



The Ecology Co-op

ENVIRONMENTAL CONSULTANTS

Building B, Lords Wood Barns, Petworth, GU28 9BS

Tel: 01798 861 800 - E-Mail: info@ecologyco-op.co.uk - Web: www.ecologyco-op.co.uk

Bat Emergence Survey Report

78 Havant Road, Emsworth

Author: Owen Crawshaw, BSc (Hons), MCIEEM

Reviewed by: Kate Priestman, MCIEEM, CEnv

2 August 2022

Project No: P4814

The Ecology Co-operation Ltd
Registered Office: Greens Court, West Street, Midhurst, West Sussex, GU29 9NQ
Company number: 8905527



Document Control

Issue No	Author	Reviewer	Issue Date	Additions/alterations	Notes
Original	OC	KP	02/08/22	N/A	

This report has been prepared by The Ecology Co-operation Ltd, with all reasonable skill, care and diligence within the terms of the Contract with the client. This report only becomes the property of the client once payment for it has been received in full.

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.



Report Summary

1. A Preliminary Ecological Appraisal (PEA) of 78 Havant Road, Emsworth was undertaken by Ecosupport Ltd in February 2022. As part of the study, the building was surveyed to look for evidence of roosting bats and to assess its potential to support bats within undetected roost sites.
2. The building was assessed as having 'high' bat roosting potential due to the presence of numerous gaps associated with the exterior of the building; further surveys were recommended.
3. Three bat emergence survey visits were carried out by The Ecology Co-op between June and August 2022 to confirm the presence/likely absence of any bat roosts within the building and to characterise the nature of any identified roosts. The purpose of this survey work was to inform a planning application/European Protected Species licence application for the demolition of the existing building.
4. The results of the bat emergence surveys have confirmed the presence of common pipistrelle *Pipistrellus pipistrellus* and serotine *Eptesicus serotinus* day roosts each used by a single bat.
5. Demolition of the building would result in the destruction of day roosts used by individual common pipistrelle and an individual serotine.
6. Given that significant impacts on bats and their roost sites have been identified, a European Protected Species (bat) Mitigation Licence will be required before works to affect the building can proceed. The licence will need to permit the destruction of two day roosts, used by a common pipistrelle and a serotine. Given that the works will affect two roosts of common species, present in low numbers, the site is considered suitable for registration under the Bat Mitigation Class Licence (BMCL) provided the registered consultant is registered to use the appropriate Annex's of the licence (Annex B & C required).
7. A bat mitigation strategy is set out within this report and includes the following measures:
 - installation of bat boxes on trees;
 - sensitive timing of works;
 - supervision of careful works by an ecologist;
 - incorporation of replacement roosting opportunities within the replacement building
 - sensitive lighting within the developed site.



This report has been prepared by The Ecology Co-operation Ltd, with all reasonable skill, care and diligence within the terms of the Contract with the client. This report only becomes the property of the client once payment for it has been received in full.

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.



CONTENTS

1 INTRODUCTION.....	1
1.1 Background.....	1
1.2 Purpose of the Report.....	1
2 LEGAL PROTECTION	2
2.1 Bats	2
3 METHODOLOGY	2
3.1 Limitations	3
4 RESULTS.....	3
4.1 Survey Conditions.....	3
4.2 Bat Emergence Results	4
• 14th June 2022	4
• 30th June 2022	5
• 1st August 2022.....	5
4.3 Incidental Observation of Other Species.....	5
5 IMPACT ASSESSMENT AND MITIGATION RECOMMENDATIONS	6
5.1 Interpretation of Findings	6
5.2 Potential Impacts	6
5.2.1 Bats.....	6
5.2.2 Other Species.....	7
5.3 Mitigation Measures.....	7
5.3.1 Bats.....	7
5.3.2 Other Species.....	8
APPENDIX 1 – LEGISLATION AND POLICY	10
APPENDIX 2 – REDUCING IMPACTS OF ARTIFICIAL LIGHT	12



1 INTRODUCTION

1.1 Background

The owners of 78 Havant Road, Emsworth intend to submit a planning application for a proposed development that involves the demolition of the existing building and construction of a replacement building on roughly the same footprint. The replacement building will consist of assisted living apartments.

