Bright Environment
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Barn at Crift Cottage
Cornwall

Bat and Nesting Bird Surveys and
Bat Mitigation Statement

Ref:
BE628c

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Prepared by:
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For:
Mr Chapman

CIEEM REGISTERED PRACTICE 2020-2021

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1. INTRODUCTION

It is proposed to convert a redundant barn to create residential accommodation. The address of the site is Crift Cottage, Lanlivery, Bodmin, Cornwall, PL30 5DD.The OS Grid reference of the site is SX 06684 59663.

Bright Environment was commissioned by Mr Chapman in December 2020 to carry out a visual bat and nesting bird survey to inform the planning application. Bats and nesting birds are legally protected (see Appendix 1).

Bat droppings were found within the building and further detailed bat surveys were recommended 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.

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). 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 building was carried out on 11th December 2020. During this survey an assessment of the suitability of the building and surrounding habitats to support bats and nesting birds was made.

A detailed search of the interior and exterior of the building was carried out using a high powered torch to illuminate all areas thought suitable for bats and nesting birds. Any accessible cracks and crevices were investigated with the use of a torch and endoscope.

The survey involved looking for bats and nesting birds and for evidence of their use, including droppings, pellets, staining, liming, feathers and feeding remains. Survey details are shown in Table 1.

Potential bat roosts identified during the visual inspection of the building were categorised as to their suitability in accordance with the Bat Conservation Trust's (BCT) Good Practice Guidelines (Collins, 2016) as described below:

- Negligible: negligible features with potential to support roosting bats.
- Low: one or more features with potential to support individual bats on an occasional basis. Unlikely to support large numbers of bats.
- Moderate: one or more features with potential to support roosting bats but unlikely to be of high conservation status.
- High: one or more features with potential to support large numbers of bats on a regular basis.

2.2 Bat emergence surveys methodology

Two emergence surveys were carried out, on 27th May 2021 and 10th June 2021, to record any bats emerging from the building. The surveys commenced 15 minutes before sunset and continued until one hour after sunset. Two surveyors were employed to provide coverage of all elevations. Both surveyors used Echometer Touch bat detectors, employing heterodyne and frequency division methods of detection.

2.3 Remote monitoring methodology

A remote monitoring survey was carried out from 27th May to 10th June 2021. A SongMeter (SM2+) detector was placed in the upper floor of the barn where droppings were found and set to record bats from one hour before sunset to one hour after sunrise.

Table 1 Survey details.

Date	Type of survey	Personnel - bat licence number	Weather conditions
11.12.20	Visual survey	Dr Janine Bright 2020-49235-CLS-CLS	Dry, light breeze, overcast. Temp 6C
27.5.21	Emergence survey	Jason Trewinnard Emma Pethick CL17-2021-53399-CLS-CLS	Short light shower then dry, calm, full cloud. Temp 10C
10.6.21	Emergence survey	Milo Bright Leanne Rogers	Dry, calm, full cloud. Temp 13-15C
27.5.21 to 10.6.21	Remote monitoring	Dr Janine Bright 2020-49235-CLS-CLS	The temperature range recorded by the detector inside the building was 17C – 27C. Good conditions for bat emergence for duration.

2.4 DNA analysis

Bat dropping samples were sent to Sure Screen Scientifics to identify species.

2.5 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 U.K.), 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 2 (below) categorizes bat species by their distribution and rarity in England. Table 3 (below) assigns a value for each roost type for the different rarity categories (Tables 2 and 3 are adapted from Wray *et al*. 2010).

