The Barn, West Chiltington Lane, Billingshurst, West Sussex, RH14 9DP.

Bat Emergence Survey Report



Mike Marriott BSc (Hons)

July 2024

[redacted]

Quality Control

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	Ecologists	Date/s
Survey Ecologist	Mike Marriott BSc (Hons)	Survey date: 21/06/2024
Report Author	Mike Marriott BSc (Hons)	Submission date: 28/07/2024 Revised & Updated: 19/01/2025
Review Author	Scotty Dodd MSc MCIEEM MRES [Class Licence Registration Number 2020-48628-CLS-CLS]	Review date: 31/07/2024 Revised Review Date: 21/01/2025

Report Summary

1. Consultant Ecologist Mike Marriott BSc (Hons), bat licence number 2023-11045-CL18-BAT, was commissioned by Mr and Mrs Shelley hereby known as, 'The Client', to undertake a Phase 1 Preliminary Roost Assessment (PRA) of The Barn in West Chiltington, West Sussex, RH14 9DP. This was required to support a proposed planning application seeking to remove, replace and extend the existing western elevation with a two-storey extension on its existing foundations and an area of adjacent hardstanding. Subsequent to the submission of this report in July 2024 further plans for the existing door canopy to be replaced with an enclosed porch and extension of the ground floor window on the southern elevation have been proposed and this revised and updated report addresses any potential impacts for bats and their roosts pertaining to the additional works to the southern elevation.

2. The Barn was assessed as having High Roosting Potential due to the presence of:

- A single Pipistrelle species of bat found beneath warped weatherboarding on the southern elevation.
- Gaps behind the weatherboarding on three of the four elevations.
- Gaps around the skylight windows on the eastern and western elevations.
- Gaps in the corners of the dormers on the eastern and western elevations.
- Multiple numbers of gaps beneath lifted roof tiles on the eastern, western and southern elevations.

3. Based on the above assessment, and in line with Bat Conservation Trust Guidelines (Collins, 2023), a sequence of three bat emergence surveys were carried out on the 3rd May, 31st May, and the 21st of June 2024 to further determine the presence or absence of roosting bats and evaluate the conservation importance of the site for bats to further inform the planned proposal to extend the western elevation of the property and replace the existing door canopy with a large enclosed porch and further extend the ground floor window on the southern elevation.

4. One Brown Long-eared Bat, *Plecotus auritus* was seen to emerge from the same location where the single Pipistrelle bat, *Pipistrellus sp.* bat was observed during the Preliminary Roost Assessment on the 19th of September 2023.

5. These surveys indicate that roosting bats of two species are utilising the southern elevation of the building in low numbers.

6. The site is utilised by three species of bats for foraging and commuting purposes. General activity around the building was moderate, although suitable foraging and commuting resources are present within the garden as well as the wider landscape surrounding the site including a network of hedgerows and treelines. More extensive woodland blocks containing suitable foraging habitat for bats are situated in all directions, particularly to the east and west. These features and a tree lined railway to the south providing excellent connectivity to the wider landscape.

7. The roost identified during the PRA and the second emergence survey on the southern elevation demonstrates bats may be utilising the feature at any time throughout the bat 'active' season which is approximately between late March to October depending on ambient temperatures. An absence of suitable hibernation features with internal heat radiating from the building throughout the winter months indicates the building is not suitable for hibernating bats.

8. The proposed works on the southern elevation will not damage, obstruct or destroy the roosting location or its entry point situated approximately 40cm below. Construction related activities on the elevation would likely, however, create significant noise, dust and vibrations which would likely reverberate along the weatherboarding across the southern elevation. This would likely disturb any bats utilising the roost hereby deeming the works unlawful without the issuance of a European Protected Species Licence (EPSL).

9. It is essential therefore that for the proposed works to proceed without the need for EPSL, works on the southern elevation must follow a precautionary method of working and must be undertaken during the bat 'inactive' season, namely the hibernation period, in which bats will have relocated to more suitable roosts to overwinter. This will ensure no bats are utilising the feature while construction activities are undertaken on the southern elevation and therefore are completed at an appropriate time of year. The precise timing will be seasonally temperature dependent and should be confirmed by a suitably experienced ecologist with a Class II bat licence, though typically suitable times are between November to early/mid-March.

