



BJ Collins
PROTECTED SPECIES SURVEYORS

FOLLOW-UP BAT EMERGENCE SURVEYS
OF
39 MAIN STREET
CARLTON
MARKET BOSWORTH
LEICESTERSHIRE

A report to:

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Client:	Mr & Mrs J Igoe
Report Title:	Follow-up Bat Emergence Surveys of 39 Main Street Carlton

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RELIANCE - The report describes the conditions and ecological features on the site (and possibly its environs) at the time of survey and that this may (is likely to) change over time. Reliance upon the findings of this report should be determined in accordance with the Chartered Institute of Ecology and Environmental Management guidance on the longevity of ecological surveys, see Advice Note (April 2019) *On the Lifespan of Ecological Reports and Surveys* CIEEM.

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SUMMARY

This report has been prepared by BJ Collins – Protected Species Surveyors Limited for Mr and Mrs Igoe of 39 Main Street Carlton. The report provides the results of follow-up emergence and activity surveys following on from the preliminary bat roost assessment and emergence surveys undertaken by this company in August and September 2022.

The 2022 preliminary bat roost assessment located evidence of roosting Long-eared bats within the main attic space of the dwelling, over the original house section. It also found evidence of roosting Pipistrelle bats associated with the two-storey extension.

A single bat emergence survey was carried out at the end of the 2022 peak survey season, in September. The emergence and activity survey found a single bat emerging from the eastern end of the ridge of the traditional house, not echo locating but considered from the experienced ecologist present to be a Brown long-eared bat. This discovery aligned with the extent of evidence within the attic space that the structure supported day roosting bats, or small numbers of two common species.

The development proposal includes for the removal and replacement of the roof over the traditional section of house and an extension on the north elevation. The purpose of this survey was to review and assess the likely ecological impacts of the proposed development to ensure works remain lawful.

This report describes the follow-up emergence and activity surveys carried out in May 2024, to fully inform the status of the building with regards to roosting bats. This survey recorded just a single bat emerging from the roof covering of the building with an individual Common Pipistrelle (*Pipistrellus pipistrellus*) emerging.

This consolidates the conclusion of the 2022 Bat Surveys report. The dwelling supports individual day roosting by two commonly occurring bat species.

Despite this low conservation status, all bat roosts are protected whether the bats are present or not and therefore the development project will require a European Protected Species Derogation Licence in order to remain lawful.

The presence of individual roosting by common bat species qualifies the proposal for registration under the Bat Low Impact Class Licence – CL21.

The application for any EPS licence must be supported with a mitigation strategy which will include actions to protect bats from harm during the works and provide permanent roosting habitat in the long-term in the same or similar location in the final design.

The mitigation strategy for the development proposal is outlined in Section 5.

While the development works will require compensation in the form of habitat provisions as outlined below, there are no constraints to do with timing of works, as the building does not support a maternity roost or a roost of conservation significance.

1. INTRODUCTION

1.1 Background to Commission

BJ Collins Protected Species Surveyors Limited was commissioned by Mr and Mrs Igoe to undertake phase two ecological surveys in relation to the development proposal (and previous bat survey work) for the residential building at 39 Main Street Carlton, hereby referred to as “Site”.

The phase two surveys included two emergence and activity/roost characterisation surveys after evidence of roosting was identified during the previous 2022 survey – detailed in the previous report by this company¹.

1.2 Description of Project

The development proposal includes for the removal of the roof, or part of the roof, to facilitate extensions along the north elevation, and reroofing of the annex.

1.3 Purpose of this Report

The purpose of this report is to review and assess the likely ecological impacts of the proposed development to ensure works remain lawful. Legislation can be found appended (1) to this report.

1.4 Site Description

The survey building has a ridgeline running west to east and is constructed from solid brick and covered with a rosemary tile roof, which is not lined. Attached to the northern elevation of this building are two extensions. Located to the north-east of the dwelling is a single-storey garage. The access to the garage and rear of the property is of brick pavers which form a yard area to the northern side of the building.

The garden of the property comprises an extensive area of grassland surrounded by mature trees and hedgerows which provide connectivity to tree lines and woodland to the north-west. Immediately east of the property is an area of orchard and mature garden which also has connectivity via tree lines to deciduous woodland and water bodies to the south and south-east. The property and the landscape surrounding provides good opportunities for commuting and foraging bats and the village itself provides a range of properties with suitable bat roosting potential.

¹ Bat Surveys 2022 - 39 Main Street Carlton– B J Collins PSS Ltd, Nottingham.