Table 2: Relative rarity of bat species in England (adapted from Wray *et al.* 2010)

Rarity	**Species**
Common	Common pipistrelle (*Pipistrellus pipistrellus*) Soprano pipistrelle (*Pipistrellus pygmaeus)* Brown long-eared (*Plecotus auritus*)
Rarer	Lesser horseshoe (*Rhinolophus hipposideros)* Whiskered (*Myotis mystacinus)* Brandt's (*Myotis brandtii)* Daubenton's (*Myotis daubentonii)* Natterer's (*Myotis nattereri)* Leisler's (*Nyctalus leisleri)* Noctule (*Nyctalus noctula)* Nathusius' pipistrelle (*Pipistrellus nathusii)* Serotine (*Eptesicus serotinus)*
Rarest	Greater horseshoe (*Rhinolophus ferrumequinum)* Bechstein's (*Myotis bechsteinii)* Alcathoe (*Myotis alcathoe)* Greater mouse-eared (*Myotis myotis)* Barbastelle (*Barbastella barbastellus)* Grey long-eared (*Plecotus austriacus)*

Table 3: 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

3. SURVEY RESULTS

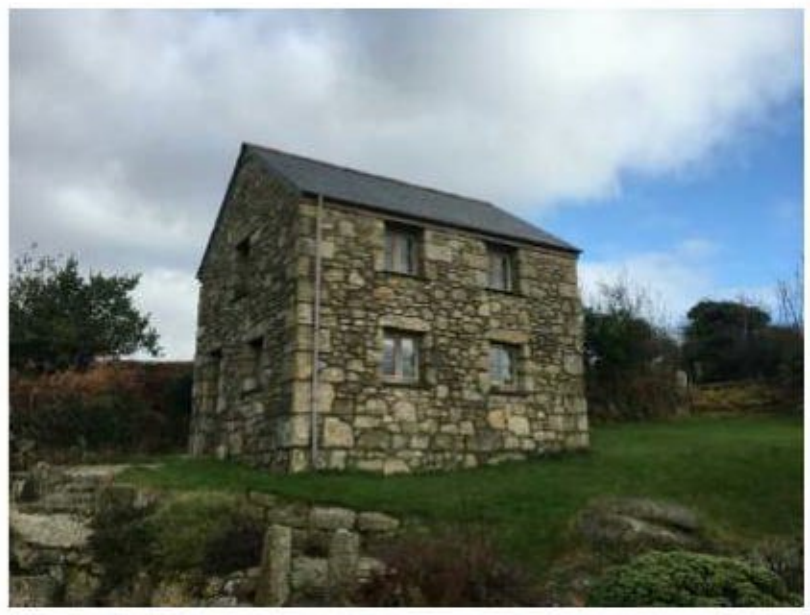
3.1 Habitat description

The barn to be converted is in a rural location near to the nature reserves of Redmoor, Breney Common and Helman Tor. These reserves have extensive areas of damp grassland, wet woodland and moor. The barn is approximately 1.5km northwest of Lanlivery. The surrounding landscape is dominated by mixed agriculture whereby the relatively small fields are bound by a network of native species-rich Cornish hedgerows. These habitats provide excellent foraging opportunities for bats and barn owls.

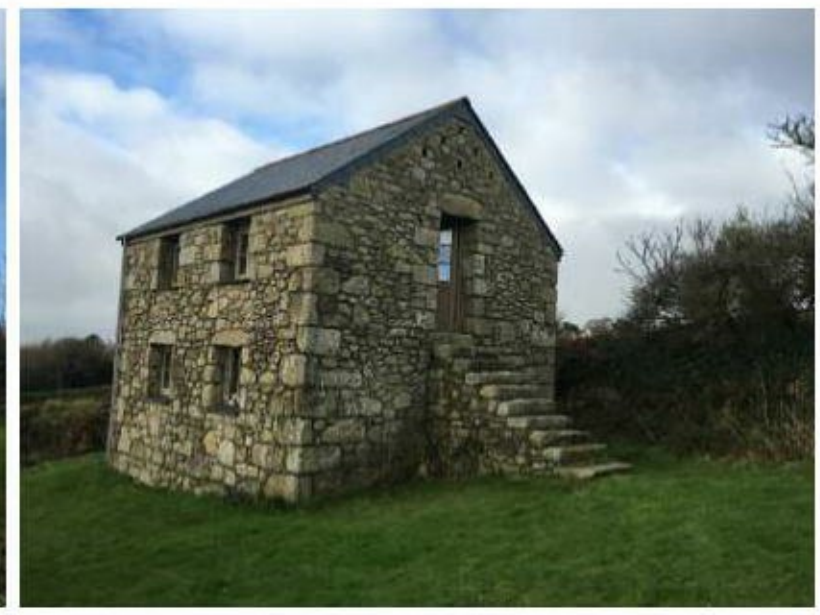
The barn to be converted was repaired several years ago, which included a new roof. It is a two-storey stone barn with concrete block internal walls. Granite steps on the east elevation provide access to the upper floor. The roof covering is natural slate with a modern breathable membrane. The membrane has been damaged in several places and has several holes in it. The roof is pitched and there are barge slates on the gables. The barn has been used for storage and as a laundry area for the neighbouring holiday barns.