10. Prior to works on the southern elevation the roost feature should be examined using an endoscope and surrounding weatherboarding inspected with a torch and / or endoscope by a suitably experienced ecologist to ensure that no bats are utilising the roost or adjacent features to confirm their absence. In addition, further precautions including a toolbox talk (TBT) to building contractors detailing precautionary methods of working should be implemented. Further supervision of the initial removal of the existing door canopy and cutting of weatherboarding for the planned porch erection and ground floor window extension should also be included.

11. The identified roost on the southern elevation is situated approximately four metres from the proposed new roof tie-in location creating potential for disturbance if undertaken between March and October, though the area will not be directly impacted by construction activities. Therefore, mitigation measures in the form of supervised precautionary methods of working must be implemented prior to and during construction activities to prevent any disturbance. These include supervision of scaffold assembly by a suitably licenced ecologist so as not to obstruct the roost entrance and toolbox talk to building contractors detailing precautionary methods of working, minimising disturbance from noise, dust and vibration in the vicinity of the known roost features and what to do in the unlikely event that bats, or evidence of bats are discovered during works. The precautionary method of working will include the supervision of the initial removal of weatherboarding, roof and hip tiles across the western elevation and the roof tie in process by the ecologist.

12. In addition, a suitable lighting scheme must be developed at the design phase so as not to expose the known roost location to light spillage. This will ensure that the favourable

conservation status of bats in the local area will not be impacted upon by the development. This is required to fulfil the obligations of the Habitats Directive.

13. As bats are present in the wider area and known to be utilising linear features including the hedgerows along the northern, southern and western boundaries and tree lined eastern boundary, as well as habitat adjacent to The Site for commuting and foraging purposes lighting should be conditioned to prevent severance of bat flight lines and disturbance of feeding sites. Any lighting scheme for the proposed development will need to take into consideration the presence of bats in the local area and the scheme should minimise potential impacts to any bats using the nearby trees, gardens and buildings by avoiding unnecessary interior / exterior artificial light spill through the use of directional light sources and shielding. Bat Conservation Trust (BCT) and Institution of Lighting Professionals (ILP) guidance notes can be downloaded here (BCT & ILP, 2018): https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/.

14. Further mitigation and enhancements to both reduce disturbance on foraging and commuting bats on site within and further enhance The Sites suitability for roosting bats is detailed in the Appendix section.

Introduction

1. Background

In relation to a proposed planning application Consultant Ecologist Mike Marriott BSc (Hons), bat licence number 2023-11045-CL18-BAT, was commissioned by The Client to undertake a Phase 1 PRA of The Barn in Coneyhurst, West Chiltington, West Sussex.

During this assessment a lone Pipistrellus sp. bat was observed on the southern elevation and multiple external potential roost features (PRFs) for bats were identified. Identification features to determine the animal to species level could not be ascertained without disturbance.

The planning proposal for The Site involved the extension of the western elevation through the reconstruction of a two-storey extension on the existing concrete foundations and adjacent hardstanding and the replacement of the existing door canopy with an enclosed porch and extension of the ground floor window on the southern elevation.

Overall, the building was assessed as having High Roosting Potential and in line with Bat Conservation Trust Guidelines (Collins, 2023) a sequence of three Phase 2 bat emergence surveys was required between May - September with at least two undertaken between May and August. All three Phase 2 surveys were undertaken between May and June. These further surveys were undertaken to establish if additional numbers of bats and species were utilising the PRFs identified in the Phase 1 survey, or not.

2. Legislation

Bats are fully protected under the Wildlife and Countryside Act 1981, as amended, and receive additional protection via The Conservation of Species and Habitats Regulations (2017) from intentional killing and injury and from intentional damage, destruction or obstruction of access to a place of shelter. It is an offence to kill or injure a bat or interfere with any roosting or resting site. A bat roost is interpreted as "any structure or place used for shelter or protection" whether or not bats are present at the time or not. Barbastelle, Bechstein's Bat, Noctule, Soprano Pipistrelle, Brown Long-eared Bat, Greater Horseshoe Bat and Lesser Horseshoe Bat are also UK BAP Priority Species.