The full address for the site is 78 Havant Road, Emsworth PO10 7LH. The central National Grid Reference for the site is SU 7392 0592. The location of the site is shown in Figure 1.



Figure 1. An aerial image showing the location of 78 Havant Road, Emsworth (outlined in red). Image produced courtesy of Google maps (map data ©2021 Google).

A Preliminary Ecological Appraisal (PEA) of 78 Havant Road, Emsworth was undertaken by Ecosupport Ltd in February 2022. As part of the study, the building was surveyed to look for evidence of roosting bats and to assess its potential to support bats within undetected roost sites.¹

1.2 Purpose of the Report

In accordance with recommendations, bat emergence surveys were carried out by The Ecology Co-op between June and August 2022, led by Owen Crawshaw, BSc (Hons), MCIEEM (Natural England level 2 bat survey class licence holder).

¹ Ecosupport Ltd (2022) *Preliminary Ecological Appraisal – 78 Havant Road, Emsworth*.



The purpose of this survey work was to inform appropriate avoidance, mitigation and/or compensation with regard to roosting bats to inform the planning application for the proposed development at the site.

This survey and report were carried out at the request of Mr M. Bennet.

2 LEGAL PROTECTION

2.1 Bats

Details of legislation and legal protection afforded to all species of British bats are given in Appendix 1.

The results of the survey will be used to determine the need for an appropriate mitigation strategy to ensure compliance with UK and EU wildlife legislation.

3 METHODOLOGY

Three emergence surveys were undertaken on the 14th June, 30th June & 1st July 2022, using the methodology set out in the best practice guidelines prepared by the Bat Conservation Trust.

The surveys focused upon the roof, eaves and hanging tiles of the building, using three surveyors and two infrared cameras positioned according to Figure 2. From these positions, surveyors could see all features potentially suitable for roosting bats that were identified during the initial bat scoping survey.

The surveyors recorded any bat activity on or around the potential roosting entry/exit features identified during the scoping survey, using full spectrum handheld bat detectors to identify species through call frequencies. The bat calls were logged and recorded as sonograms for later confirmation of species where necessary.

