

BAT EMERGENCE SURVEY

BARNS AT PRIMROSE COTTAGE, HAREFIELD, GREATER LONDON



Commissioned by: **SDH Ltd**

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EXECUTIVE SUMMARY

1. A total of three bat species were recorded within the application site at the Barns at Primrose Cottage during this updated bat emergence survey in 2022 and this included common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*) and noctule (*Nyctalus noctula*).
2. A single common pipistrelle emerged from a rear window at the north most barn and then over the menage area to the tree line on the first bat dusk survey visit.
3. There are several bat roost types at the barns, as now shown by this bat survey and the previous internal inspection of the barns during the ecology survey.
4. The barns are being used as a daytime roost for both brown long-eared bats and for common pipistrelle. The barns are still being used as a night based feeding roost for brown long-eared bats, given the widespread feeding remains.
5. The tree line next to the menage area was well used again by bats both as commuting corridors and for foraging purposes, including around the trees.
6. A European Protected Species Mitigation Licence (EPS) (under the 2019 Regulations) for Bats in respect of development will be required from Natural England to permit the loss of the bat roosts during the future barn conversion works, as bats are fully protected by UK and European law.
7. Natural England will require suitable high quality mitigation measures and compensation to be put in place in order to prevent the loss of roosting bats at the overall site as a result of the development works eg the use of high quality bat boxes and a dedicated bat loft.

1. INTRODUCTION

- A Bat Emergence Survey at the Barns at Primrose Cottage, Hill End Road, Harefield, south of Rickmansworth, LB Hillingdon, Greater London UB9 6LH, was undertaken during Spring/Summer 2022, for the client: SDH Ltd.
- The grid reference for the application site is: TQ045917.
- This new bat dusk survey had been requested due to the proposal to convert the barns into separate dwellings and is an updated study to that undertaken by ASW Ecology Ltd in 2019 and April 2022. The stables and office buildings were also assessed during this new investigation.
- The main method used for this bat emergence survey, as well as the full results and the key recommendations can be found within this report.
- Both this follow-up bat survey and the report were undertaken and compiled by Mr Andrew S. Waller, Consultant Ecologist, ASW Ecology, with the kind help from assistants.
- Mr Andrew S. Waller MSc BSc (Hons) MCIEEM, Director of ASW Ecology Ltd - has been a Consultant Ecologist since 1997, and has very extensive experience and knowledge of protected wildlife species including bats, for which he is fully licensed to survey throughout England by Natural England for consultancy purposes (Bat Class 2 Licence Registration Number: 2015-15703-CLS-CLS). He also has Natural England survey licences for great crested newts and barn owls. He has been studying bats for 29 years and wildlife in general for 40 years. He is a Full Member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and meets the requirements of being a Suitably Qualified Ecologist.

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2. METHODOLOGY

2.1 Bat emergence survey method

- During May to July 2022, a follow-up Bat Emergence Survey was undertaken at the barns and stables next to Primrose Cottage.
- Three bat emergence survey visits were undertaken at these barns and stables, because it was already known that a bat roost was present within some of these structures.
- A total of four experienced bat surveyors using mainly Bat Box Duet bat detectors and Echo Meter Touch bat detectors were present during the three bat survey visits. The main aim was to determine the range of bat species present; the location of any roosts during the survey period; and the presence of any key foraging areas and bat commuting routes.
- Night vision aids (NVA), mounted on tripods, mainly a SiOnyx Aurora night digital camera, a Nightfox RED IR camera and a Nightfox Vulpes IR camera were used on the key features at the barns, so to ensure that they were all covered robustly for this survey and following current best practice guidance.
- The main aim was to determine the range of bat species present; the presence of any current bat roosts within the buildings during the survey period; and the presence of any key foraging areas and bat commuting routes.
- The dusk based visits were undertaken in suitable weather conditions only, so there was the best chance of finding any possible emerging bats. The dusk visits started before sunset and lasted for up to 2 hours after sunset.
- All results from this bat survey can be found in the next chapter of this report and a map showing any bat sightings are shown in Appendix 2.

2.2 Survey constraints

- Due to the timing of this bat survey, only the Spring and Summer period could be covered. This is a standard constraint for any bat survey which can only investigate part of any year.
- The June to August period is important to bats, since this is when maternity roosts are present and young bats will be born. Large roosts are sometimes present within structures, and can be very visible during bat emergence surveys. This survey was commissioned when such roosts will have formed, with bats being very active, so was timed at the key period of the year for bats.
- As always though, without taking into account any further active surveying or monitoring, this study can only provide a “snapshot” of the presence of bats at the site during the period of this study.
- Please also note that any bat survey report is valid for one year only, as stated in the BCT bat survey guidelines (BCT, 2016).

