



Unit 4, Langham Stables, Langham Lane, Lodsworth, Petworth, West Sussex, GU28 9BU

Bat Scoping Report

North Barn, Flansham

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Report Summary

1. The Ecology Co-op were commissioned by Mr B. Martin and Ms R. Parker to undertake a bat scoping survey at North Barn, Flansham. The purpose of this report is to present the findings of the appraisal and identify potential ecological constraints and opportunities in relation to a proposal to convert the barn to residential accommodation.
2. An assessment of the site was carried out by Owen Crawshaw BSc (Hons) MCIEEM and Natural England Level 2 class bat licence holder on the 9th December 2020. This included a ground-based internal and external inspection of the building and an appraisal of the surrounding habitats, to evaluate the site for its potential to support roosting bats and any other protected/notable species. All bat species are European Protected Species (Annex IV, 'Habitats Directive').
3. The barn was previously surveyed in 2016, the scoping survey assessed the building as having 'low' bat roost potential and recommended a single dawn re-entry survey to confirm the presence/likely absence of roosting bats. This survey was completed, and no roosting bats were subsequently identified.
4. The barn is constructed from flint and mortar walls and has been boarded up with wooden chipboard at its northern elevation. The roof of the building is hipped and is covered by slate tiles. An area of rough grassland exists to the immediate north of the barn, with an unmanaged area of ruderal vegetation present within a courtyard to the south (outside of the curtilage). The site is situated in a suburban location at the northern edge of a large town. Agricultural land extends to the north of the site and is dominated by arable land which is crossed by hedgerows and a network of drainage ditches.
5. This scoping assessment assessed the building as having 'low' bat roost potential due to the presence of two gaps recorded beneath ridge tiles at the south-eastern edge of the building's roof. These gaps were inspected using a video endoscope during the survey, with no bats or evidence of bats identified.
6. No further surveys of the barn are recommended. However, construction work may only commence following a repeat endoscope inspection of gaps beneath ridge tiles by an ecologist and subsequent soft strip of the ridge. The soft strip must be overseen by a suitably qualified and licensed ecologist. Should any bats or signs of bats be identified, the work would have to cease until appropriate surveys have been undertaken and a European Protected Species (EPS) licence obtained to legally proceed with the development.
7. Recommendations are also made with regard to precautionary measures which will need to be adopted in relation to ground preparations (section 4.2). This is to avoid impacts on reptiles or great crested newts *Triturus cristatus*, in the unlikely scenario that these species are utilising the small area of rough grassland within the site.



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We disclaim responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.



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1 INTRODUCTION

1.1 Purpose of the Report

The Ecology Co-op has been commissioned to undertake a bat scoping survey of North Barn, Flansham by Mr B. Martin and Ms R. Parker. This report presents the findings of a walkover survey and building inspection for occupation by bats, undertaken by Owen Crawshaw BSc (Hons) MCIEEM (Natural England Level 2 bat survey class licence holder) on 9th December 2020. It provides details of the potential for any protected species and/or habitats to be present at the site and an assessment of the potential ecological constraints to the proposed conversion of an existing barn into residential accommodation. Recommendations for further surveys that are likely to be required to inform a planning application are provided, if necessary. Where appropriate, measures to avoid, mitigate and/or compensate for impacts are outlined.

1.2 Background

The site is located at North Barn, Hoe Lane, Flansham, Bognor Regis, PO22 8NT. The central grid reference for the site is SU 9609 0137.

The site comprises of a single disused barn. The barn is constructed from flint and mortar walls and has been boarded up with wooden chipboard at its northern elevation. The roof of the building is hipped and is covered by slate tiles. An area of rough grassland exists to the immediate north of the barn, with an unmanaged area of ruderal vegetation present within a courtyard to the south (outside of the curtilage). The site is situated in a suburban location at the northern edge of a large town. Agricultural land extends to the north of the site and is dominated by arable land which is crossed by hedgerows and a network of drainage ditches.

