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Bat Scoping Report and Preliminary Ecological Appraisal

Site Name

539 Basingstoke Road, Reading

Issue Date

7th November 2023

Client

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Project No: P6051

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Company number: 8905527





Document Control

Issue No	Author	Reviewer	Issue Date	Additions/alterations	Notes
Original	Owen Crawshaw BSc (Hons), MCIEEM	KP	07.11.23	N/A	

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About the Author

This report has been prepared by Owen Crawshaw, a Senior Ecologist at The Ecology Co-op, with 10 years' experience. He has a Level 2 bat survey licence and has prepared numerous European Protected Species licences for bats. As a Full member of the Chartered Institute for Ecology and Environmental Management (CIEEM) and as Chartered Ecologist through this body, he is bound by their code of professional conduct.

About the Reviewer

This report has been reviewed by Kate Priestman, who is a Principal Ecologist with over twenty years' experience. Kate has undertaken bat survey work and reporting, and prepared European Protected Species licences for numerous schemes. As a Full member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and a Chartered Environmentalist (CEnv), she is bound by CIEEM's code of professional conduct.



Report Summary

Purpose	The Ecology Co-op was commissioned by Mr Simran Luthra to undertake a Bat Scoping Assessment at 539 Basingstoke Road, Reading, further to a proposal to convert the loft space within the dwelling into living space.
Context	The site comprises a single terraced dwelling located within the urban environment of Reading. The local landscape is dominated by extensive areas of residential development and commercial trading, all set within Reading's busy and extensive network of roads.
Key findings	No evidence of bats was recorded within the loft void and the building was assessed as having 'negligible' suitability to support roosting bats.
Recommendations	No further surveys are necessary and this report alone is sufficient to support a planning application. It is recommended that a single new bat roosting feature is installed on the altered dwelling as an enhancement
Further survey requirements	<u>No further surveys are required.</u>



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1 INTRODUCTION

1.1 Purpose of the Report

The Ecology Co-op has been commissioned to undertake a Bat Scoping Assessment of 539 Basingstoke Road, Reading by Mr S. Luthra. This report presents the findings of a walkover survey and building inspection for occupation by bats, undertaken by Owen Crawshaw, BSc (Hons), a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and Natural England Level 2 bat survey class licence holder, on 1st November 2023. Whilst this report has maintained a focus on assessing potential impacts upon roosting bats and bat activity within the proposal's zone of influence, it has also considered the potential for any other protected/notable species and/or habitats to be adversely affected.

The proposal for the site would see conversion of the loft void into additional living space. Recommendations for further surveys that are likely to be required to inform a planning application and Ecological Impact Assessment are provided, if necessary. Where appropriate, measures to avoid, mitigate and/or compensate for significant adverse effects are outlined.

1.2 Background

The site is located at 539 Basingstoke Road, Reading RG2 0SH. The central grid reference for the site is SU 7176 6981.

The site comprises a single terraced dwelling located within the urban environment of the town of Reading. The location of the study building shown in Figure 1.

The proposed development would see conversion of the dwelling's existing loft void into additional living space.



Figure 1. Aerial image showing the location of 539 Basingstoke Road, Reading (outlined in red). Image produced courtesy of Google maps (map data ©2023 Google).

1.3 Policy and Legislation

Legal protection applying to all bat species in the UK and any other species relevant to this appraisal, 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/compensation strategy to ensure compliance with UK wildlife legislation, policy and best practice.

2 METHODOLOGY

The methodologies used for this survey are in accordance with the bat survey guidelines produced by the Bat Conservation Trust¹. Where there has been any deviation from the guidelines due to any site-specific constraints or other circumstances, reasoning and justification has been provided. This survey has also considered the Guidelines for Preliminary Ecological Appraisal produced by CIEEM², where the potential for impacts to protected/notable species, other than bats, has been identified.

¹ Collins, J.(ed.) (2023) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (4th edn). The Bat Conservation Trust, London..

² CIEEM (2017) *Guidelines for Preliminary Ecological Appraisal*, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.



2.1 Desk Study

A search of on-line mapping resources has been undertaken to characterise the local context of the site with respect to semi-natural habitats and linear features of value to foraging and commuting bats.