Figure 1: The location of the site, encircled in yellow, in relation to the surrounding landscape, courtesy of Google Earth. North to top of page. Looking for

2. METHODOLOGY

2.1 Desktop Study

The desktop study involved a review of publicly available information including the UK Government's MAGIC² website and Google Earth Pro³.

- The MAGIC database was used to establish the presence of statutory designated sites of nature conservation interest and protected species licences within a 2.5 km radius of the Site.
- Google Earth Pro was used to review recent and historical aerial photography of the Site and surrounding area, and to provide ecological context for the results of the Site assessment.

2.2 Emergence and Activity Surveys

In accordance with the Good Practice Guidelines (Collins 2023), the building was subject to two emergence and activity surveys in the active season of 2024. The surveys were carried out on the 1st and the 22nd of May 2024.

The surveys were completed by deploying two bat ecologists comprising experienced and licensed bat ecologists and assistant bat workers, in order to cover all elevations of the survey building simultaneously. The two surveyors used Anabat Scout full spectrum bat detectors.

Thermal imaging and night vision camera units (NVA's) were utilised alongside the surveyors. These included the Guide IR TrackIR Pro 19 Thermal Imaging Monocular, and the Canon XA20 digital camcorder with night vision recording paired with Dedolight Infrared Floodlighting.

The emergence surveys began 15 minutes prior to sunset and lasted for 105 minutes each.

2.3 Survey Constraints

The surveyors did not encounter any significant constraints upon the survey effort.

2.4 Weather Conditions

Ambient temperature was measured with an ETI Hygro-Therm hygrometer and wind was measured as per the Beaufort scale.

Table 1: Weather data from the emergence and activity surveys.

Date	Sunset/ Sunrise	Temperature (°C)		Cloud Cover (%)		Wind (Beaufort)		Precipitation
		Start	End	Start	End	Start	End	
01/05/2024	20:33	17.3	13.7	100	<20	4	2	None
22/05/2024	21:07	15.1	12.4	100	100	4	4	Light Drizzle

2.5 Personnel

The emergence and activity surveys were led by Mr P A Collins BSc (Hons) (Natural England Class License: 2022-10788-CL18-BAT), assisted by Ms R J Gibbs MSc BSc (Hons).

² Multi-Agency Geographic Information for the Countryside. Available at www.magic.defra.gov.uk/magicmaps.aspx

³ Google Earth Pro 7.3.6.9345

3. RESULTS

3.1 Desktop Study

The desktop study identified one Site of Scientific Interest – Ashby Canal – over 1 km away from the site.

The desktop study also identified two previous granted EPS licences dated between 2010 and 2021. Both licences were for the destruction of resting places for Common Pipistrelles.

3.2 Emergence and Activity Surveys

5.1.1. 1st of May 2024

An individual common pipistrelle bat was observed emerging from the roof frame of the stables at 21:01 hrs.

The table below summarises the other observation results from two surveyors.

Table 2: Summary of results from the first emergence and activity survey on the 2nd of May 2024, inclusive of both surveyor results.

Bat Species	Number of passes	Key Notes and Observations
Common Pipistrelle	52	An emergence at 21:01 hrs
Myotis sp.	1	Foraging over pond in garden

5.1.2. 22nd of May 2024

No emergences were observed during the survey period.

The table below summarises the observation results of the two surveyors.

Table 3: Summary of results from the second emergence and activity survey on the 23rd of May 2024.