3. Methodology

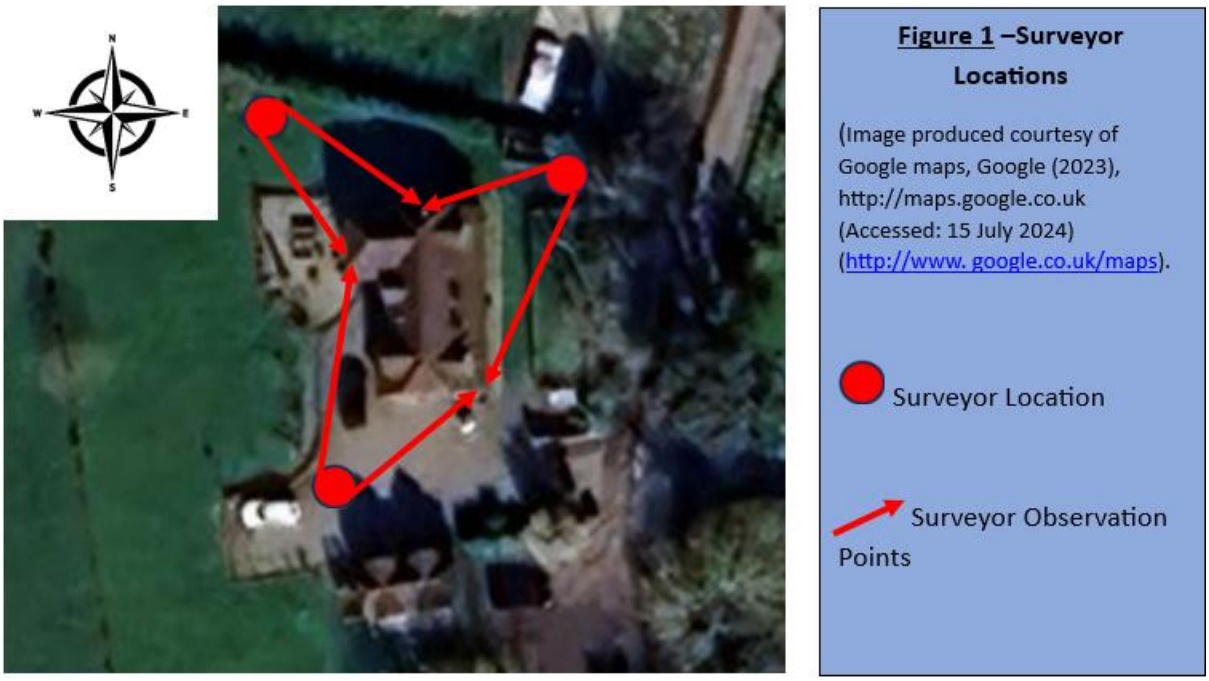
Three emergence surveys were undertaken on the 3rd of May, 31st May and the 21st of June 2024. These surveys focussed on the exterior of the property with a particular focus on the features identifed during the Phase 1 PRA including multiple areas of lifted roof tiles, gaps around skylight windows and dormers, and gaps underneath warped weatherboarding on the southern and western elevations.

Three surveyors were deployed for all three surveys at the surveyor locations idenitified below in Figure 1. The surveyors were equipped with a combination of Canon XA20, Canon XA40 and Canon XA60 infrared camcorders, each equipped with two Nightfox XB5 infrared torches mounted on a combination of Manfrotto Befree tripods and a Manfrotto Element MII tripod to provide additonal visual aid, particularly during periods of low light following sunset.

The surveyors recorded any bat activity on or around The Site using two full spectrum Elekon Batlogger M2's and an Echometer Touch 2 Pro connected to a Samsung smartphone allowing the identification of bat species/genus through call shape and frequencies. The bat calls were logged and recorded as

sonograms by the Batlogger M2 and the smartphone for later confirmation of species where necessary.

Information on bat commuting corridors, flight paths and foraging locations was recorded by the surveyor using a Weatherwriter WA4P/BK A4 Portrait Weatherproof Clipboard with survey sheet and a pencil and a Clulite HL21 headtorch with red light capabilities.