3. BAT SURVEY RESULTS

3.1 Bat emergence survey – Barns at Primrose Cottage

Bat emergence survey - visit 1 – 12/5/2022

Sunset time: 8.43pm

Weather: dry, mild, light breeze & clear (2/8CC)

Windspeed (max): 5mph

Inverts present: mosquitoes (lots)

Temp (sunset): 14°C

RH: 56%

Bat Species	Time Noted	Location
Common Pipistrelle	9.14pm	Emerged from the rear open window of the barn and over menage area. ROOST
Noctule	9.17pm	Over site
Common Pipistrelle	9.19pm	Near stables
Common Pipistrelle	9.20pm	Near stables
Soprano Pipistrelle	9.26pm	Heard near trees
Soprano Pipistrelle	9.34pm to 9.40pm	Near field edge
Soprano Pipistrelle	9.40pm	Near rear trees
Noctule	9.42pm	Over area
Soprano Pipistrelle	9.47pm	Near field edge
Soprano Pipistrelle	9.51pm	Rear tree line
Soprano Pipistrelle	9.51pm	Near field edge
Noctule	9.53pm	Over area

Common Pipistrelle	9.54pm	Over east part of barn
Noctule	9.56pm	Over site
Common Pipistrelle	10.01pm	Near trees. No further bat contacts after this time to the end of the survey visit

Bat emergence survey - visit 2 – 20/6/2022

Sunset time: 9.23pm

Weather: dry, warm, calm & clear (1/8CC)

Temp (sunset): 18°C

Windspeed (max): 0mph

RH: 54%

Inverts present: small flies, moths, chafer beetles and mosquitoes

Bat Species	Time Noted	Location
Soprano Pipistrelle	9.56pm	Flew near rear of stables
Common Pipistrelle	9.58pm	Rear trees
Soprano Pipistrelle	9.59pm	Rear of menage area
Soprano Pipistrelle	10.01pm	Near stables
Common Pipistrelle	10.02pm	Rear of menage area
Soprano Pipistrelle	10.02pm and 10.09pm	Trees nearby
Soprano Pipistrelle	10.08pm	Near stables
Common Pipistrelle	10.10pm	Menage area side
Soprano Pipistrelle	10.14pm	Circled around stables
Soprano Pipistrelle	10.12pm	At menage side
Soprano Pipistrelle	10.16pm to 10.20pm	Along rear tree line
Common Pipistrelle	10.18pm	Near stables
Soprano Pipistrelle	10.20pm	Near barn
Common Pipistrelle	10.22pm	Along rear trees

Common Pipistrelle	10.23pm	Over the barn
Soprano Pipistrelle	10.24pm	Near trees
Common Pipistrelle	10.29pm	Rear trees
Common Pipistrelle	10.31pm	Rear tree line
Soprano Pipistrelle	10.40pm and 10.46pm	Near stables
Common Pipistrelle	10.43pm	Near stables
Common Pipistrelle	10.53pm	Near entrance. No further bat activity at the site to the end of the survey period

Bat emergence survey - visit 3 – 18/7/2022

Sunset time: 9.10pm

Weather: dry, very warm, light wind & clear sky (0/8CC)

Temp (sunset): 31°C

Windspeed (max): 2mph

RH: 27%

Inverts present: flies, moths, spiders, mosquitoes

Bat Species	Time Noted	Location
Soprano Pipistrelle	9.47pm	Along the rear tree line
Soprano Pipistrelle	9.48pm	Flew near tree line
Noctule	9.54pm	Over site
Soprano Pipistrelle	9.54pm to 10.30pm	Along tree line
Soprano Pipistrelle	10.03pm and 10.07pm	Near side of rear barn
Soprano Pipistrelle	10.08pm	Entered rear barn through side door and fed inside then left barn
Noctule	10.09pm	Over site
Soprano Pipistrelle	10.11pm and 10.13pm	Near barns
Soprano Pipistrelle	10.16pm to 10.18pm	Rear tree line - feeding
Soprano Pipistrelle	10.20pm and 10.22pm	Near barns
Common Pipistrelle	10.26pm	Near barns
Soprano Pipistrelle	10.30pm	Near stables