The building was previously survey in 2016 by The Ecology Co-op¹ and the scoping assessment identified the barn as having 'low' bat roost potential in accordance with best practice guidance. As a result, a single dawn re-entry survey was conducted in July 2016. No bats were identified to re-enter the barn and it was subsequently concluded that bat roosts were likely to be absent from within the fabric of the building.

The location of the study building is based on the site plan provided by Architectura Design and is shown in Figure 1.

The proposed development includes extension of the barn at its northern elevation as well as internal conversion into residential accommodation and re-roofing works. Existing and proposed elevation plans are presented in Figure 2.

¹ The Ecology Co-op (2016). *Flansham, Yapton, Bognor Regis – Bat Scoping and Re-entry Assessment*.



Figure 1. Top – A location plan showing the extent of the survey area (outlined in red) at North Barn, Flansham (the site) Supplied by Architecura Design on 03/02/21 . Bottom – An aerial image showing the location the site (outlined in red). Image produced courtesy of Google maps (map data ©2020 Google).

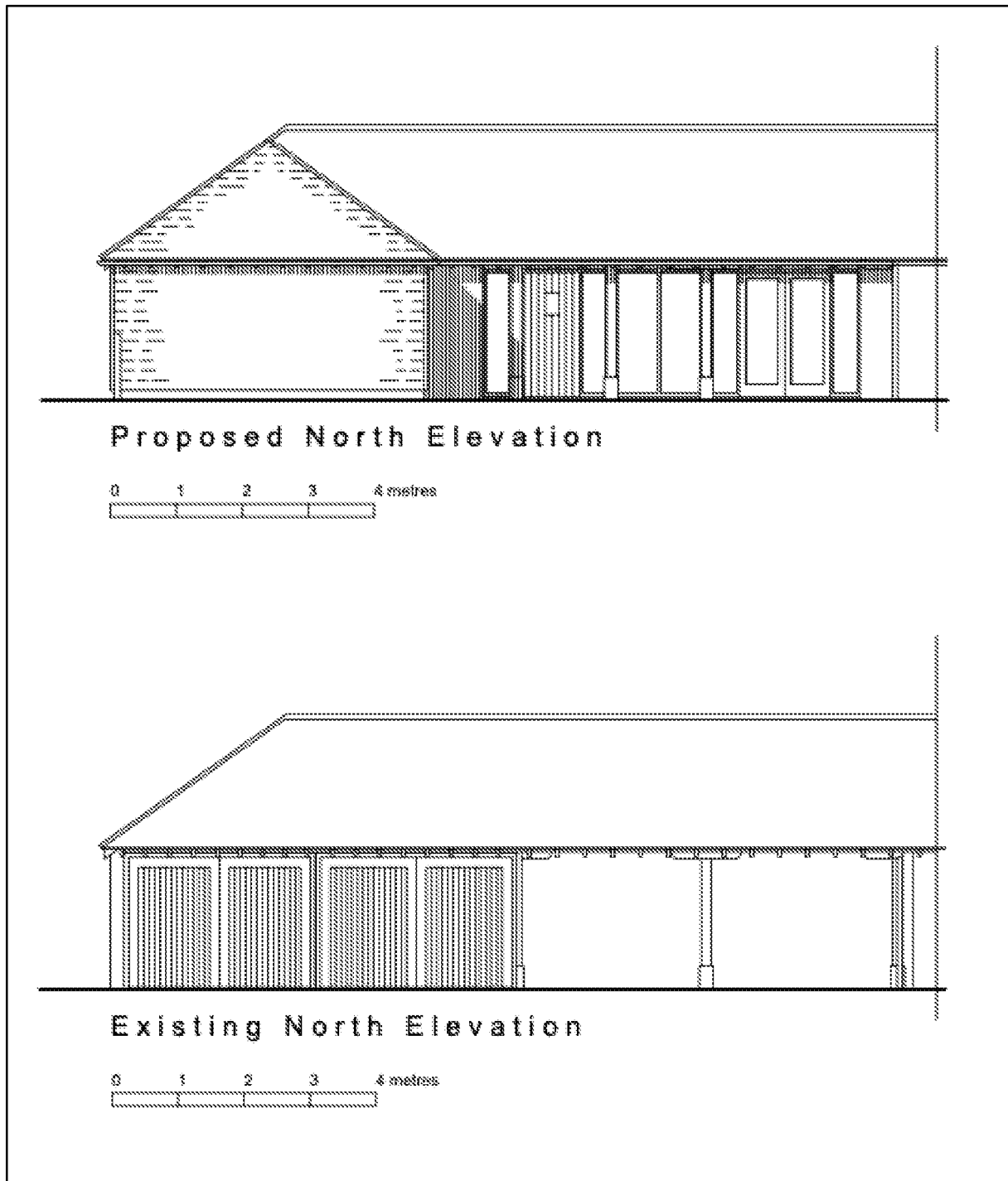


Figure 2. Top – existing northern elevation plan of North Barn Flansham. Bottom – proposed northern elevation plan of the barn (supplied by Architectura Design on 03/02/21).



1.3 Policy and Legislation

Legal protection applying to all bat species in the UK is outlined in Appendix 1 of this report.

The results of this survey will be used to determine the need for further surveys, impact avoidance measures and/or an appropriate mitigation strategy to ensure compliance with UK and EU wildlife legislation.



2 METHODOLOGY

The methodology used for this survey are in accordance with the bat survey guidelines produced by the Bat Conservation Trust².

2.1 Desk Study

The MAGIC website resource (www.magic.gov.uk) was used to identify the location of designated sites for nature conservation within 2km and EPS licences granted within a 1km radius of the survey site. Priority habitats and ancient woodland sites upon or adjacent to the site have also been identified, due to their ecological value and potential to act as important foraging resources for bats.