3.1 Limitations

All three surveys were undertaken during the peak period in bat activity and during good weather conditions in line with Bat Conservation Trust Guidelines (Collins, 2023). The results of these surveys are therefore likely to be an accurate representation of the general use of The Site by roosting bats. Though bats can, however, utilise roosts infrequently throughout the year depending on lifecycle, weather conditions and in response to disturbance. The survey data provide a snapshot of bat activity at The Site for just three nights in peak season for the entire year and bats may therefore arguably be present at other times of the year. Given the presence of PRFs likely to be suitable as hibernation roosts The Site may potentially be utilised by hibernating bats. Therefore, additional measures in the form of timing of works mitigation are necessary and detailed in the Appendix section below.

4. Results

4.1 Weather Conditions

The dates, times, weather conditions, temperatures and surveyors present for each survey visit is shown below in Table 1.

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

Date	Survey Timings	Weather Conditions	Surveyors
3rd of May 2024	Start time: 20:13 Sunset: 20:28 Finish time: 21:58	Max/Min temp: 11.2-9.5°C. 40% cloud cover with light breeze (BF1), humidity 67 - 70%, no precipitation.	Mike Marriott Shaun Pryor John Burnham
31st of May 2024	Start time: 20:51 Sunset: 21:07 Finish time: 22:37	Max/Min temp: 13.2-13.3°C. 100% cloud cover and moderate breeze (BF4), humidity 63-55%, no precipitation.	Mike Marriott Shaun Pryor John Burnham
21st of June 2024	Start time: 21:05 Sunset: 21:20 Finish time: 22:50	Max/Min temp: 14.9-14.1°C. 85% cloud cover with moderate breeze (BF4), humidity 54 – 60%, no precipitation.	Mike Marriott Tim Buckland John Burnham

4.2 Survey Results

The following descriptions summarise any bat activity recorded during each survey visit. A detailed table of results is presented in the Appendix section.

3rd of May 2024

Moderate levels of activity throughout the latter half of the survey and predominantly limited to a low number of individual bats including a single Soprano pipistrelle, *Pipistrellus pygmaeus*, and a small number of Common pipistrelles, *Pipistrellus pipistrellus*.

31st May 2024

Low levels of activity from a small number (<3) of Common Pipistrelles and a single passing Soprano Pipistrelle at 21:52. A single Brown Long-eared Bat was seen emerging from beneath a warped weatherboard on the southern elevation at 21:59 and headed behind the building towards the surveyor on the north-east corner of the building where it was spotted headed into the neighbouring field north of the site.

21st June 2024

Moderate levels of activity from a low number of both Common and Soprano Pipistrelles initially with a constant level of foraging activity from 21:15 for the remainder of the survey.

5. Discussions and Recommendations

The survey results for The Barn in West Chiltington indicate that two species of bat are utilising the same gap behind the weatherboarding on the property's southern elevation, as identified in the Phase 1 survey, as a roosting location during the peak of the bat activity season and in optimal weather conditions.

A Pipistrelle sp. was observed behind the weatherboarding during the Phase 1 PRA and a Brown Long-eared Bat was seen emerging from the same location during the second Phase 2 emergence survey on the 31st of May 2024. This area will not be destroyed or damaged by proposed construction activities but could potentially be obstructed by scaffolding or inadvertently disturbed by building

activities, such as noise, dust, vibration and light disturbance, if appropriate mitigation is not implemented a and precautionary method of working not followed. This is especially true of the works that are proposed to take place on the southern elevation. Such measures must therefore include the following:

- Construction activity on any part of the southern elevation must be undertaken at an appropriate time of year during the bat 'inactive' period, typically between November to mid-March. The precise timing of this will be temperature dependent and should be confirmed by a suitably experienced ecologist. Undertaking any of the proposed works on the southern elevation outside of the bat 'inactive' season would likely disturb roosting bats within the feature identified during the initial PRA and second emergence survey and would be deemed unlawful without the issuance of a EPSL.

- The roost location should be examined with an endoscope prior to any construction activity undertaken on the southern elevation and prior to the roof tie-in process. The surrounding weatherboarding should also be inspected using a torch and / or endoscope, as appropriate, by a suitably experienced ecologist to ensure no bats are present within the roost as well as adjacent features identified during the PRA to confirm absence. Furthermore, once absence has been confirmed initial removal of the weatherboarding around the door canopy and ground floor window should be supervised so as not to damage the roost location or entry point which lies approximately 2-3m from the canopy.