Soprano Pipistrelle	9.33pm	Near stables. No further bats after this time to end of survey visit
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4. CONCLUSIONS

4.1 Significance of the bat emergence survey results

- In summary, a total of three bat species were recorded within the application site at the Barns at Primrose Cottage in 2022 and this included common pipistrelle, soprano pipistrelle and noctule.
- A single common pipistrelle emerged from a rear window at the north most barn and then over the menage area to the tree line on the first bat dusk survey visit.
- There are several bat roost types at the barns, as now shown by this bat survey and the previous internal inspection of the barns during the ecology survey.
- The barns are being used as a daytime roost for both brown long-eared bats and for common pipistrelle. The barns are still being used as a night based feeding roost for brown long-eared bats, given the widespread feeding remains.
- The tree line next to the menage area was well used again by bats both as commuting corridors and for foraging purposes, including around the trees.
- A European Protected Species Mitigation Licence (EPS) (under the 2019 Regulations) for Bats in respect of development will be required from Natural England to permit the loss of the bat roosts during the future barn conversion works, as bats are fully protected by UK and European law.
- Natural England will require suitable high quality mitigation measures and compensation to be put in place in order to prevent the loss of roosting bats at the overall site as a result of the development works eg the use of high quality bat boxes and a dedicated bat loft.
- Please see the next chapter of this report, for the recommendations in regards to further information on the stated bat licence needed before work can begin, as well as details on the proposed bat mitigation and compensation strategy.

4.2 Impact assessment

In the absence of any mitigation measures or precautions, the following direct or indirect impacts from the proposed barn conversion works on bats at this site would be predicted as:

- **DIRECT:** Bat roosts are still present within the existing barns at the application site. There would be a high negative impact therefore to the two bat species present due to the damage and complete loss of the barn roosting niches internally. There would be a risk of bats being disturbed, without mitigation, and possibly injured if works were done with no mitigation present. However, mitigation will of course be used so this risk will be reduced to a minimum. **Impact magnitude predicted: HIGH**
- **INDIRECT:** Since no bat foraging habitat or commuting routes are to be impacted, without mitigation, there is a no risk of the loss of high quality bat related habitat or fragmentation of the local bat population due to the works. There could be some less choice for bats for roost buildings during the period of the building works but this will be compensated for by the use of high quality bat boxes. **Impact magnitude predicted: LOW/MODERATE**

4.3 Summary of the legal protection of bats in the UK (Simplified summary only of the legislation – please see other texts for full details)

4.3.1 THE LEGAL PROTECTION OF BATS IN ENGLAND AND WALES

Introduction

All species of bats in England and Wales are protected by law. Their legal protection derives from two sources:

- the strict species protection provisions of the EU Habitats Directive as implemented in England and Wales by Part 3 of the Conservation of Habitats and Species Regulations 2017 (the “**2017 Regulations, amended by the 2019 Regulations due to Britain leaving the EU**”); and
- Part 1 of the Wildlife and Countryside Act 1981 (as amended).

Conservation of Habitats and Species Regulations 2017 (“2017 Regulations”, as amended by the 2019 Regulations)

The 2017 Regulations came into force on 30th November 2017, amended by the 2019 Regulations. They replace the previously applicable regulations (Conservation (Natural Habitats, &c) Regulations 1994 and the 2010 Regulations) in relation to England and Wales. The 2017 Regulations are the principal means by which the EU Habitats Directive is transposed in England and Wales.

The Regulations contain a number of Parts which set out the protection to be afforded to “European Protected Species” (“EPS”), which includes all species of British bats. The list also includes other species which are rare on a European scale, such as great crested newts, otters and dormice.

Under the 2017 Regulations both bats themselves and their “breeding sites and resting places” (most commonly their roosts) are protected.

It is a criminal offence to do the following (note that this is not an exhaustive list of all offences but rather a list of offences which will be of most relevance to developers):

- a. to damage or destroy a breeding site or resting place of a bat (even if bats are not present at the time);
- b. to deliberately capture, injure or kill a wild bat;
- c. to intentionally or recklessly disturb a bat in its roost or to deliberately disturb a group of bats, in particular:
 - i. any disturbance of bats which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young; or
 - ii. any disturbance of bats which is likely to impair their ability to hibernate or migrate; or

- iii. any disturbance of bats which is likely to affect significantly the local distribution or abundance of the species to which they belong;
- d. to have in one's possession or to control or to transport or to sell or exchange or offer to sell or exchange any live or dead bat or part of a bat which has been taken from the wild; or any part of, or anything derived from, a bat or any part of a bat; and
- e. to intentionally or recklessly obstruct access to a bat roost.

