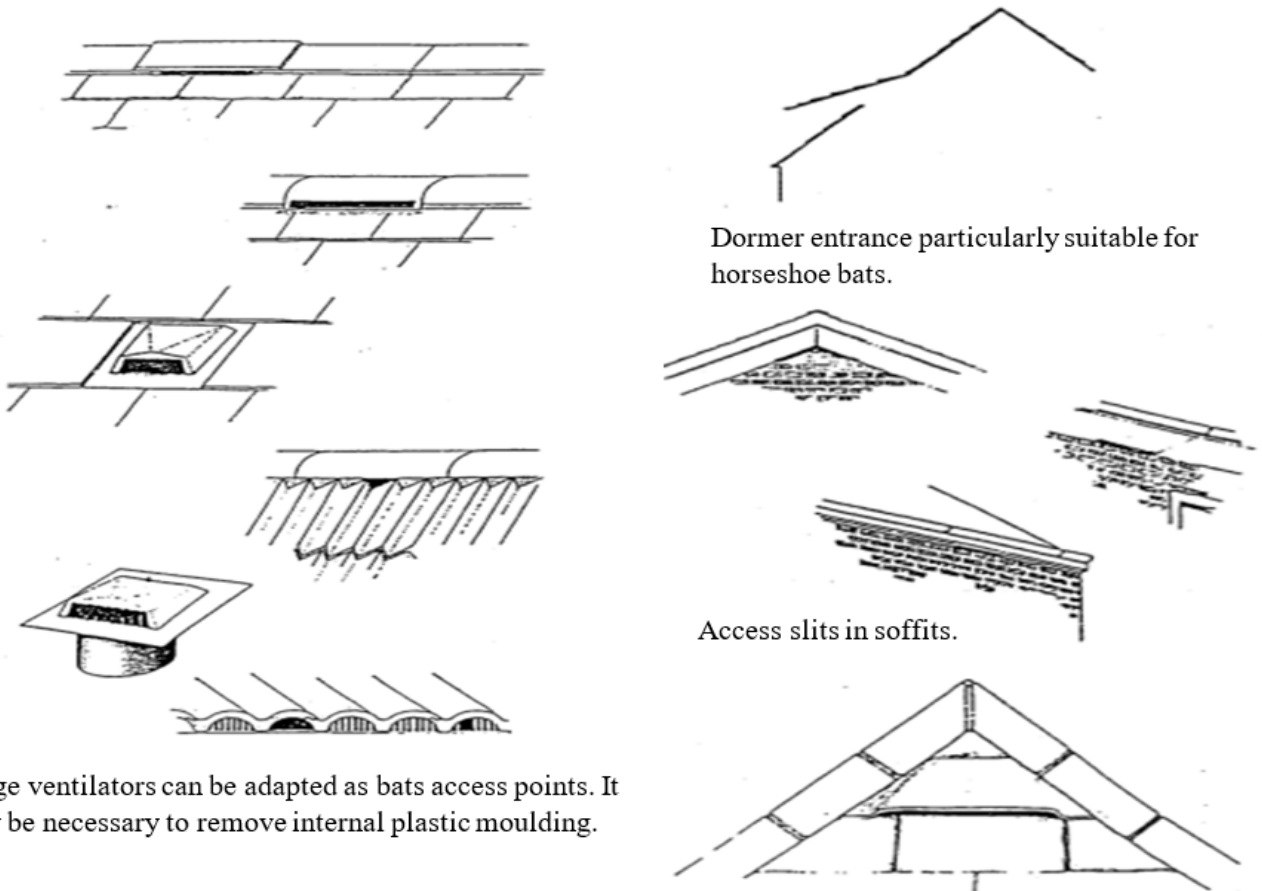
## PROVIDING ACCESS FOR BATS

For most species of bat only small holes or slots are needed and this helps to prevent birds from getting in. A Gap of 20mm wide by 50mm long is often adequate. The ideal position is between the soffit and the wall. Unlike birds, bats can land on vertical wall and crawl up through the gap to their roost behind the soffit or in the roof. A rough surface is essential for the bats to grip on.

Building regulations specify that roofs must have adequate ventilation. This is usually provided at the eaves and so access for bats can be easily incorporated at the same time. Other suitable places for access points are at gable ends, under lead flashing or gaps between tiles or slates. Horseshoe bats have more specialised requirements, preferring to fly directly into their roosts. Access openings need to be large enough to allow the bats to fly into the roof.



**Walling bricks for creating bat access points. A standard brick is shown top left**



Dormer entrance particularly suitable for horseshoe bats.

Access slits in soffits.

Ridge ventilators can be adapted as bats access points. It may be necessary to remove internal plastic moulding.

Lead saddle in place of a slate to allow bats access to ridge or roof void.

## 6. LEGISLATION

### 6.1. Bats

Bats in England have been protected under a number of regulations and amendments but the most up to-date and relevant are:

- The Conservation of Habitats and Species Regulations 2017
- Wildlife and Countryside Act 1981 (Section 9)

The result of Regulations and Acts is that all species of bat and their breeding sites or resting places (roosts) are protected under law. It is an offence to:

- Deliberately capture, injure or kill a bat
- Deliberately disturb a bat in a way that would affect its ability to survive, breed or rear young or significantly affect the local distribution or abundance of the species
- Intentionally or recklessly disturb a bat at a roost
- Intentionally or recklessly obstruct access to a roost whether bats are present or not
- Damage or destroy a roost whether bats are present or not
- Possess, control, transport, sell exchange or offer for sale/exchange any live or dead bat or any part of a bat

Through the Conservation (Natural Habitats &c.) Regulations 1994 (this has been updated and consolidated with subsequent amendments by the Conservation of Habitats and Species Regulations 2017 mentioned above) bats were designated a European protected species as part of Europe wide effort to conserve certain plant and animal species.

Any development which is likely to result in the disturbance of a European protected species, or damage to its habitat usually requires a European protected species licence from Natural England.

‘Development’ is interpreted broadly to include projects involving demolition of buildings, rebuilding, structural alterations and additions to buildings.

### 6.2. Birds

All birds, their nests and eggs are protected by law and it is an offence, with certain exceptions, to intentionally:

- Kill, injure or take any wild bird.
- Take, damage or destroy the nest of any wild bird while it is in use or being built.
- Take or destroy the egg of any wild bird.

The Conservation of Habitats and Species (Amendment) Regulations 2012 require public bodies to help “*preserve, maintain and re-establish habitat for wild birds.*”

Barn Owls and other birds listed in Schedule 1 of the Wildlife and Countryside Act 1981 are given a further level of protection against disturbance whilst breeding.