- Prior to all works a toolbox talk (TBT) for building contractors along with a description of the precautionary method of working with regards to noise, vibration, dust and light spillage should be undertaken by the ecologist.

- Ecological supervision from a suitably experienced ecologist with a Class II bat licence pertaining to the erection of scaffold and the stripping of tiles and weather boarding across all elevations is essential. This will ensure it leaves the roost location completely free from obstruction as well as ensure a suitably experienced ecologist will be present if, in the unlikely event, any bats or evidence of bats is discovered. In this event works can be stopped immediately while a European Protected Species Licence is obtained from the relevant licensing authority.

General bat activity on site was moderate from a low number of bats while the neighbouring landscape at The Site was utilised as a commuting corridor and occasional foraging location.

The emergence/roosting location of the Pipistrelle sp. and Brown Long-eared Bat was situated within approximately four metres of where the tie in location between the southern and western roofs is situated. This therefore creates potential for disturbance to any roosting bats within the roost through noise, dust and vibration if undertaken between March and October, though the area will not be directly impacted by construction activities. It is recommended that the tie in process be supervised by a suitably experience ecologist at all times therefore.

Away from the tie in location, construction related activities on the western elevation are unlikely to affect roosting bats within the feature identified during the PRA and second emergence survey provided appropriate precautionary methods of working are implemented. These include supervision of scaffold assembly by a suitably licenced ecologist so as not to obstruct the roost entrance as well as a tool box talk (TBT) to building contractors with regards to precautionary methods of working, minimising disturbance from noise, dust and vibration in the vicinity of the known roost features and

what to do in the unlikely event that bats or evidence of bats are discovered during works. The precautionary method of working will include the supervision of the initial removal of weatherboarding, roof and hip tiles across the western elevation in addition to the roof tie in process by the ecologist.

Given that the hedgerows along the northern, southern and western boundaries of the property and trees along the eastern boundary are utilised by commuting and foraging bats, disturbance on these important commuting corridors as well as on site from intrusive building related activities should be eliminated/reduced using the following mitigation:

- The implementation of unnecessary artificial lighting will likely create significant disturbance to the commuting and foraging activity identified in the surveys. **It is unlawful to disturb bats anywhere including flight lines and foraging areas.** Therefore, detailed design should include a lighting scheme that minimises these impacts on The Site, particularly the southern elevation, by following the Bat Conservation Trust's guidance on lighting, a brief overview of which is reproduced in the Appendix of this report. In addition, construction related lighting should be switched off overnight.

Overall bat activity across The Site was moderate. Given the suitability of the surrounding habitat for both foraging and commuting bats and The Site's location approximately 8.1km from The Mens Special Area of Conservation (SAC), an area known to host Barbastelle bats, *Barbastella barbastellus*, it is possible that additional roosting opportunities created within the newly constructed extension will enhance The Site for roosting bats. Therefore, the following mitigation and further enhancements are advised:

- Construction materials implemented into the new extension should utilise bat friendly alternatives including bituminous roofing felt that does not contain polypropylene filaments. Examples of bat friendly roof lining include bitumen felt type 1F, which is hessian reinforced. This should be installed into the new extension to enhance the building's suitability for roosting bats. Combined with artificial roost features listed below in the Appendix this will improve the building's suitability for roosting bats.

- The new western extension will include a combination of brick and weatherboard materials. These offer suitable opportunities to further utilise bat friendly products including the installation of artificial bat roosts, examples of which are included in Appendix 2 below.

- Two artificial bat boxes suitable for both species of bats utilising the property are recommended to be purchased and installed within the trees on the eastern site boundary as a site enhancement. They should be installed using aluminium nails between 3.5 – 6 metres in height and south or southwest facing if possible. They should be placed in an unobstructed area free from foliage. Suitable examples of bat boxes for crevice dwelling and void dwelling species of bat are shown in the Appendix section below. Installed appropriately bat boxes and artificial roost features can provide supplementary roosts to any missed during the surveys as well as enhance the building's roosting suitability. The Vincent bat box also has the added advantage of being suitable for Barbastelle bats.