Priority habitats and Ancient Woodland are classified as habitats of principal importance. Habitats of principal importance are listed in Section 41 of the Natural Environment and Rural Communities (NERC) Act, 2006³, which places a duty on Local Planning Authorities to have due regard to biodiversity.

2.2 Field Survey

2.2.1 Roosting Potential

Bats can use a wide range of features including loft spaces, cavity walls, loose tiles, mortice joints and cracks/gaps in a variety of built structures. They can also be found in trees with holes, splits, cracks, cavities, ivy, and loose bark.

A detailed building inspection was carried out, looking for potential access points and 'potential roosting features (PRFs)' that bats could use and any evidence indicating the presence of bats using the building, such as rub marks, feeding remains, staining or droppings. This included a ground-based internal and external inspection. Gaps which could be safely accessed were inspected for evidence of bats using a video endoscope.

The potential for roosting bats for each feature, or group of features was assessed as either negligible, low, moderate, or high, in accordance with best practice. Any evidence confirming the presence of bats that was found was clearly recorded including photos and samples taken (e.g. droppings) where appropriate. Further surveys were recommended as appropriate.

2.2.2 Foraging and Commuting Suitability

The habitats surrounding the site and wider landscape were broadly assessed for their potential to support foraging and commuting bats.

² Collins, J.(ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn). The Bat Conservation Trust, London.

³ HM Government (2006). Natural Environment and Rural Communities Act 2006. Available online at: <https://www.legislation.gov.uk/ukpga/2006/16/section/41>.



2.3 Other Protected and/or Notable Species

Any birds identified, or evidence of nesting birds discovered during the site visit were recorded. Special attention was paid to notable species such as red-listed Birds of Conservation Concern (Eaton et al. 2015) and those species afforded special protection on Schedule 1 of the Wildlife and Countryside Act (1981).

Whilst this survey focussed on bats and no specific searches were made with respect to other protected species, any evidence of other protected species that was encountered during the site visit was also recorded. This included great crested newts *Triturus cristatus* and reptiles.

