



Outbuildings at Barnfield  
Gweek, Cornwall

Bat and Barn Owl Surveys  
and Bat Mitigation Statement

Ref:  
BE459a

Date:  
12<sup>th</sup> August 2019

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## 1. INTRODUCTION

It is proposed to convert some outbuildings to create annex accommodation to a dwelling known as Barnfield. The address of the site is Barnfield, Gweek, Cornwall, TR126UB. The OS Grid ref is SW 70526 26648. The dwelling is listed.

Bright Environment was commissioned by the owners of the property to carry out a visual bat and barn owl survey to inform the planning application. Bats and barn owls are legally protected (see Appendix 1).

Bat droppings were found within one of the outbuildings and further detailed bat surveys were commissioned to establish whether the droppings represented current use, and to establish species, numbers and access points.

This report details the results from the above surveys and includes the mitigation measures to be adopted to maintain the favourable conservation status of the bat population.

The survey area comprises two detached single storey outbuildings (see Photographs 1 and 2). One outbuilding has two sections. The outbuildings are referenced Outbuilding 1 (section a and section b) and Outbuilding 2 as indicated on Photographs 1 and 2.

## 2. METHODOLOGY

The surveys were carried out following the guidance given in 'Bat Surveys for Professional Ecologists – Good Practice Guidelines' (Collins, 2016) and Barn owl survey methodology and techniques for use in ecological assessment (Shawyer, 2011).

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).

### 2.1 Visual survey methodology

A visual survey of the buildings was carried out on 19<sup>th</sup> July 2019. During this survey the suitability of the buildings and surrounding habitats to support bats and barn owls was assessed. A detailed search of the interior and exterior of the buildings was carried out using a high-powered torch to illuminate all areas thought suitable for bats and barn owls. Any accessible cracks and crevices were investigated with the use of a torch and endoscope.

The survey involved looking for bats and barn owls and for evidence of their use, including droppings, pellets, staining, liming, feathers and feeding remains.

### 2.2 Bat emergence surveys methodology

Two emergence surveys were carried out, on 22<sup>nd</sup> July and 10<sup>th</sup> August 2019, to record any bats emerging from the buildings. The surveys commenced 15 minutes before sunset and continued until one hour after sunset. One surveyor was employed to provide coverage of elevations with potential bat access points. The surveyor used a Echometer Touch bat detector, employing

heterodyne and frequency division methods of detection. Bat calls were recorded (on a SongMeter SM2+) for computer analysis.

### 2.3 Remote monitoring methodology

A remote monitoring survey was carried out from 22<sup>nd</sup> July to 10<sup>th</sup> August 2019.

A SongMeter (SM2+) detector, set to record bats from one hour before sunset to one hour after sunrise, was placed at three locations within the outbuildings as details in Table 1.

Table 1 Survey details.

Date	Type of survey	Personnel - bat licence number	Weather conditions
19.07.19	Visual survey	Dr Janine Bright 2015-13156-CLS-CLS	Dry, calm, full cloud. Temp 16C
22.07.19	Emergence survey	Dr Janine Bright 2015-13156-CLS-CLS	Dry, calm, full cloud. Temp 18C
10.08.19	Emergence survey	Dr Janine Bright 2015-13156-CLS-CLS	Dry, light breeze, patchy cloud. Temp 16C
22.07.19 to 26.07.19	Remote monitoring of roof void in Outbuilding 1a	Dr Janine Bright 2015-13156-CLS-CLS	Temp 16-23C.
26.07.19 to 29.07.19	Remote monitoring of Outbuilding 1b	Dr Janine Bright 2015-13156-CLS-CLS	Temp 12-21C.
29.07.19 to 10.08.19	Remote monitoring of Outbuilding 2	Dr Janine Bright 2015-13156-CLS-CLS	Temp 12-21C.

## 3. SURVEY RESULTS

### 3.1 Habitat description

Barnfield is located within the historic harbour village of Gweek at the top of the Helford Estuary. Barnfield is a detached Georgian property built in 1829. It is located 120m from the river and booyard. The house has enclosed gardens and there are agricultural fields behind, with a network of native species-rich Cornish hedgerows. Intertidal estuarine habitats are present nearby and the wooded river valley extends to the north. These habitats provide excellent foraging opportunities for bats and barn owls.

The survey area comprises two detached single storey outbuildings (see Photographs 1 and 2). One outbuilding has two sections. The outbuildings are referenced Outbuilding 1 (section a and section b) and Outbuilding 2 as indicated on Photographs 1 and 2.