While much of the habitat to the west of the property comprises horse grazed pasture which provides some potential foraging opportunities for bats, further opportunities to enhance The Site for foraging and commuting bats exist through the planting of trees and shrubs within the surrounding garden and along the southern boundary fence line. This will further enhance The Site for bats and other species including birds and insects.

Appendix 1 - Legislation

Bats are fully protected under the Wildlife and Countryside Act 1981, as amended, and receive additional protection via The Conservation of Species and Habitats Regulations (2017) from intentional killing and injury and from intentional damage, destruction or obstruction of access to a place of shelter.

Annex II of the Council Directive 92/43EEC 1992 on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) lists animal and plant species of Community interest, the conservation of which requires the designation of Special Areas of Conservation (SACs); Annex IV lists animal and plant species of Community interest in need of strict protection. All bat species are listed in Annex IV; greater and lesser horseshoe bats, barbastelle and Bechstein's bat are also listed in Annex II.

Under the protection afforded mentioned above it is unlawful to kill, capture, injure or take a wild bat anywhere in the UK. It is also unlawful to disturb bats anywhere (roosts, flight lines or foraging areas) in particular if the level of disturbance can be shown to impair their ability to survive, to breed or reproduce, to rear or nurture their young, to hibernate or migrate or to affect significantly local distribution or abundance. In England the offences mentioned in this paragraph requires a deliberate action.

In England it is also an offence under the Wildlife and Countryside Act to intentionally or recklessly disturb a bat, whilst it is occupying a place of shelter or protection.

Throughout the UK it is illegal to damage or destroy a place used by a bat for breeding or resting. This offence is unique in that it can be committed accidentally. No element of intentional, reckless or deliberate action needs to be evidenced.

In England it is an offence under the Wildlife and Countryside Act to intentionally or recklessly obstruct access to any place by a bat for shelter or protection.

Under the Habitat Regulations it is an offence to be in possession or control of a bat alive or dead (or any part of a bat or anything derived from a bat, save droppings, or to transport a bat to sell or exchange a bat or to offer to sell or exchange a bat taken from the wild.

It is an offence under the Wildlife and Countryside Act in England to offer or expose for sale any bat of a species listed in Schedule 5 and taken from the wild or to possess any bat or anything derived from a bat for the purposes of sale. It is also an offence to publish or cause to be published any advertisement offering to buy or sell a bat.

Those found guilty of offences relating to bats can be sentenced to six month's imprisonment and fined. Recent legislation in England has removed the maximum amount of fine that can be imposed, and courts in England now have the power to impose unlimited fines.

Appendix 2 – Examples of Artificial Bat Boxes and Roost Features





Figure 2 above - From left to right, the Schwegler General Purpose 2F and a Vincent Pro bat box. These boxes are easy to maintain and designed with durability in mind. The **2F** is manufactured from woodcrete, a mixture of concrete, wood and clay which will not rot, leak, crack or warp and last for at least 20 – 25 years. The Vincent is a highly effective bat box proven with at least 7 species: Barbastelle, Leisler's, Common pipistrelle, Soprano pipistrelle, Brown long-eared, Natterer's and Whiskered (confirmed) and possibly Brandt's and requires little maintenance.





Figure 3 above – Left to right, Heritage clay hanging tile and brick bat box. Heritage hanging tiles contain a raised opening that enables crevice dwelling bats to crawl underneath and utilise the space between roof tiles and battens. Brick bat boxes comprise small openings providing access into a chamber above providing suitable roosts for bats species that utilise voids including Brown long-eared bats.

Appendix 3 – Emergence Survey Results

Table 2. Surveyor records of bat activity from visit 1 on 3rd of May 2024.

Time	Species	Activity	Location and Additional Information
20:16	Common Pipistrelle	Foraging	Heard not seen, distant calls.
20:58	Common Pipistrelle	Pass	Heard not seen.
21:01	Soprano Pipistrelle	Foraging	Heard not seen.
21:12	Common Pipistrelle	Foraging	Heard and seen around The Barn and gardens. Activity continued sporadically until 21:41

Table 3. Surveyor records of bat activity from visit 2 on 31st May 2024.