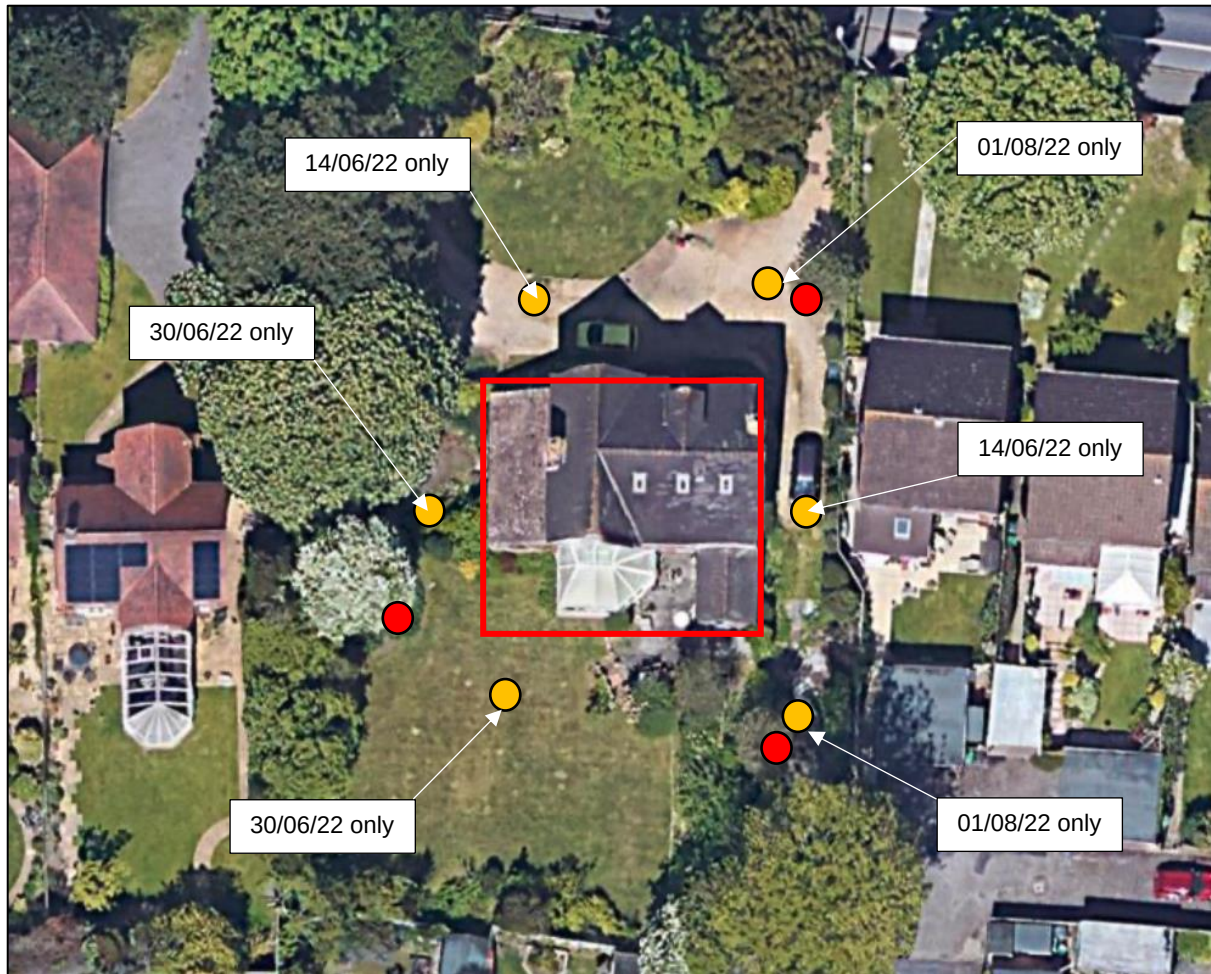


Figure 2. An aerial image of the study building at 78 Havant Road, Emsworth (outlined in red), showing the positions of surveyors (red dots) and infrared cameras (orange dots). Images produced courtesy of Google maps (map data ©2022 Google).

3.1 Limitations

In accordance with best practice guidelines, each survey visit was undertaken during the peak period in bat activity and during good weather conditions. The results presented here are therefore considered to be an accurate representation of the general use of the property by roosting bats.

Nevertheless, bats can use roosting features intermittently throughout the year and may be present in larger or smaller numbers depending on their breeding cycle, weather conditions, and in response to disturbance. These surveys record the emergence of bats at the time of the survey visits and therefore only provide a snapshot of bat roosting activity at the site at that time. Bats may be present at other times and the results should therefore be viewed with caution.

4 RESULTS

4.1 Survey Conditions

The dates, times, weather conditions, temperatures and personnel for each survey visit are presented



in Table 1 below:

Table 1. Details of surveys undertaken, timings, weather conditions and personnel.

Date	Survey start time/end time	Temperature (°C), weather conditions throughout survey	Surveyors
14/06/22	Start: 20:49 Sunset: 21:19 Finish: 22:49	Max/min temperature: 18/16 0% cloud cover, calm (Beaufort Scale 0)	Owen Crawshaw BSc (Hons) MCIEEM Rosie Hopkins MSci Leila Dorey
30/06/22	Start: 20:51 Sunset: 21:21 Finish: 22:51	Max/min temperature: 13 throughout 15% cloud cover, calm (Beaufort Scale 0), rain before survey	Owen Crawshaw BSc (Hons) MCIEEM Rosie Hopkins MSci Sophie Cardinal MSc
01/07/22	Start: 20:19 Sunset: 20:49 Finish: 22:19	Max/min temperature: 21/18 100% cloud cover, light air (Beaufort Scale 1)	Owen Crawshaw BSc (Hons) MCIEEM Lynn Spencer BSc (Hons) ACIEEM Ben Small

4.2 Bat Emergence Results

The following descriptions summarise bat activity and emergence from the building for each survey visit.