### 3.2 Visual bat survey results

Outbuilding 1 is of mixed construction (stone and block) with a concrete floor. Section 1a has a gable front with a roof covering of corrugated metal sheet. There is a roof void within this section, the floor of which has partially collapsed and is only thin hardboard. It was not safe to access the roof void to search for evidence of bats. No bat droppings were found on the floor of this section;

however leaf litter within may have concealed any evidence. Section 1b has a corrugated asbestos sheet roof. No evidence of bats was found within this section. Both sections of outbuilding 1 have large openings on the southeast elevation (see Photograph 1).

Outbuilding 2 is a concrete block former stable. It has a mono-pitch corrugated metal sheet roof and a concrete floor. A search within this building found evidence of bat use. A small number of bat droppings (approx. 30) were found on shelving near the southern wall of the building. Potential bat access points are present on the wall tops on the south elevation and via a gap above one of the stable doors.



Photograph 1 Southeast elevation outbuilding 1



Photograph 2 Southeast elevation outbuilding 2



Photograph 3 Interior of outbuilding 1a



Photograph 4 Interior of outbuilding 1b



Photograph 5 Bat droppings on shelving within Outbuilding 2.

### 3.3 Emergence survey results

22<sup>nd</sup> July 2019 – One common pipistrelle emerged from the southern corner wall top of outbuilding 2, as indicated on Photograph 6. One lesser horseshoe bat emerged from the doorway opening of outbuilding 1b and light sampled (flew in and out repeatedly) within outbuildings 1a and 1b.



Photograph 6 Point of common pipistrelle emergence from Outbuilding 2 on 22.7.19

10<sup>th</sup> August 2019 – One common pipistrelle emerged from the ridge of Outbuilding 1b as indicated on Photograph 7. One lesser horseshoe bat emerged from the open doorway outbuilding 1a and light sampled (flew in and out repeatedly) within outbuildings 1a and 1b.



Photograph 7 Point of common pipistrelle emergence from Outbuilding 1b on 10.8.19

Several passes from noctule bats were observed, these bats flew over the site and were not associated with the site. Myotis bats were observed foraging nearby. These bats did not emerge from the outbuildings and will not be affected by the proposed works.

### 3.4 Remote monitoring bat survey results

The results of the remote monitoring are detailed in Table 1.

Lesser horseshoe was recorded in outbuilding 1a and 1b. The timing of the calls and the number of calls recorded indicate one individual day roosting within outbuilding 1. This individual light samples (repeatedly flying in and out of outbuilding 1a and 1b before it leaves the site for foraging.

No bats were recorded within outbuilding 2.

Table 1. Remote monitoring results.

Date and location of remote monitoring	Date and time of recording	Species
22.07.19 to 26.07.19 Roof void in Outbuilding 1a	23.7.19 22.36hrs 24.7.19 22.28hrs 24.7.19 22.43hrs 25.7.19 04.02hrs 25.7.19 04.16hrs	Lesser horseshoe Lesser horseshoe Lesser horseshoe Lesser horseshoe Lesser horseshoe
26.07.19 to 29.07.19 Outbuilding 1b	26.7.19 21.36hrs 26.7.19 21.54hrs 27.7.19 00.33hrs 27.7.19 21.46hrs 28.7.19 21.33hrs 28.7.19 21.49hrs 29.7.19 01.26hrs 29.7.19 05.07hrs	Lesser horseshoe Lesser horseshoe Lesser horseshoe Lesser horseshoe Lesser horseshoe Lesser horseshoe Lesser horseshoe Lesser horseshoe
29.07.19 to 06.08.19 Outbuilding 2	No bats were recorded by the remote device.	n/a

### 3.5 Interpretation and evaluation of bat survey results

The surveys indicate that Outbuilding 1 is used by one common pipistrelle and one lesser horseshoe bat as a day roost. The common pipistrelle emerged from the ridge of outbuilding 1b. The horseshoe bat has emerged from both outbuilding 1a and 1b via the large open doorways and uses both spaces for light sampling. Outbuilding 2 is used as an occasional day roost by one common pipistrelle bat. The bat appears to roost on the wall top in the southern part of the building and does not use the interior of the building.

Common pipistrelle is common and widespread throughout the UK. The population is currently showing a significant increase (BCT, 2014). Common pipistrelle is listed as vulnerable within the red data book for Cornwall (Williams, 2009). Common pipistrelle is a priority species for conservation in the Cornwall BAP.