On the first floor there is no internal ceiling and the roof trusses and underside of the roof membrane are visible.

It is understood that the roof will not need to be replaced as part of the conversion. Conversion will involve internal renovation. Existing windows and doors will be retained.



Photograph 1. South and west elevation.



Photograph 2. South and east elevation.

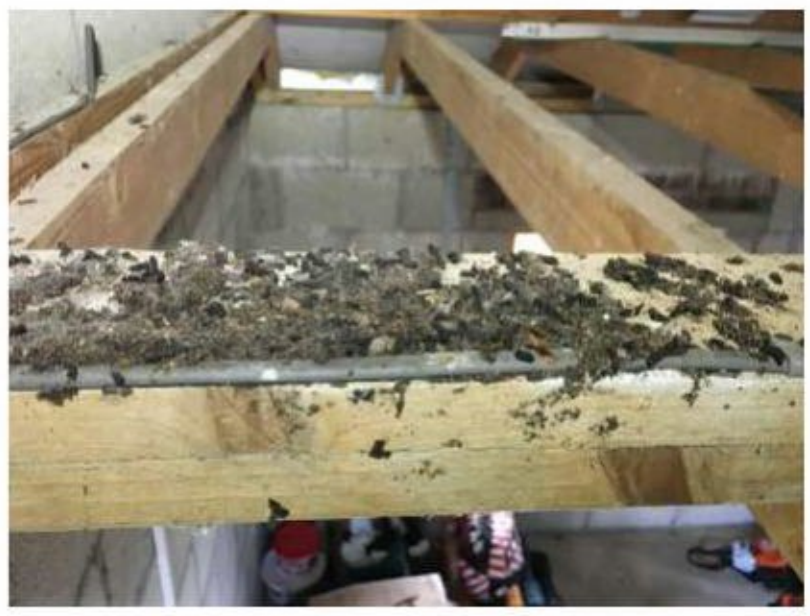
3.2 Visual bat survey results

No evidence of bats was found within the ground floor area.

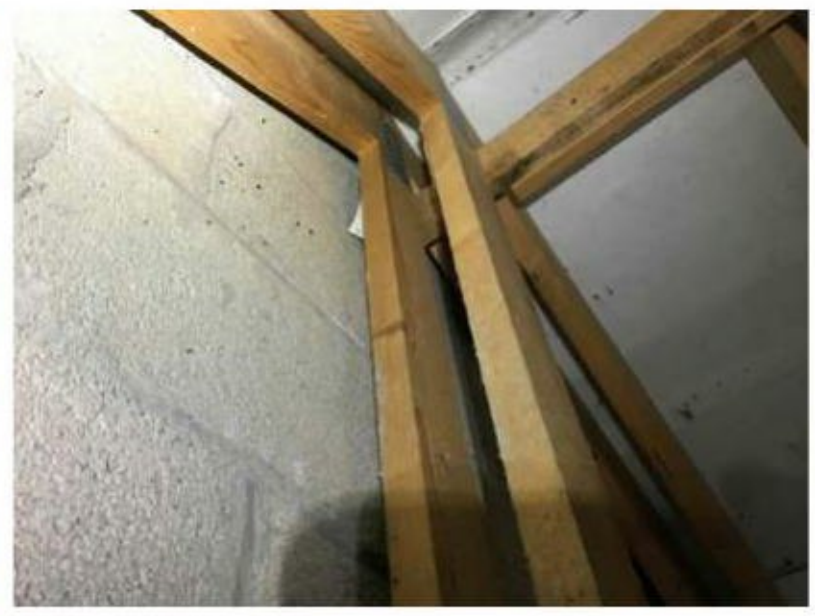
On the first floor significant accumulations of bat droppings were found on a central beam under the ridge. The droppings were along the full length of the beam. Bat droppings were also found on the concrete block walls on the east gable (see Photographs 3 and 4). Bat feeding remains in the form of butterfly wings were also present on the central beam.