- 14th June 2022

A common pipistrelle *Pipistrellus pipistrellus* was seen to emerge from beneath hanging tiles at the southern gable end during the survey. A single serotine *Eptesicus serotinus* was also seen to emerge from the eaves of the western elevation.

Infrequent foraging/commuting passes by common pipistrelle, soprano pipistrelle *Pipistrellus pygmaeus* and serotine were recorded during the survey. Sustained foraging by a soprano pipistrelle was recorded at 22:22, within the rear gardens to the south-east of the building.



Figure 3. Emergence points (circles) and flight lines (arrows) of bats seen to emerge from the building at 78 Havant Road during the emergence survey of 14th June 2022. The common pipistrelle is shown in red, whilst the serotine is shown in purple.

- 30th June 2022

No bats were seen to emerge from the building during the survey

Pipistrelle activity levels were similar to those of the previous surveys with constant foraging by up to two common pipistrelle recorded within the rear gardens to the south of the building. Except for several foraging/commuting passes by soprano pipistrelle, no other bat species were recorded during the survey.

- 1st August 2022

A common pipistrelle was seen to emerge from beneath hanging tiles at the southern gable end during the survey; this is the same location as was seen during the survey of 14th June.

Levels of activity were low throughout the survey with infrequent foraging passes by common pipistrelle and very infrequent commuting passes by a soprano pipistrelle. The surveyor position to the south-east of the building recorded a single pass by a *Myotis* species.

4.3 Incidental Observation of Other Species

An active fox *Vulpes vulpes* has been identified within a flowerbed at the eastern site boundary.



Photograph 1. The active fox den at the eastern site boundary.

5 IMPACT ASSESSMENT AND MITIGATION RECOMMENDATIONS

5.1 Interpretation of Findings

The results of the bat emergence surveys have confirmed the presence of bat roosts within the building at 78 Havant Road, Emsworth. A summary of the identified roost is provided in Table 3.

Table 3. Summary of bat roosts identified within the dwelling at 78 Havant Road, Emsworth.

Species	Location	Peak count	Roost type
Common pipistrelle	Crevice beneath hanging tiles at the southern gable end	1	Day roost
Serotine	Wall/chimney cavity at the western elevation accessed via a gap at the eaves	1	Day roost

5.2 Potential Impacts

5.2.1 Bats

Demolition of the building would result in the destruction of day roosts used by an individual common pipistrelle and an individual serotine. The common pipistrelle is a common and widespread species,



and the roost is subsequently assessed as being of 'low' conservation significance². Day roosts of serotine (which is considered a common species in Hampshire) are also of 'low' conservation significance.

In the absence of mitigation/compensation, loss of the roosts would see a permanent negative impact on common pipistrelle and serotine, which is significant at the site level.

Should bats be present at the time of works, there is the potential for disturbance through noise/vibration, as well as killing/injury should works be undertaken without due care and supervision. Unmitigated this would see a permanent negative impact on the species concerned, significant at the local level.

Table 2. Conservation status and distribution of bats recorded on site³.

Species	Conservation status in England ⁴	Distribution in England
Common pipistrelle	Least concern	Widespread
Serotine	Vulnerable	S England only

Given that significant impacts on bats and their roost sites have been identified, a European Protected Species (bat) Mitigation Licence will be required before works to affect the building can proceed. The licence will need to permit the destruction of two day roosts, used by a common pipistrelle and a serotine. Given that the works will affect two roosts of common species, present in low numbers, the site is considered suitable for registration under the Bat Mitigation Class Licence (BMCL) provided the registered consultant is registered to use the appropriate Annex's of the licence (Annex B & C required).

5.2.2 Other Species

Without the adoption of careful works practices, landscaping works could result in the unnecessary suffering⁵⁶ and killing/injury of foxes and/or their cubs.

5.3 Mitigation Measures

5.3.1 Bats

Mitigation measures that are required to safeguard bats and provide alternative access/roosting opportunities are outlined below:

- **Timing**

The demolition works, which will see the destruction of identified bat roosts, will only be undertaken in the period between mid-March and October (inclusive). Given that no evidence of a maternity colony has been identified, avoidance of the bat breeding season is not considered necessary in this instance. No works which could impact upon bats will be undertaken between November and February (inclusive) as a precaution, in order to avoid impacts on hibernating bats.