The maximum penalty that can be imposed for the above offences is (as at May 2010) a fine of up to £5,000, and/or up to six months imprisonment. The offences can be committed by individuals or by bodies corporate. Where a body corporate has committed the offence, the directors or officers of the company may also be prosecuted if the offence has been committed with their consent or connivance, or is attributable to their neglect.

Wildlife and Countryside Act 1981 ("WCA 1981")

The WCA 1981 protects a wide range of animals, plants and habitats in the UK. All British bat species are afforded protection under Part 1 of the WCA 1981, in addition to the protection they have under the 2019 Regulations.

As regards England and Wales the following offences apply to protect bats under the W&CA 1981:

- a. to intentionally or recklessly disturb any bat while it is occupying a structure of place which it uses for shelter or protection (s9(4)(b) WCA 1981);
- b. to intentionally or recklessly obstruct access to any structure or place which any bat uses for shelter or protection (s9(4)© WCA 1981);
- c. attempting either of the above (s18(1) WCA 1981).

The maximum penalty that can be imposed for the above offences is (as at May 2010) a fine of up to £5,000, and/or up to six months imprisonment. The offences can be committed by individuals or by bodies corporate. Where a body corporate has committed the offence, the directors or officers of that company may also be prosecuted if the offence has been committed with their consent or connivance or is attributable to their neglect (s69(1) WCA 1981).

5. RECOMMENDATIONS

5.1 Bat EPS Mitigation Licence requirement

- **A European Protected Species Mitigation Licence (EPS) (under the 2019 Regulations) for Bats in respect of development** will be required from Natural England to permit the predicted disturbance, damage and loss of bat roosts, during the proposed barn conversion works, as bats are fully protected by UK and European law. **It will be proposed that the licence is required for “overriding public interest”, that there is indeed no satisfactory alternative to what is being proposed and that the stated works will not be detrimental to maintaining the bat species present at a Favourable Conservation Status. This will all be fully justified in the future Reasoned Statement.**
- The Wildlife Licensing Unit of Natural England is the appropriate authority for determining licence applications for works associated with development such as building/demolition related works, barn conversions, reroofing works, culvert removal/repair and tree felling where bat roosts are present.
- Natural England will have to be satisfied that the local bat populations will not be detrimentally affected by the building work. Consequently, they will require suitable mitigation measures to be put in place in order to prevent the complete loss of the bat roosts at the overall property as a result of the planned works.
- The EPS licence forms include five separate parts: an Application Form, Method Statement, Reasoned Statement, Work Schedule and Supporting Documents. The applicant e.g. the client will be the licence holder, supported by the licensed bat consultant being used.
- For the prompt processing of the licence application, it is always advised that the client ensure that the planning position in respect to their proposal has been resolved in advance of submitting the licence application and all mitigation options agreed on. In exceptional circumstances, it may be possible to submit an application whilst planning permission is being sought, but this is highly unusual. **Planning consent is therefore required before the Bats EPS Mitigation Licence is applied for.**
- Bat EPS Mitigation Licence applications are stated to be processed within thirty days by Natural England, although it could be faster than this, or slower, should further information be required by the Wildlife Advisor.
- The client will need to consult an experienced licensed bat consultant for advice on how to proceed with the required Natural England Bats EPS Mitigation Licence application, as it is clear that the future outlined works would trigger offences under the law, and such offences cannot be avoided by the timing of such works when bats are not present e.g. the hypothetical scenario where no bats are to be disturbed, no roost is to be damaged or lost and with no bat roost access points obstructed.

5.2 Bat Impact Mitigation and Compensation Scheme

- The main mitigation and compensation scheme is detailed below in regards to the bat roosts present at the Barns at Primrose Cottage, so the future building related works are to proceed under the proposed Bats EPS Mitigation Licence. The scheme below will compensate bats during the stated works and that they will not be without available roosting sites during these works. The aim will be to provide a net gain in the number of roosting sites available for the bats, but critically provide like-for-like mitigation which is the key aspect, and this will all be stated in the Bats EPS Licence Method Statement.