No bat droppings were found on the floor beneath the beam and it is likely that this had been recently swept.

A search around the exterior of the barn did not find any further evidence of bats. However potential bat access points were observed behind the barge slates on both gables and over the wall tops at the overhanging eaves where gaps were present.



Photograph 3. Bat droppings on central beam.



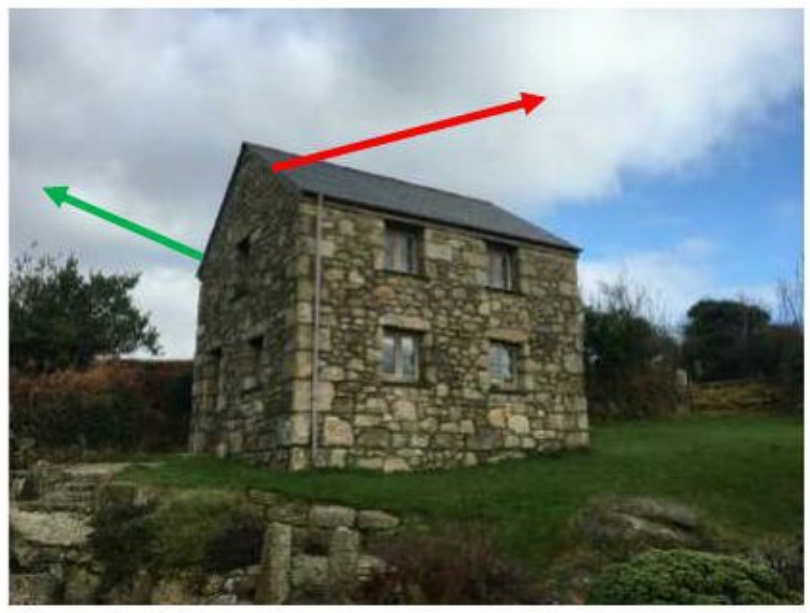
Photograph 4. Bat droppings on east gable.

3.3 Emergence survey results

27th May 2021 – Four brown long-eared bats emerged from the building during the dusk survey. These all emerged from behind barge slates on the west gable as indicated on Photograph 5.

A lesser horseshoe bat was recorded flying nearby but was not associated with the surveyed building.

10th June 2021 - Seven brown long-eared bats emerged from the building during the dusk survey. These all emerged from behind barge slates on the west gable (northwest corner) as indicated on Photograph 5. Common pipistrelle bats were recorded flying nearby but were not associated with the surveyed building.



Green arrow represents 7 brown long-eared bats on 27.5.21

Red arrows represents 4 brown long-eared bats on 10.6.21.

Photograph 5. Brown long-eared emerge points.

Green arrow represents 7 brown long-eared bats on 27.5.21

Red arrows represents 4 brown long-eared bats on 10.6.21.

3.4 Remote monitoring bat survey results

Brown long-eared bat was recorded on all survey nights of the remote monitoring.

3.5 DNA analysis results

The DNA analysis confirmed the bat droppings as being from brown long-eared bat.

3.6 Interpretation and evaluation of bat survey results

The surveys indicate that the barn at Crift Cottage is used as a maternity roost by brown long-eared bats. A maximum of seven individuals were recorded but numbers are likely to increase later in the season. The favoured roosting area is within the roof void at the apex near the east gable. The favoured bat access points are over the wall tops and from behind barge slates on the west gable as indicated on Photograph 5.