The MAGIC website resource (www.magic.gov.uk) has been used to identify the location of designated sites for nature conservation within 2km and European Protected Species (EPS) licences granted within a 1km radius of the survey site. Priority habitats and ancient woodland, upon the site and within the proposal's zone of influence, 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 for roosting purposes 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 external inspection and internal inspection of PRFs, such as enclosed loft spaces or roof voids or basements, where safe access was possible. A high-powered torch was used for the internal and external assessment.

The suitability of each feature, or group of features, to support roosting bats has been assessed as either negligible, low, moderate, or high, in accordance with best practice guidance¹ (see Table 1) Any evidence confirming the presence of bats was clearly recorded including photos and samples taken (e.g. droppings), where appropriate. Further surveys have been recommended in accordance with best practice guidance and the surveyor's professional judgement, where evidence of a bat roost or PRFs have been identified that would be adversely impacted by the proposal and where precautionary mitigation alone cannot ensure that bats would not be potentially disturbed or harmed.

Table 1. Guidelines for assessing suitability of structures (buildings) to support bat roosts.

Suitability	Description of roosting habitats
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).
Negligible ^a	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.

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



Suitability	Description of roosting habitats
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions ^b and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity and not a classic cool/stable hibernation site, but could be used by individual hibernating bats ^c).
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions ^b and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. These structures have the potential to support conservation status roosts, e.g. maternity or classic cool/stable hibernation site.
^a Negligible is defined as 'so small or unimportant as to be not worth considering, insignificant'. This category may be used where there are places that a bat could roost or forage (due to one attribute) but is unlikely that the actually would (due to another attribute). ^b For example, in terms of temperature, humidity, height above ground level, light level or levels of disturbance. ^c Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments. Common pipistrelle swarming has been observed in the UK and winter hibernation of numbers of this species has been detected at Seaton Delaval Hall in Northumberland. This phenomenon requires some research in the UK, but ecologists should be aware of the potential for larger numbers of this species to be present during autumn and winter in prominent buildings in the landscape, urban or otherwise.	

2.2.2 Foraging and Commuting Potential

The habitats surrounding the site and within the wider landscape were broadly assessed for their potential to support foraging and commuting bats, and were categorised as negligible, low, moderate or high potential suitability in line with published guidance¹.

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 Concern⁴ and those species afforded special protection on Schedule 1 of the Wildlife and Countryside Act (1981), such as barn owl *Tyto alba*.

Whilst this survey has focussed on bats and no specific searches were made with respect to other protected/notable species, any evidence of such species that was encountered during the site visit was also recorded.

⁴ Stanbury, A., Eaton, M., Aebischer, N., Balmer, N., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. (2021). *Birds of Conservation Concern 5: the status of bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man*. British Birds 114, pp 723-747.



3 RESULTS/OBSERVATIONS

3.1 Desk Study and Granted EPS Licences

There are no designated sites that include bats as a designated feature within the zone of influence of the site.

Woodland is largely absent from the immediate surroundings. Isolated areas of copse are present within the wider environment, the closest of which is located approximately 965m north-east of the site (see Figure 2).