3 RESULTS/OBSERVATIONS

3.1 Desk Study and Granted EPS Licences

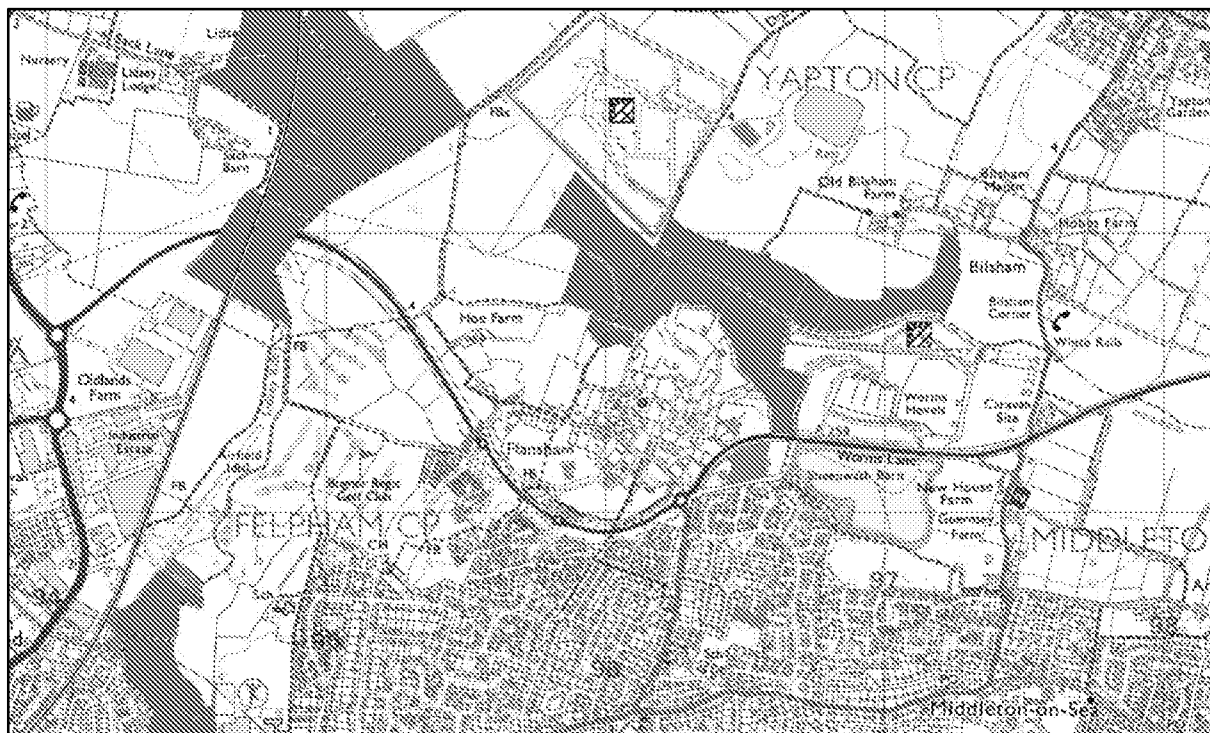
There are no statutory designated sites within 2km of the site.

There are no EPS licences granted for mitigation projects concerning bats within 1km of the site shown on the Magic Maps website

3.2 Site Context and Surrounding Habitats

The barn is immediately surrounded by areas of rough grassland and is set amongst a series of moderate-sized private properties.

Extensive areas of residency extend to the south of the site and consist of rows of dwellings set amongst Bognor Regis' busy network of roads. Open countryside exists approximately 70m north of the site and consists largely of floodplain grazing marsh: fields of grazing pasture with a network of draining ditches (Figure 3). A small isolated copse of woodland exists approximately 575m south-east of the site.



3.3 Building Inspection for Bats

The barn is arranged over a rectangular footprint and is constructed from flint and brick. It is considered that the barn was previously open-fronted, but the northern elevation has been sealed-over using wooden chipboard in the past. A large crack and associated hole were present within the southern wall; this feature has been sealed by chicken wire. The open eaves have also been sealed by chicken wire.

The interior of the barn is disused and is partially divided into two rooms by a wooden divide. The internal space is open to the underside of the roof with an exposed timber frame and an underling of bitumen and hessian felt. No bats or evidence of bats were recorded within the building or in association with its exterior.

Due to the presence of the gaps beneath ridge tiles, the barn is assessed as having 'low' bat roosting potential.



3.3.2 Foraging Potential

The site is considered to be of relatively low value for foraging bats given its size and limited semi-natural habitats. However, given the proximity of the site to open countryside to the north the site is likely to experience commuting activity by a variety of species including common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *P. pygmaeus*, noctule *Nyctalus noctula*, brown long-eared bat *Plecotus auritus* and several species of mouse-eared bats *Myotis* spp. which are known to occur within the locality.