Bat Species	Number of passes	Key Notes and Observations
Common Pipistrelle	9	

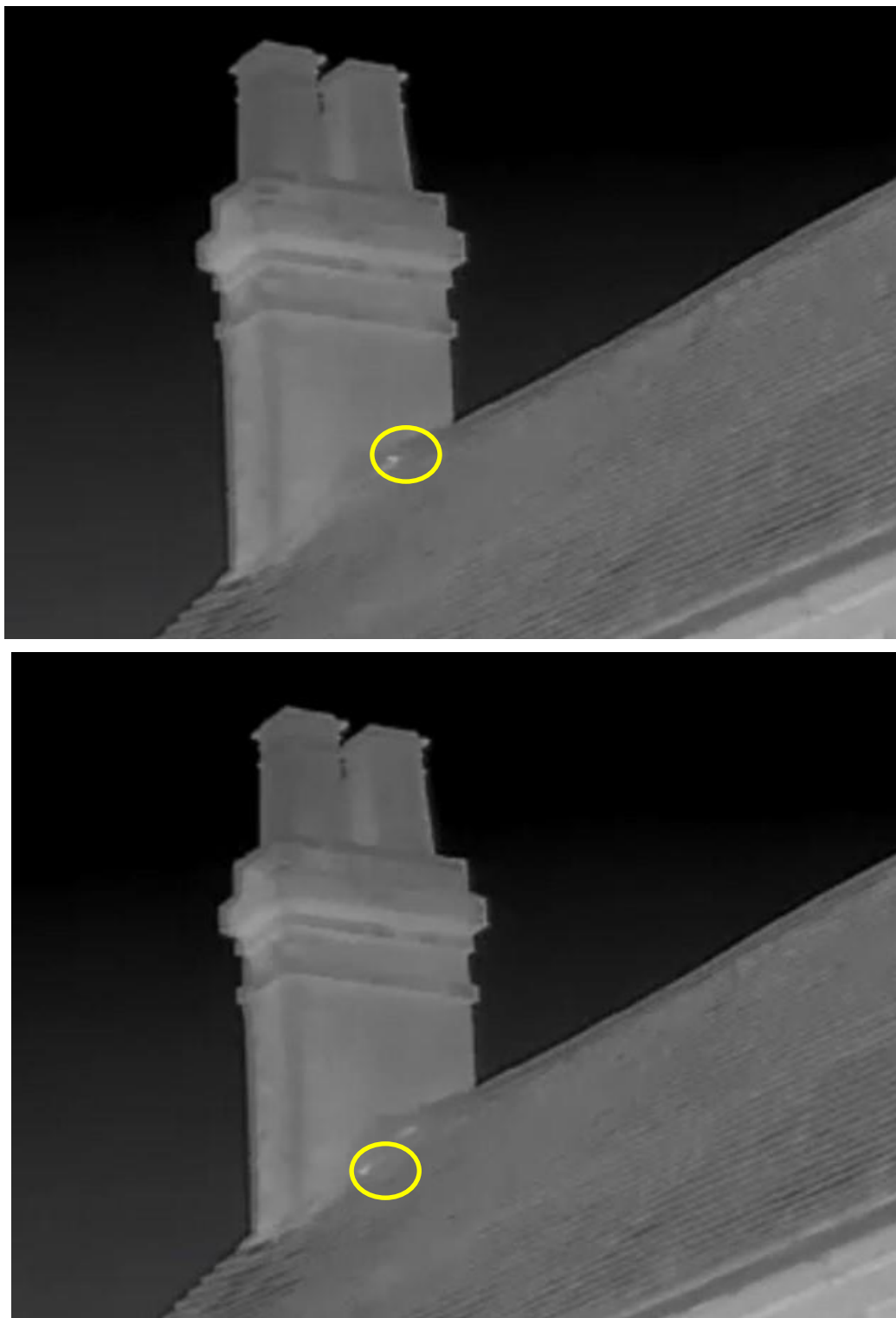


Figure 2 - extract from the thermal imaging recording of the common pipistrelle bat emerging from the structure on 1 May 2024

4. EVALUATIONS AND RECOMMENDATIONS

4.1 Bats

Evaluations

The preliminary bat roost assessment undertaken in August of 2022 found that the attic void contained Brown long eared bat droppings in isolated locations and a small aggregation of Common pipistrelle droppings typical of a day roost was also noted. During the emergence and activity survey carried out on 9th September 2022 the surveyors observed a single bat, identified by visual observation as a Brown long eared bat emerging from the ridge by the eastern chimney.

The 2024 emergence and activity surveys confirmed the roosting of one Common pipistrelle bat under a ridgetile in the main house, with an emergence observed on the 1st of May.

The building therefore contains two day roosts, for a Brown long eared bat and a Common pipistrelle bat

Bats and their roosts are protected under the Conservation of Habitats and Species Regulations 2017 (as amended) and under Schedules 5 & 6 of the Wildlife and Countryside Act 1981 (as amended). See Appendix 1 for further details on legislation.

Recommendations

As the structure contains bat roosts, the redevelopment of the building will require a European Protected Species Derogation Licence in order to remain lawful. The presence of individual roosting by common bat species categorises the roosts as being of “low conservation significance” (Mitchell-Jones 2004) and qualify for registration under the Bat Low Impact Class Licence – CL21.

Full planning consent is required before an EPS licence can be applied for and all conditions relating to wildlife must be formally discharged. The application for any EPS licence must be supported with a mitigation strategy which will include actions to protect bats from harm during the works and provide permanent roosting habitat in the long-term in the same or similar location in the final design.