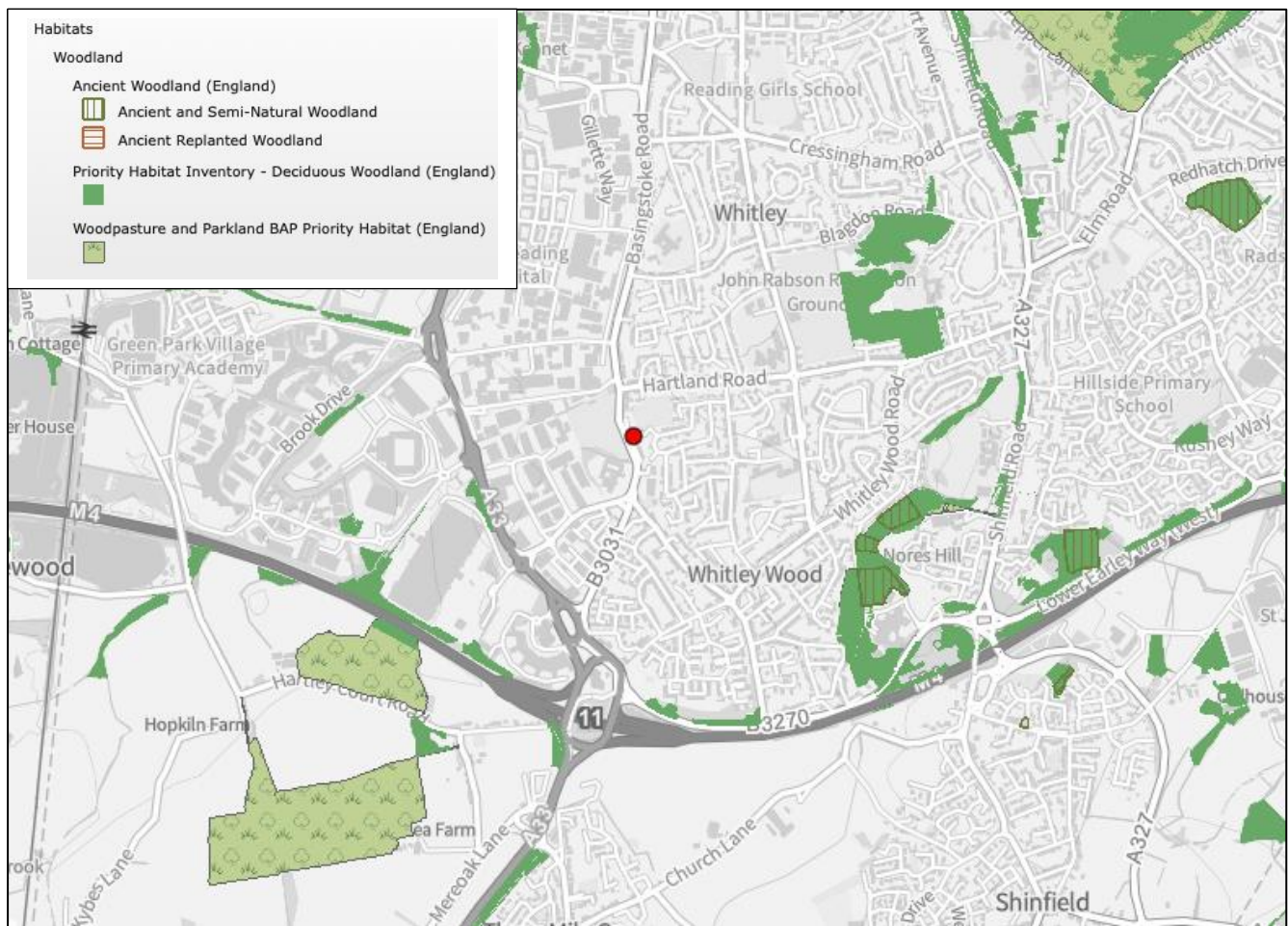


Figure 2. Priority habitats of value to bats relative to 539 Basingstoke Road (shown as a red dot). Image produced courtesy of Magic maps (<http://www.magic.gov.uk/>, contains public sector information licensed under the Open Government Licence v3.0).

There are two EPS licences granted for mitigation projects concerning bats within 1km of the site shown on the Magic Maps website (see Figure 3). Details of the licence are provided in Table 2.