3.4 Other Protected and/or Notable Species

A total of nine inactive swallow *Hirundo rustica* nests were recorded within the barn. However, it is considered that likely that nesting swallows have been excluded from the barn since the boarding-up of its northern elevation and installation of chicken wire across the eaves.

The small area of rough grassland (approximately 0.01ha) to the north of the barn is potentially suitable for amphibians (including the great crested newt) during the terrestrial phase of their lifecycle and reptiles. There are no ponds within or immediately adjacent to the site, however Ordnance Survey mapping of the surroundings indicates the presence of a drainage ditch approximately 70m north-west of the site, which could potentially support breeding great crested newts.

3.5 Survey Limitations

An initial site assessment such as this is only able to act like a 'snapshot' to record any flora or fauna that is present at the time of the survey. It is therefore possible that some species may not have been present during the survey, but may be evident at other times of the year. For this reason, habitats are assessed for their potential to support bats, even where no direct evidence (such as droppings) has been found.



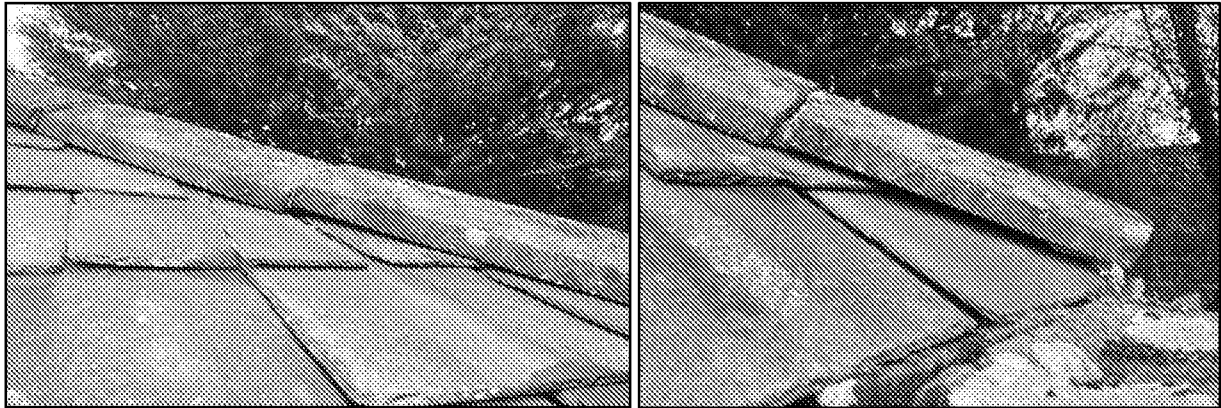
3.6 Photographs



Photograph 1. The northern elevation of North Barn, Flansham.



Photograph 2. The southern elevation of the barn.



Photographs 3a (left) & 3b (right). Gaps at the ridge of the barn roof's south-eastern edge. These gaps were inspected using a video endoscope, with no bats or evidence of bats identified.



Photograph 4. The interior of the barn.



Photograph 5. One of numerous old swallow nests present within the barn.



Photograph 6. The small area of rough grassland located to the north of the barn.



4 ECOLOGICAL CONSTRAINTS AND OPPORTUNITIES

4.1 Bats

4.1.1 Roosting Potential

As per the assessment of the 2016 study, the barn continues to offer 'low' potential for roosting bats in accordance with guidance published by the Bat Conservation Trust². The guidance states that:

"If the structure has been assessed as having low suitability for bats, an ecologist should make a professional judgement on how to proceed based on all of the evidence available"

Given that no bat roosts were identified during the 2016 dawn re-entry survey, and that no bats or evidence of bats were identified during the recent endoscope inspection of the only identified potential roost features, no further dusk emergence/dawn re-entry surveys are recommended.