The mitigation strategy for the development proposals is outlined in Section 5.

While the development works will require compensation in the form of habitat provisions as outlined below, there would be no constraints to do with timing of works. This is because the buildings were not found to support a maternity roost or a roost of conservation significance.

5. BAT MITIGATION STRATEGY

5.2. Summary and Introduction

Please note this is an updated version of the mitigation strategy outlined in the 2022 Bat Surveys report.

The bat surveys carried out in August/September 2022 and May 2024 have together concluded that the building is utilised by individual Brown long-eared and Common pipistrelle bats as day roosts. Therefore, the development will need to be covered by a European protected species derogation license.

An EPS license application must be supported by a mitigation strategy. The fundamentals of the mitigation strategy are to safeguard roosting bats from harm during works and to provide permanent alternative roosting habitat proportionate to the species and roosts identified during the surveys.

The following bat roosts have been identified and the mitigation required is outlined:

- Common pipistrelle roost – an integrated bat tube will be installed into the exterior of the eastern gable wall of the renovated annex.
- Brown long-eared bat day roost – under tile roof boxes will be installed in the same locations as the access points used during the surveys in the original hold section of the dwelling. These roof boxes will be accessed via led bat access tiles.

5.3. Timing of works

The evidence provided by the preliminary bat roost assessment and the emergence and activity survey is that the site supports day roosting bats. As such, extensive research has demonstrated that these animals are able to utilise alternative roost features whilst development work is ongoing. There is therefore no significant constraint to the proposal with regard to timing. Ideally, to avoid any implications with regards to hibernating bats, works to the roof covering over the traditional house should avoid the period of November to April annually.

It is recommended that a planning condition is framed requiring a European protected species derogation license in advance of works impacting upon the existing dwelling. Given the location of bat roosts and the flight lines to and from the building observed there were no constraints identified to the construction of the new dwelling section north of the existing.

5.4. Temporary Bat Roost Habitat

Upon the award of an EPS licence temporary roosting habitat in the form of timber bat boxes will need to be installed on trees outside the area of works. The purpose of these boxes is to provide a temporary roost environment for any bats found during the works and habitat whilst mitigation is being prepared and installed.

Roost features and potential roost features, specifically the roof covering of the traditional dwelling and the two northerly extensions, will need to be removed by hand with care and under the supervision of a licensed bat ecologist. Any bats found will need to be transferred by hand to the timber bat boxes by the licensed bat ecologist.

Permanent roosting habitat will need to be installed within the redeveloped building. Furthermore, safeguards with regards to exterior lighting and roofing membranes will also need to be implemented so that roost entrances and commuting routes remain free from light pollution, and safe for bats to use.

5.5. Permanent Roost Provisions

5.5.1. Common Pipistrelle Day Roost

Like-for-like habitat for pipistrelle bats is required due to evidence during the 2022 Preliminary Bat Roost Assessment and 2024 Emergence Survey that day roosting common pipistrelle utilises the building.

The mitigation design is to install one enclosed bat tube into the western gable of the section where the traditional dwelling stood, and rendered over or faced with the same brick as the existing gable, resulting in a limited aesthetic impact. Different makes and finishes are available from building suppliers and a suitable example is provided within the drawing.

5.5.2. Brown long-eared bat Day Roost

To ensure continuity of habitat for Brown long-eared bats, post development, sufficient to comply with the requirements of the low-impact class license (CL21), there will be two under tile bat boxes, installed between the rafters and flush with the underside of the roof slates/tiles. The access slot into these boxes will be opened up by the installation of lead bat access tiles as per the example within the relevant figure below.

As in all instances, all of the new and replacement roofs will be underlined with a traditional Bitumen type 1F felt with a hessian matrix or with the membrane that has passed the snagging propensity test and has a current certificate from Natural England, the certificate is essential at the time of applying for the license.