Lesser horseshoe is rare and endangered; its distribution is limited to south-west England and Wales. Population monitoring data show significant upward trends for both hibernation and colony surveys, indicating that the population is increasing (BCT, 2012). It is listed as a priority species for conservation on the UK Biodiversity Action Plan (UKBP, 2007). Locally the lesser horseshoe bat is included within the red data book (Williams, 2009) and is listed as a priority species in the Cornwall BAP Volume 4 (CBI, 2010).

Through evaluation of the number and nature of bats using the building and their conservation status (following the guidance given in IEEM, 2006 and the Bat Mitigation Guidelines), the building is considered to be of *local* importance for the conservation of bats.

### 3.6 Barn owl survey results

No barn owls or evidence of barn owls was found at the time of the survey. It is unlikely that any evidence was overlooked.

## 4. BAT IMPACT ASSESSMENT

It is proposed to convert these outbuildings (with probably extensions) to create a dwelling. Without mitigation there is the potential to harm or injure bats and for longterm loss of roosts. This will affect one day roosting common pipistrelle and one day roosting lesser horseshoe bat.

The works will be subject to obtaining a European Protected Species (EPS) licence. There are two types of EPS bat licenses as follows:

- A standard EPS mitigation license. This takes 30 working days to process and involves a comprehensive application process where details of survey methods, results, mitigation proposals and post completion monitoring are required, along with supporting figures and documents.
- A bat low impact class license (BLICL). This takes 10 working days to process and involves a short application form and no requirements for post completion monitoring. The BLICL is only for small numbers (less than 10 as a guide) of common species (common pipistrelle, soprano pipistrelle, brown long-eared, whiskered, brandts, daubentons and natterers; and some roost types for lesser horseshoe in the southwest) affecting no more than three roosts across no more than three structures. Only certain bat roost types apply and this type of license is intended for impacts of less than 6 months duration.

Works affecting bats at the outbuildings of Barnfield qualify under the BLICL. The application should be submitted at least 3 weeks in advance of the intended works start date but not more than 12 weeks in advance.

Through consultation with the owner a mitigation plan has been designed to minimise impacts on bats and maintain the population in favourable conservation status. Following successful implementation of the proposed mitigation detailed in section 5, the impacts of the works involve temporary disturbance to a one common pipistrelle bat and one lesser horseshoe bat and roost modification. Using the guidance given in the Bat Mitigation Guidelines (Mitchell-Jones, 2004), this impact is considered to be *low*.

## 5. BAT MITIGATION STATEMENT

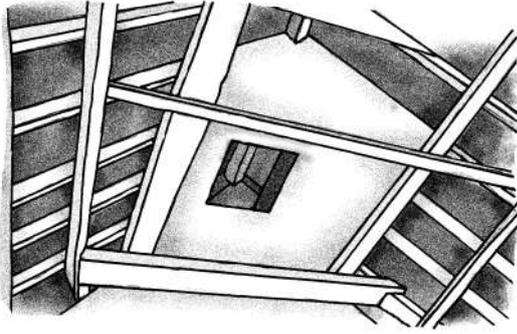
Once planning approval is granted a low impact license from Natural England will be obtained. The license application should be submitted at least 3 weeks in advance of the intended works start date but not more than 12 weeks in advance.

Once the license is granted the licensed ecologist will give a toolbox talk to all workers to detail the mitigation measures to be adopted. Roof removal will be carried out under an ecological watching brief.

There is not sufficient space to create a roost of appropriate dimensions for horseshoe bats within the converted buildings. A standalone replacement bat roost will therefore be constructed to the northeast within 15m of the outbuildings and in a dark location with good links to foraging habitat. It will be timber framed and timber clad and have a pitched roof. The roof covering will be tile, slate or metal sheet and will be underlain with bitumen felt or wooden boarding. The floor area of the roost will be 4m x 3m and the height to the apex will be 2.8m. The construction of the roof will be traditional, and non-trussed so as to provide an unobstructed roof area to allow for sufficient flight space. Access for bats will be via a 400mm x 300mm entrance near the apex. No external lighting will be placed on or near the bat roost. The roost will be fitted with a lockable door and a sign will be placed on this door stating the following:

'This area is a designated bat mitigation roost and is not to be used for any other purpose. Bats are a Protected Species. For help and advice please contact the Bat Helpline (operated by BCT on behalf of Natural England) on 0345 1300 228'.