However, in the absence of a pre-commencement check and careful removal of potential roosting features under supervision there remains a low-level risk for damage/destruction of a roost site and killing/injury/disturbance should bats be in residence at the time of re-roofing works. It is therefore recommended, that prior to the commencement of works to remove the roof tiles, the gaps beneath ridge tiles will require an endoscope inspection by a suitably qualified and licensed ecologist. Should no bats, or evidence of bats be identified, removal of ridge tiles will be undertaken by hand under the direct supervision of the ecologist. In the event a bat is discovered, works will cease immediately and advice will be sought from the ecologist on how to proceed. This will likely require further survey work (e.g bat emergence/re-entry surveys) and an application for an EPS mitigation licence from Natural England to permit any works which would destroy, modify or disturb a bat roost.

4.1.2 Foraging and Commuting Suitability

The site is considered to offer limited foraging habitat for bats; however it is likely that a number of species may move through the site when commuting between roosts within the town to the south and high value foraging habitat within the open countryside to the north.

As the site may be used by foraging and commuting bats, it is important that the potential for disturbance from artificial lights is considered. The proposed development should include an 'ecologically sensitive lighting scheme' in accordance with guidance produced by the Bat Conservation Trust (summarised in Appendix 2).

4.2 Other Protected and/or Notable Species

Since the building has previously supported nesting swallows, construction work upon the building should be timed outside of the nesting bird season (1st March – 31st August). If this is not possible, the building should be subject to nesting bird checks by a suitably qualified ecologist as appropriate to the works. If an active nest is identified, a minimum exclusion zone for all works within 5m radius of the nest must be established to the nest to protect it from disturbance until the young have fledged.



Given the small-scale loss of rough grassland habitat, further surveys with regard to great crested newts and reptiles are not recommended. However, in order to prevent the small risk of killing/injury of these species and in the case of newts: disturbance, reasonable avoidance measures will be adopted. These will incorporate a fingertip search of the grassland for herptiles by a suitably qualified ecologist prior to the commencement of any groundworks. In the event any reptiles are encountered these will be rescued by an ecologist and moved to a location outside of the construction zone. In the unlikely event a great crested newt is identified, works will cease immediately and advice will be sought from the ecologist on how to proceed. This will likely require application for an EPS mitigation licence from Natural England for works to proceed lawfully.

Following the fingertip search the contractors will employ a two-phase strim thereby reducing the suitability for reptiles and amphibians and encourage them to move into adjacent habitats. The two-phase process involves initially strimming grass down to 10cm from ground level to encourage reptiles to migrate away from the construction zone, followed by a second strim of the area where the grass is taken as low as possible to remove any suitable habitat for reptiles. The process must be overseen by a suitably qualified ecologist so that any wildlife which is found can be safely moved into suitable habitat. The area will need to remain cut short until works commence to ensure suitable habitats for herptiles do not re-establish within the construction zone.

4.3 Biodiversity Enhancement Opportunities

The proposed development represents an opportunity for habitat enhancement to benefit insects, birds, and bats. Any planting scheme could include native shrub species and flowering species known to encourage insect diversity. Such enhancement measures are in line with the recommendations of the NPPF and as such would be considered favourably when determining the planning application.

The developer is also encouraged to consider including integral bat roosting opportunities into the building fabric such as bat tiles and internal voids/access points for bats. For example, two bespoke bat tiles could be created at the ridge of the converted barn by siting a ridge tile atop its neighbouring tiles whilst leaving an un-mortared gap beneath.

It is recommended that native trees are planted as part of the landscaping, which will create greater habitat for a variety of birds and invertebrates. Only specimens sourced only from UK stock should be planted. The following species are recommended in this location: wild cherry *Prunus avium*, wayfaring tree *Viburnum lantana*, hawthorn *Crataegus monogyna*, elder *Sambucus nigra*, field maple *Acer campestre*, sea buckthorn *Hippophae rhamnoides*. Given the arrival of ash dieback, it is not recommended that any ash saplings are planted anywhere on the site.

If any protected species are found during the proposed work, work should be stopped immediately, and an ecologist must be contacted immediately for advice.

Should you need any further advice on the information provided above, please do not hesitate to contact The Ecology Co-op.