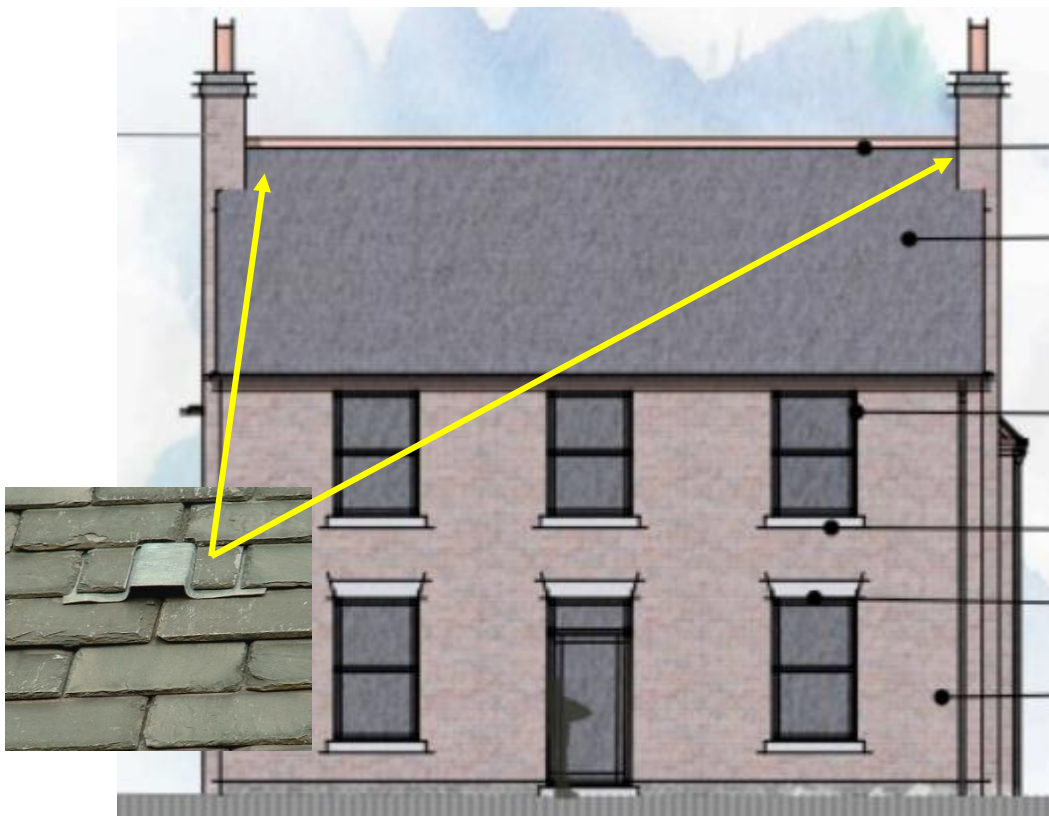


Figure 3a – showing the proposed location for 2 bat tubes under the tiles in the same locations as the bat access points on the original building. The under-tile bat boxes will be accessed via purpose-built lead bat access tiles, approved for use by the bat ecologist.

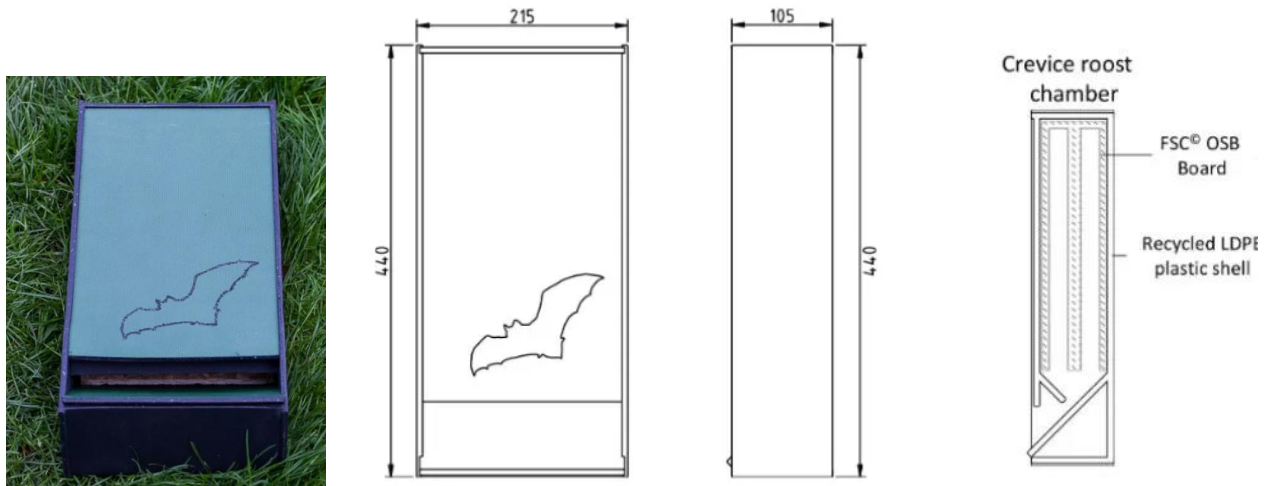


Figure 3b – showing the specification of the Integrated Eco-Bat Boxes - provided by NHBS (and other specialist providers)



Figure 4 - The blue arrow shows the proposed location for the bat tube in the western gable apex of the new build, designed to provide for day roosting common pipistrelle.