² Mitchell-Jones (2004). *Bat Mitigation Guidelines*. English Nature.

³ The Mammal Society (2020). <https://www.mammal.org.uk/science-research/red-list/>

⁴ Natural England (2018). *A Review of the Population and Conservation Status of British Mammals: Technical Summary*

⁵ The Animal Welfare Act. (2006).

⁶ The Wild Mammals (Protection) Act (1996).



- **Installation of bat boxes on a tree**

Prior to the commencement of works, one crevice bat box (Improved Crevice Bat Box or similar available alternatives) and one cavity bat box (Beaumaris Woodstone Bat Box or similar available alternative) will be installed on nearby trees within the landholding of the property. The boxes will be used to house any bats rescued during the pre-commencement check and will remain in perpetuity as an enhancement measure.

- **Preparatory works – ‘soft strip’**

The hanging tiles of the southern gable and the eaves of the western elevation will be carefully dismantled by hand under the direct supervision of a licensed bat ecologist. Any bats encountered during works will be rescued by the ecologist and moved to one of the pre-erected bat boxes. The ecologist will remain on-site until they are satisfied that the building has been made unsuitable for roosting bats.

- **Replacement roosting opportunities**

The new building will incorporate integrated bat roosting features. Two bat tubes (1FR Schwegler Bat Tube or similar available alternative) will be integrated into the southern elevation of the building (Figure 4).



Figure 4. Proposed elevations of the replacement building showing the location of integrated bat tubes. Reproduced courtesy of hrp architects (Drawing No. 8993 05 Rev A). Inset image taken from www.nhbs.co.uk

- **Artificial lighting**

The use of artificial lighting can result in significant disturbance to bats. The detailed design should include a lighting scheme that minimises these impacts by following the Bat Conservation Trust's guidance on lighting, reproduced in Appendix 2 of this report.

5.3.2 Other Species

To avoid the killing/injury of foxes it is recommended that a 'soft dig' of the fox den is undertaken outside of the breeding season (avoiding March – August where possible).

The den will be excavated by machine, under the direction of an ecologist, who will ensure that every tunnel is followed to its terminal point



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



APPENDIX 1 – LEGISLATION AND POLICY

All species of British bat are fully protected under the Wildlife and Countryside Act 1981 as amended through inclusion in Schedule V. All bat species in the UK are also included in Schedule II of the Habitats Regulations 2010 which transpose Annex II of the Council Directive 92/43/EEC 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora ("EC Habitats Directive") which defines European protected species of animals.

Bat species are afforded further protection by the Natural Environment and Rural Communities Act 2006.

Under the above legislation it is an offence to:

- kill, injure or take an individual;
- possess any part of an individual either alive or dead;
- intentionally or recklessly damage, destroy or obstruct access to any place or structure used by these species for shelter, rest, protection or breeding;
- intentionally or recklessly disturb these species whilst using any place of shelter or protection; or
- deliberate disturbance in such a way as to be likely to impair their ability to:
 - survive, to breed or reproduce, or to rear or nurture their young; or
 - in the case of animals of a hibernating or migratory species, 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. In the case all species of British bat there is also protection under Schedule 6 of The Wildlife and Countryside Act 1981 (as amended) relating specifically to trapping and direct pursuit of these species.

The Habitats Directive and Habitats Regulations provide for the derogation from these prohibitions for specific reasons provided certain conditions are met. An EPS licensing regime allows operations that would otherwise be unlawful acts to be carried out lawfully. In England, Natural England is the licensing Authority and, in order to grant a license, ensures that three statutory conditions (sometimes referred to as the 'three derogation tests') are met:

- a licence can be granted for the purposes of "preserving public health or safety or for other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment" (Regulation 53 (2) (e);
- a licence can only be granted if "there are no satisfactory alternatives" to the proposed action;
- a licence shall not be granted unless the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

A bat roost is defined 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 can include all summer roosts,



used for breeding, resting or sheltering and all 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 Trust⁷ 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 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;

⁷ 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/>



- 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 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/EUROBATGuidelines8_lightpollution.pdf?v=1542109376