APPENDIX 1 – Wildlife Legislation and National Planning Policy

The following text is intended for general guidance only and does not constitute comprehensive professional legal advice. It provides a summary of the current legal protection afforded to bats.

All bat species in the UK are included in Schedule II of the Habitats Regulations 2017, which transpose Annex II of the Council Directive 92/43/EEC 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora (“The EC Habitats Directive”). As such all bat species in the UK are defined as ‘European Protected Species (EPS).

Four species of bat (Bechstein’s bat *Myotis bechsteinii*, Barbastelle bat *Barbastella barbastellus*, greater and lesser horseshoe bats, *Rhinolophus ferrumequinum* and *R. hipposideros*) are also listed on Annex IV of the EC Habitats Directive. This requires the designation of a series of sites which contain important populations of these species as Special Areas of Conservation (SACs).

All species of British bat are also fully protected under the Wildlife and Countryside Act (1981), as amended, through inclusion in Schedule V.

All species of bat are listed on Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). Section 41 of the NERC Act lists the habitats and species of principle importance. This places a statutory duty on all public bodies, including planning authorities, under Section 40, to take, or promote the taking by others, steps to further the conservation of habitats and species of principal importance for the conservation of biodiversity in England (commonly referred to as the ‘Biodiversity Duty’). This duty extends to all public bodies the biodiversity duty of Section 74 of the Countryside and Rights of Way (CROW) Act 2000, which placed a duty only on Government and Ministers.

Under the above legislation it is an offence to:

- Kill, injure or take any individual bat of any species;
- possess any part of an individual bat, either alive or dead;
- intentionally or recklessly damage, destroy or obstruct access to any place or structure used by bats for shelter, rest, protection, or breeding;
- intentionally or recklessly disturb these species whilst using any place of shelter or protection; or
- deliberately disturb bats in such a way as to be likely to impair their ability to:
 - survive, to breed or reproduce, to rear or nurture their young; to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong;
- keep (possess), transport, sell or exchange, or offer for sale or exchange, any live or dead bat, or any part of, or anything derived from a bat.

It is also an offence to set and use articles capable of catching, injuring, or killing bats (for example a trap or poison), or knowingly cause or permit such an action. There is also protection under Schedule 6 of The Wildlife and Countryside Act 1981 (as amended) relating specifically to trapping and direct pursuit of bats.

A European Protected Species License (EPSL) in relation to bats is required from Natural England for any work that would result in an otherwise unlawful activity (e.g. damage to a bat roost). A license can



only be issued to permit otherwise prohibited acts if Natural England are satisfied that all the following three tests are met:

- The proposal is for 'preserving public health or public safety, or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment';
- There is no satisfactory alternative; and
- The action authorised by the license will not be detrimental to the maintenance of bat populations at a favourable conservation status in their natural range.

A bat roost is defined by the Bat Conservation Trust's Bat Surveys—Good Practice Guidelines 3rd Edition as "the resting place of a bat". In general, the word roost is interpreted as "any structure or place, which any wild bat uses for shelter or protection."

Bats tend to re-use the same roosts; therefore, legal opinion is guided by recent case law precedents, that a roost is protected, whether or not the bats are present at the time. This includes summer roosts used for resting during the day and/or breeding; or winter roosts, used for hibernating.



APPENDIX 2 – Reducing Impacts of Artificial Light

Bright external lighting can have a detrimental impact upon foraging and commuting bat flight paths, but more importantly can also cause bats to remain in their roosts for longer. Artificial lighting can also cause significant impacts on other nocturnal species, most notably moths and other nocturnal insects. It can also result in disruption of the circadian rhythms of birds, reducing their fitness. Guidelines issued by the Bat Conservation Trust⁴ should be considered while designing the lighting scheme. A simple process which should be followed where the impact on bats is being considered as part of a proposed lighting scheme. It contains techniques which can be used on all sites, whether a small domestic project or larger mixed-use, commercial or infrastructure development. This includes the following measures:

Avoid lighting on key habitats and features altogether

there is no legal duty requiring any place to be lit. British Standards and other policy documents allow for deviation from their own guidance where there are significant ecological/environmental reasons for doing so. It is acknowledged that in certain situations lighting is critical in maintaining safety, such as some industrial sites with 24-hour operation. However, in the public realm, while lighting can increase the perception of safety and security, measurable benefits can be subjective. Consequently, lighting design should be flexible and be able to fully consider the presence of protected species

Apply mitigation methods to reduce lighting to agreed limits in other sensitive locations – lighting design considerations

Where bat habitats and features are considered to be of lower importance or sensitivity to illumination, the need to provide lighting may outweigh the needs of bats. Consequently, a balance between a reduced lighting level appropriate to the ecological importance of each feature and species, and the lighting objectives for that area will need to be achieved. The following are techniques which have been successfully used on projects and are often used in combination for best results;

- Dark buffers, illuminance limits and zonation
- Sensitive site configuration, whereby the location, orientation and height of newly built structures and hard standing can have a considerable impact on light spill
- Consider the design of the light and fittings, whereby the spread of light is minimised ensuring that only the task area is lit. Flat cut-off lanterns or accessories should be used to shield or direct light to where it is required. Consider the height of lighting columns. It should be noted that a lower mounting height is not always better. A lower mounting height can create more light-spill or require more columns. Column height should be carefully considered to balance task and mitigation measures. Consider no lighting solutions where possible such as white lining, good signage, and LED cats eyes. For example, light only high-risk stretches of roads, such as crossings and junctions, allowing headlights to provide any necessary illumination at other times.
- Screening, whereby light spill can be successfully screened through soft landscaping and the installation of walls, fences and bunding
- Glazing treatments, whereby glazing should be restricted or redesigned wherever the ecologist and lighting professional determine there is a likely significant effect upon key bat habitat and features.
- Creation of alternative valuable bat habitat on site, whereby additional or alternative bat flightpaths, commuting habitat or foraging habitat could result in appropriate compensation for

⁴ Bat Conservation Trust and Institute for Lighting Professionals (2018) Guidance note 8. Bats and Artificial Lighting. <https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/>



any such habitat being lost to the development.

- Dimming and part-night lighting. Depending on the pattern of bat activity across the key features identified on site it may be appropriate for an element of on-site lighting to be controlled either diurnally, seasonally or according to human activity. A control management system can be used to dim (typically to 25% or less) or turn off groups of lights when not in use.

Demonstrate compliance with illuminance limits and buffers

- *Design and pre-planning phase*; It may be necessary to demonstrate that the proposed lighting will comply with any agreed light-limitation or screening measures set as a result of your ecologist's recommendations and evaluation. This is especially likely to be requested if planning permission is required.
- *Baseline and post-completion light monitoring surveys*; baseline, pre-development lighting surveys may be useful where existing on or off-site lighting is suspected to be acting on key habitats and features and so may prevent the agreed or modelled illuminance limits being achieved.
- *Post-construction/operational phase compliance-checking*; as a condition of planning, post-completion lighting surveys by a suitably qualified person should be undertaken and a report produced for the local planning authority to confirm compliance. Any form of non-compliance must be clearly reported, and remedial measures outlined. Ongoing monitoring may be necessary, especially for systems with automated lighting/dimming or physical screening solutions.

Further reading:

Buglife (2011) *A review of the impact of artificial light on invertebrates*.

Royal Commission on Environmental Pollution (2009) *Artificial light in the environment*. HMSO, London.
Available at: <https://www.gov.uk/government/publications/artificial-light-in-the-environment>

Rich, C., Longcore, T., Eds. (2005) *Ecological Consequences of Artificial Night Lighting*. Island Press.
ISBN 9781559631297.

CPRE (2014) *Shedding Light: A survey of local authority approaches to lighting in England*. Available at: <http://www.cpre.org.uk/resources/countryside/dark-skies/item/3608-shedding-light>

Planning Practice Guidance guidance (2014) When is light pollution relevant to planning? Available at: <https://www.gov.uk/guidance/light-pollution>

Institution of Lighting Professionals (2011) *Guidance Notes for the Reduction of Obtrusive Light GN01:2011*. Available at: <https://www.theilp.org.uk/resources/free-resources/>