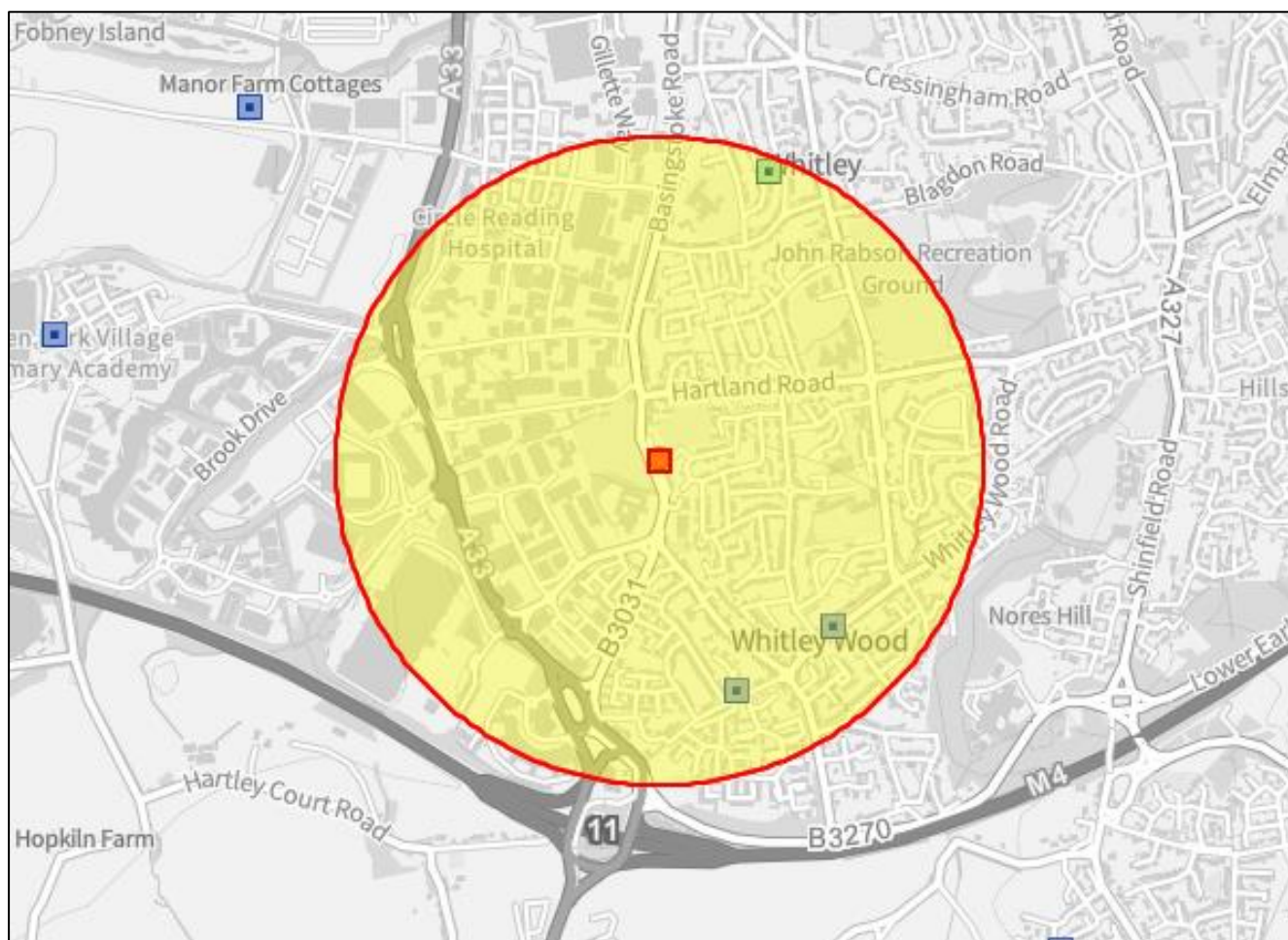


Figure 3. EPS licences within a radius of 1km of the application site (purple indicates EPS licence for bats, green indicates EPS licences for great crested newts). Images produced courtesy of Magic maps (<http://www.magic.gov.uk/>, contains public sector information licensed under the Open Government Licence v3.0).

Table 2. Granted EPS Mitigation Licences within 1km of 539 Basingstoke Road, Reading.

Licence number	Species affected	Licensable period	Impacts permitted	Proximity to site
EPSM2009-1119	Common pipistrelle <i>Pipistrellus pipistrellus</i>	06/10/2009– 31/08/2011	Destruction of a resting place.	710m SE
2015-15933-EPS-BDX	Common pipistrelle	28/09/2015– 31/10/2015	Destruction of a resting place and breeding site.	740m SE
EPSM2010-1708	Great crested newt <i>Triturus cristatus</i>	09/06/2010– 12/06/2012	Destruction of a resting place.	950m NE

3.2 Site Context and Surrounding Habitats

This site is located in an urban setting in Reading. Whitley Wood Recreation Ground exists to the immediate west of the site beyond Basingstoke Road and presents an area of short-sward grassland, used as sports pitches, which are bordered by semi-mature/mature trees. Elsewhere, the local landscape is dominated by extensive areas of residential development and commercial trading all set within Reading's busy and extensive network of roads.



3.3 Inspection for Bats

3.3.1 Roost Potential

No bats or evidence of bats were recorded within the loft void during the inspection, furthermore, no evidence of bats was observed during the external element of the building survey.

The dwelling is arranged over two levels and is constructed from red-brick walls; the upper-section of the south-western elevation displays a facing of pebbledash concrete render. The interior side of the walls, as viewed from within the loft void show a combination of brick work and concrete breezeblocks.