Time	Species	Activity	Location and Additional Information
21:29	Common Pipistrelle	Pass	Heard not seen.
21:47	Common Pipistrelle	Pass	Heard not seen, more persistent calls.
21:52	Soprano Pipistrelle	Brief pass	Heard not seen, loud calls.
21:59	Brown long-eared	Emergence	Seen leaving from underneath area of weatherboarding on southern elevation.

Table 4. Surveyor records of bat activity from visit 3 on 21st June 2024.

Time	Species	Activity	Location and Additional Information
21:59	Common Pipistrelle	Pass	Heard not seen.
22:07	Common Pipistrelle	Pass	Heard not seen, more persistent calls.
22:12	Soprano Pipistrelle	Brief pass	Heard not seen.
21:15	Common Pipistrelle	Foraging	Heard and seen around The Barn and gardens. Near constant activity throughout the remainder of the survey.

Appendix 4 – Reducing Impacts from Artificial Lightning

Studies have estimated that in 2016 more than 80% of the world population and more than 99% of the U.S. and European population live under light-polluted skies. Worldwide this is up from 66% in 2001, or an increase of more than 14%. Light-polluted skies are defined as being about 10% higher than normal night sky brightness levels. This means that only about a fifth of England now has 'pristine night skies' – that is skies completely free from light pollution. Concerns about the impacts of this have been expressed for a long time, both in reference to human and ecosystem health. For bats, artificial lighting is thought to increase the chances of predation, and therefore bats may modify their behaviour to respond to this threat. Many avian predators will hunt bats which may be one reason why bats avoid flying in the day.

Illuminating a bat roost can cause significant disturbance and this may result in the bats deserting the roost or even becoming entombed within it. Light falling on a roost access point will at least delay bats from emerging and this shortens the amount of time available to them for foraging. As the main peak of nocturnal insect abundance occurs at and soon after dusk, a delay in emergence means this vital time for feeding is missed. This has been shown to have direct impacts on bats' reproductive ecology, such as slower growth rates and starvation of young. In addition, the associated flightpath to and from the access point is just as valuable and vulnerable as the roost itself. Severing a key flightpath some distance from the roost could cause desertion in its own right.

In addition to causing disturbance to bats at the roost, artificial lighting can also affect the feeding behaviour of bats. There are two aspects to this. One is the attraction that light from certain types of light sources has to a range of insects; the other is the presence of lit conditions posing a barrier to movement. Many night-flying species of insect are attracted to light, especially those light sources that emit an ultraviolet component or have a high blue spectral content. This is particularly a problem if it is a single light source in a dark area. As well as moths, a range of other insects can be attracted to light such as craneflies, midges and lacewings.

When considering how bats move through the landscape, artificial lighting has been shown to be particularly harmful if used along river corridors, near woodland edges and near hedgerows. In mainland Europe, in areas where there are foraging or commuting bats, stretches of road are left unlit or lighting is designed in such a way as to avoid bat colonies being cut off from their foraging grounds. Studies have shown that continuous lighting in the landscape, such as along roads or waterways, creates barriers which many bat species cannot cross, especially the slower-flying species even at very low light levels.

Lesser horseshoe bats have been shown to move their flight paths which link their roosts and foraging grounds to avoid artificial light installed on their usual commuting route. Significant impacts have been recorded from as low as 3.6 lux. Furthermore, the average light level on hedgerows most regularly used by this species has been recorded at 0.45 lux. Even bat species that have been shown to opportunistically forage in lit conditions have subsequently been recorded being impacted by artificial lighting. In our cities, for example, common pipistrelles – the UK's most numerous species – have been recorded avoiding gaps that are well lit, thereby creating a barrier effect.

Given the presence of roosting bats on the southern elevation and both commuting and foraging bats recorded on site, an ill-considered lightning layout could be deemed unlawful if it is having a detrimental effect on the bats that utilise the site. Therefore, it will be necessary to demonstrate that the proposed lighting will comply with any agreed light-limitation or screening measures advised by the ecologist's recommendations and evaluation.

Appendix 5 – Night Vision Aid Photographs





References

CIEEM, (2011) Competencies for species survey guidance documents.

CIEEM, (2011) Professional Guidance Series 10: Guidance on metadata Standards: Reporting, sharing, and archiving ecological data.

CIEEM, (2011) Professional Guidance Series No 9: Guidance for Ecological Report writing.

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