Brown long-eared is common and widespread throughout the UK. The population has fluctuated during the monitoring period 1997 – 2011 with no significant trend and is considered to be stable (BCT, 2012). It is listed as a priority species for conservation on the UK Biodiversity Action Plan (UKBP, 2007) and within the local Cornwall BAP Volume 4 (CBI, 2010). It is also listed as vulnerable within the red data book for Cornwall (Williams, 2009).

Through evaluation of the number and nature of bats using the building and their conservation status (following the framework provided by Wray *et al.,* 2010), the building is considered to be of *county* importance for the conservation of bats, being a maternity site for a common species.

3.7 Nesting bird survey results

No evidence of nesting birds was found at the time of the survey. It is possible that birds could nest within the building before works commence as there are many access points.

4. BAT IMPACT ASSESSMENT

The barn is to be converted to create residential accommodation. It is understood that the roof will not need to be replaced as part of the conversion. Conversion will involve internal renovation. Existing windows and doors will be retained.

Without mitigation there is the potential to harm or injure bats and the potential to block or loose bat access points leading to loss of roost. There is also the potential to cuase disturbance to bats

during the sensitive breeding season when they have dependant young. This will impact upon a maternity colony of brown long-eared bats of county value.

The works will be subject to obtaining a Euopean Protected Species (EPS) licence once planning permission has been granted. 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 specices (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 barn at Crift Cottage do not qualify for a BLICL due to the presence of a maternity roost. A standard bat licence will be required. Natural England take 35 working days to process an application. **Please note to avoid the need to repeat these surveys, the bat licence application (to be made once planning approval has been granted) requires survey data that is less than 12 months old**.

Through consultation with the architect 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 outside of the breeding season and roost modification affecting a maternity roost of brown long-eared bats. The works will be scheduled outside of the breeding season and a maximum of three individuals are expected to be present. Using the guidance given in the Bat Mitigation Guidelines (Mitchell-Jones, 2004), this impact is considered to be *low*.

5. BAT MITIGATION STATEMENT

Works affecting the barn at Crift Cottage will only commence when an EPS licence has been obtained.

A roof void for the sole use of bats will be created. This will retain the current roost used by the maternity colony of brown long-eared bats. The ceiling will be installed below the existing roof timbers to retain the existing roof space dimensions. The existing bat access points at the gables will be retained. Bats current crawl over the wall top and emerge from behind gaps behind barge slates. If there is any need to replace these barge slates then this will be done under an ecological watching brief to ensure a gap of sufficient size is retained.

The licensed ecologist will give a 'tool box' talk to the renovation team to explain the potential presence of bats and the mitigation measures to be adopted. Ceiling installation works will be carried out under the supervision of the licensed ecologist.

The new roof void will include an access hatch for monitoring purposes. The loft will not be used to store items. Interna lights will not be installed. A sign stating the following will be placed just inside the hatch:

> "This area is used by roosting bats. Bats are legally protected, please do not disturb. For further information please call the Bat Helpline Tel: 0345 1300 228."

The current roof has modern breathable membrane which is detrimental to bats. Bats can become entangled in this. To minimise the risk of entanglement the breathable membrane within the roof void will be covered in Netlon Mesh of a sufficient gauge to prevent young and adult bats becoming trapped. This work will be carried out under the direct supervision of the licensed ecologist. Any bats encountered will be moved by the ecologist to a temporary mitigation box while the mesh is installed. Once the mesh is installed the bats will be returned to the roost.

To avoid disturbing breeding bats the following works will be carried out between October and March:

- Mesh installation.
- Ceiling and insulation installation.
- Installation of any services through the roof void.

- Any modifications to the roof or barge slates.

Once the above works are complete the renovation can progress without seasonal restrictions and without the supervision of the ecologist.

Care will be taken to ensure that bat access points at the wall tops are not inadvertently blocked by insulation.

All bat accesses will be checked by the ecologist to ensure they have been correctly retained. NE prefer 2 years' worth of post completion monitoring for impacts to maternity sites of common species. However, as the existing roost and access points will be retained and impacts are low one post completion monitoring event is recommended. This will be carried out one year after completion and involve a visual survey and a single emergence survey at dusk between May and August.

As ecological features can change over time it is recommended that this report is valid until July 2022.

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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 nesting 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.