The roof-wall junctions are sealed by modern, plastic, boxed eaves, which contain ventilation grates. The roof is pitched and covered by machine-made clay tiling. The tiles are in a very good state of repair with no slipped or missing tiles and no naturally occurring gaps. The only area of damage noted was a single broken tile on the north-eastern aspect, however given the close-fitting nature of the tiles this is not considered to present a suitable PRF for bats. The roof contains two brick chimney stacks with tightly-fitted lead flashing around their bases. The neighbouring property to the south contains dormer windows within both roof aspects, and these have been fitted with clay hanging tiles which could provide suitable roosting opportunities for bats; however, these exist outside of the study area.

A single loft void exists within the roof space and covers the entire footprint of the dwelling. The void measures approximately 10m (l) x 4.5m (w) x 2.25m (h). The void contains timber rafters, cross beams and struts with a single timber ridge board. An underlining of bitumen roofing felt appears to have been fitted to the underside of the tiling in recent years, having been nailed onto the rafters using timber batten. The lining is loose in areas exposing the tiles above. A significant amount of cobwebbing was recorded beneath the ridge throughout the space. Several hundred rat *Rattus norvegicus* droppings are scattered throughout the void.

Overall, the dwelling is assessed as having 'negligible' suitability for roosting bats.

There are no trees contained within the boundary of the site and tree roosting bats would therefore not be a constraint to development.

3.4 Other Protected and/or Notable Species

No evidence of nesting bird was recorded within the loft void or at the eaves of the building.

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. Bats will commonly roost in small inaccessible crevices, such as spaces underneath ridge tiles that are impossible to inspect during a scoping assessment. For this reason, habitats and features are assessed for their potential to support bats, even where no direct evidence (such as droppings) has been identified.



3.6 Photographs



Photograph 1. The dwelling at 539 Basingstoke Road, Reading, viewed from the south-west.



Photograph 2. The north-eastern elevation of the dwelling.



Photograph 3. The one broken tile observed on the north-eastern aspect of the dwelling's roof.



Photograph 4. The loft space within the roof of the dwelling.



4 ECOLOGICAL CONSTRAINTS AND OPPORTUNITIES

4.1 Bats

4.1.1 Roost Potential

In accordance with the Bat Conservation Trust guidelines, the overall suitability of the building to support bats is rated as 'negligible'. The proposed loft conversion will have no foreseeable impacts on bats or their roost sites. No further surveys are required, and a EPS mitigation licence will not be necessary for the proposed works to proceed.

4.1.2 Foraging and Commuting Suitability

The conversion of the loft space into additional living space will not result in significant impacts on foraging/commuting bats due to the nature of the works and the urban context of the site.

4.2 Other Protected and/or Notable Species

The proposed loft conversion will have no foreseeable impact on nesting birds, or any other protected/notable species.

4.3 Biodiversity Enhancement Opportunities

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, a 2FE Schwegler Wall-Mounted bat shelters could be installed upon the external faces of the building close to the eaves of the building on the southern or eastern face.

If any bats or other protected species are found during the development, work should be stopped immediately, and an ecologist must be contacted 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 Licence (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 to 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 Trust⁵ should be referred to when designing the lighting scheme. Note that lighting designs in very sensitive areas should be created with consultation from an ecologist and using up-to-date bat activity data where possible. The guidance contains techniques that 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 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;
- consideration of 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. Consideration should be given to 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 cat's 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,

⁵ 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/>



commuting habitat or foraging habitat could result in appropriate compensation for 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.

Lighting Fixture Specifications

The Bat Conservation Trust recommends the following specifications for lighting on developments to prevent disturbance:

- lighting spectra: peak wavelength >550nm
- colour temperature: <2700K (warm)
- reduction in light intensity
- minimal UV emitted
- upward light ratio of 0% and good optical control.

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 (2021) Guidance Notes for the Reduction of Obtrusive Light GN01:2011.
Available at: <https://www.theilp.org.uk/resources/free-resources/>

Voigt, C.C., Azam, C., Dekker, J., Ferguson, J., Fritze, M., Gazaryan, S., Hölker, F., Jones, G., Leader, N., Lewanzik, D. and Limpens, H., 2018. *Guidelines for consideration of bats in lighting projects*. Unep/Eurobats.
Available at:
https://cdn.bats.org.uk/uploads/pdf/Resources/EUROBATSGuidelines8_lightpollution.pdf?v=1542109376