5.6. Breathable Roofing Membranes

Scientific investigations (Waring et al., 2013) into bats roosting against breathable roofing membranes have found that bats become entangled in the loose fibres of the membrane resulting in death. The species most commonly affected are the pipistrelle bats which often gain access to the space underneath roof tiles and above the non-bitumen membranes. ALL non bitumen roofing membranes represent a threat to roosting bats in this way, unless these membranes have passed the snagging propensity test and hold a test certificate approved by Natural England.

Therefore, unless the modern breathable membrane comes with a certificate of compliance sufficient to satisfy the licensing officers at Natural England, the roof will have to be underlined with a bitumen based type I felt.

5.7. Light Pollution Control

Exterior lighting has been shown to negatively impact upon emergence times and foraging opportunities for bats thereby reducing their fitness and ability to survive (Stone, Jones & Harris, 2009). It is therefore important that the northern roof elevation of the traditional dwelling, along with the eastern gable of the same building where the bat tube is to be placed, must remain unlit in the hours of darkness to enable bats to safely access and use these features.

The following recommendations for mitigation of artificial lighting have been extracted from the Guidance note 08/18: Bats and Artificial Lighting in the UK produced by the Bat Conservation Trust and Institution of Lighting Professionals (2018).

- Lighting units should use LED which emit a warm white light (less than 2700K) to reduce the blue light component known to attract insects.
- Lighting units should feature peak wavelengths 550nm to avoid the component of light that is most disturbing to bats
- Lighting units should be mounted horizontally as such there is no upward tilt
External security lighting should be motion sensitive on a short timer (1 min)

6. REFERENCES

B J Collins PSS Ltd (2022) **39 Main Street Carlton, Bat Surveys Report 17/10/22**

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

Institution of Lighting Professionals & Bat Conservation Trust (2018) **Guidance note 08/18: Bats and Artificial Lighting in the UK**, Institution of Lighting Professionals, Rugby.

Mitchell-Jones, A.J. (2004) **Bat Mitigation Guidelines**, English Nature, Peterborough.

Stone, E. L., Jones, G., & Harris, S. (2009). **Street lighting disturbs commuting bats**. *Current biology*, 19(13), 1123-1127.

Waring S.D., Essah E.A, Gunnell K., and Bonser R.H.C., (2013) **Double Jeopardy: The Potential for Problems when Bats Interact with Breathable Roofing Membranes in the United Kingdom**. *Architecture & Environment*, 1 (1): 1-13.

APPENDIX 1 – PROTECTED SPECIES LEGISLATION

Bats

All species of British bat and their roosts are protected under British law by the Wildlife and Countryside Act 1981 (as amended), and bats are classified as European Protected Species under the Conservation of Habitats and Species Regulations 2017 ('the 2017 Regulations'). This has recently been amended by the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations (2019) which continue the same provision for European protected species, licensing requirements, and protected areas after Brexit.

The legislation makes it an offence to kill, injure or disturb a bat and/or to damage or destroy a breeding site or resting place for a bat. It is also an offence to disturb the animals such that it impairs their ability to survive, to reproduce, to nurture their young, or such that it impairs their ability to hibernate or migrate. Under this legislation development work that could affect a bat or bat roost can only be permitted under a licence from Natural England.

Licences in respect of European Protected Species affected by development can be granted under Section 55(2) (e) of The Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations (2019), for the purpose of preserving public health or public safety or other imperative reasons of overriding public interest including those of social or economic nature and beneficial consequences of primary importance for the environment.

Under section 55(9) of the Regulations licences can only be issued if Natural England is satisfied that:

- there is no satisfactory alternative to the work specification,
- and the action authorised will not be detrimental to the maintenance of the population of the species at a favourable conservation status in their natural range.

Natural England aim to process EPS licence applications within 35 working days of receipt and Low Impact Class licenses are typically registered within 14 working days of receipt.

Birds

Under the Wildlife and Countryside Act 1981 (as amended), all native birds and their nests, whilst in use, are protected from harm, disturbance or destruction during the breeding season. To avoid conflict, development work that could affect breeding birds should be timed to take place outside of the breeding season, variable between March and September. Note that a nest is protected from the beginning of its construction until the young have fledged and have left the nest.