The roost will be enhanced by a hot box. A 'hot box' provides a sheltered, warm and dark roosting environment for horseshoe bats. It can be constructed with plywood or other wood and comprises two triangular panels fixed to the rafters and a rectangular floor panel. The floor panel will have an access opening of 50cm x 50cm. All the joints will be sealed using a non-toxic sealant, and the external parts should be painted matt black to increase heat absorption. An example hotbox is shown overleaf.



The common pipistrelle will be accommodated in a Schwegler 1FR bat tube or similar (see photograph 8). This will be located on the north elevation of the converted building near the eaves in a dark location. Bats will not be given access to the roof of the converted building so there is no restriction on the type of membrane used. All bat accesses and mitigation measures will be checked by the ecologist to ensure successful installation.



Photograph 8. Schwegler 1FR bat tube design and built in woodstone bat box

In compliance with the new Biodiversity SPD the new dwelling will include a bee brick that will be installed on the south-facing wall 1-2m above ground level. Bee bricks contain multiple cavities for bees to lay their eggs and are integral to a building (see photograph 9).

Post completion monitoring of the horseshoe standalone replacement roost will be carried out 2 years after completion and will involve a visual survey and remote monitoring. As ecological features can change over time it is recommended that this report is valid until August 2020.



Photograph 9. Example bee brick

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## Appendix 1 Summary of relevant legislation, policies and case law

### Bats

All British bat are European protected species and are afforded full protection under UK and European legislation, including the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010. Together, this legislation makes it illegal to:

- Intentionally kill, injure or capture a bat;
- Intentionally or recklessly disturb a bat;
- Intentionally or recklessly damage, destroy or obstruct access to a place of shelter or breeding (for example, bat roosts), and this applies regardless of whether the species is actually present at the time (for example, a bat roost used in the winter for hibernation is protected throughout the year, even during the summer when it is not occupied).
- Possess or transport a bat or any part of a bat, unless acquired legally;
- Sell, barter or exchange bats, or parts of a bat.
- Intentionally handle a wild bat or disturb an bat whilst using a place of shelter/ breeding unless licensed to do so by the statutory conservation agency (Natural England).

Barbastelle, Bechstein's, noctule, soprano pipistrelle, brown long-eared, greater horseshoe and lesser horseshoe bats are priority species for conservation on the UK BAP and protected under the NERC Act 2006. Barbastelle, pipistrelle, greater and lesser horseshoe bats are county priority BAP species (CBI, 2004).

### Case Law

There are several case laws in Britain relating to the duty of developers and planning authorities with respect to wildlife, resulting in several key principles summarised in the table below:

Case / Appeal	Providing support for
Morge v Hampshire County Council (2011)	'Disturbance' under the Conservation Regulations 2010 applies to an activity likely to impact negatively on the local population of a European Protected Species.
R v Cheshire East Council 'The Woolley Case' (2009)	Regarding European Protected Species, Local Authorities must apply the 'three tests' under the Conservation Regulations 2010 when deciding on planning applications: that there is no satisfactory alternative, there is an appropriate reason for the development, and that the development will not affect the favourable conservation status of protected species present.
APP/P9502/A/08/2070105 (Appeal decision, Brecon, 2008)	Para 18: Local Planning Authorities cannot condition provision of a mitigation scheme; detailed mitigation must be provided prior to determination.
APP/C0820/A/07/2046271 (Appeal decision, Padstow, 2007)	Para 18: Full survey information must be provided prior to determination; not just for protected species, but also for BAP species (in this case corn buntings).
R v London Borough Council Bromley (2006)	Para 30: Environmental Impact Assessment required at outline planning stage.
R v Cornwall County Council 'The Cornwall Case' (2001)	Surveys for protected species cannot be conditioned; must be undertaken prior to determination.

### **Barn owls and other birds**

The nests and eggs of all wild birds are protected against taking, damage and destruction under the Wildlife and Countryside Act 1981. Barn owls are given greater protection against disturbance while breeding under Schedule 1 of the Act.

### **National Planning Policy Framework 2012**

The National Planning Policy Framework (NPPF) sets out national planning policy that is committed to minimising impacts on biodiversity and providing net gains in biodiversity where possible. Under NPPF, local planning authorities have an obligation to promote the preservation, restoration and recreation of Priority habitats, ecological networks and the protection and recovery of Priority species as identified under the Natural Environment and Rural Communities Act (2006). Section 118 of the NPPF also requires enhancements for biodiversity. The NPPF also recognises the wider benefits of ecosystem services.