5.2.1 Provision of Schwegler woodcrete bat boxes

- **Installation of 6x Schwegler 2F Bat Boxes on mature trees at the property** - Bat boxes will be used by various bat species, and these high quality bat boxes would need to be installed in suitable high locations facing appropriate aspects, close to clutter, so to have a chance of success. The mature trees at the northern treeline, next to the menage area are ideal for these boxes. Common pipistrelle as well as other bat species will use these bat boxes for roosting purposes, and are appropriate mitigation for the small sized roost present. Six such boxes can be installed, which will be secure and undamaged during all of the proposed works eg the bat boxes to compensate for the bat roost location at the barn complex and for the loss of potential roosting niches. This number of high quality bat boxes will provide a range of bat roosting sites which will be available during the period of the works and afterwards.
- The bat boxes can be located on separate trees eg one per tree ideally, so there is a better chance of them being used by bats, or onto buildings.
- Bat boxes should be installed at least six metres up a tree trunk, facing mainly South-east or South-west and with enough space for bats to fly under the box easily. Although one bat box should be facing North or West so this will provide additional microclimates for bats. No artificial lighting must illuminate any of the installed bat boxes as this would deter bats from using the boxes.
- The NHBS is a good ecological equipment supplier and this bat box model can be purchased from them. The web link for this bat box is:

<http://www.nhbs.com/title/158629/2f-schwegler-bat-box-general-purpose>

5.2.2 Provision of dedicated bat loft in office building roof

- **Construction of 1x bat loft within existing roof void at the office building to south of the barn complex** – A new roof void compartment will be constructed within the existing office building and will only be used for the bats to roost within, with no human access other than an inspection hatch for monitoring by a licensed bat ecologist. The roof void should ideally be about 2.8 metres high, with a width and length as close to 5 metres as possible, so bats can fly within the void. Access will need to be made in the bitumen roofing felt so bats can access via special bat access tiles. It may also be possible to “seed” the new roof void with brown long-eared droppings from the existing barn. This may encourage bats to use the bat loft although it is unclear if this will increase the chances of this or not.

5.3 Timing of the future building works

- Usually, late summer/early autumn e.g. September/October or early spring e.g. April/early May, are ideally the best times to work on such buildings, as this avoids the main bat breeding season as well as the bat hibernation period.
- It will be important that the building works are ideally undertaken when the bats are not present at the barns, if that is possible.
- This will then reduce any risk of bats being injured or killed by accident during any of the proposed works, which will be the critical objective of the mitigation works.

5.4 Post development bat monitoring

- This post development monitoring is not compulsory for a more common species such as common pipistrelle and brown long-eared bat, and with roosts of lower nature conservation significance.
- However, it is still recommended that some optional monitoring is still kindly permitted by the client so to ensure that the bat boxes and bat loft are being used by bats or have the best chance of being utilised in the near future.
- For the type of roost present and the compensation, between one to three dusk based bat survey visits can be undertaken at the site in the year after development has ended.
- Even just one single bat dusk monitoring visit would prove invaluable. This monitoring would be inexpensive and would be highly useful in determining if the stated compensation measures have been successful or not.

5.5 Best practice guidelines – bats and development works

- Within the future Bats EPS Mitigation Licence method statement to be written, it will be stated that it will be necessary to undertake a final re-check of the barns with the bat roosts, after the licence is gained from Natural England.
- If for any reason, an injured bat or grounded bat is found during any of the barn conversion works then this will need to be rescued by the Licensed Bat Consultant and very carefully, using suitable gloves and cloth bags, moved to the new bat boxes nearby.
- A bat watch brief with a licensed bat consultant present on-site can be used during the most sensitive works by the building contractors. A toolbox talk from the ecologist about the bat roost and what actions are not permitted can also be utilised at the start of the licensed works.
- **The main objective of the above, is to do all possible to ensure that no bats are injured or killed at all during the proposed building works. And to ensure that the local bat populations at the site remain at a Favourable Conservation Status.**

6. REFERENCES

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- (6) Entwistle, A.C. et al (2001) *Habitat Management for Bats*. JNCC, UK.
- (7) Mitchell-Jones, A.J. (2004) *Bat Mitigation Guidelines*. English Nature.
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- (9) Treweek, J. (1999) *Ecological Impact Assessment*. Blackwell Science Ltd, UK

APPENDIX 1:

Photograph A

(This photo is dated 18/7/2022)

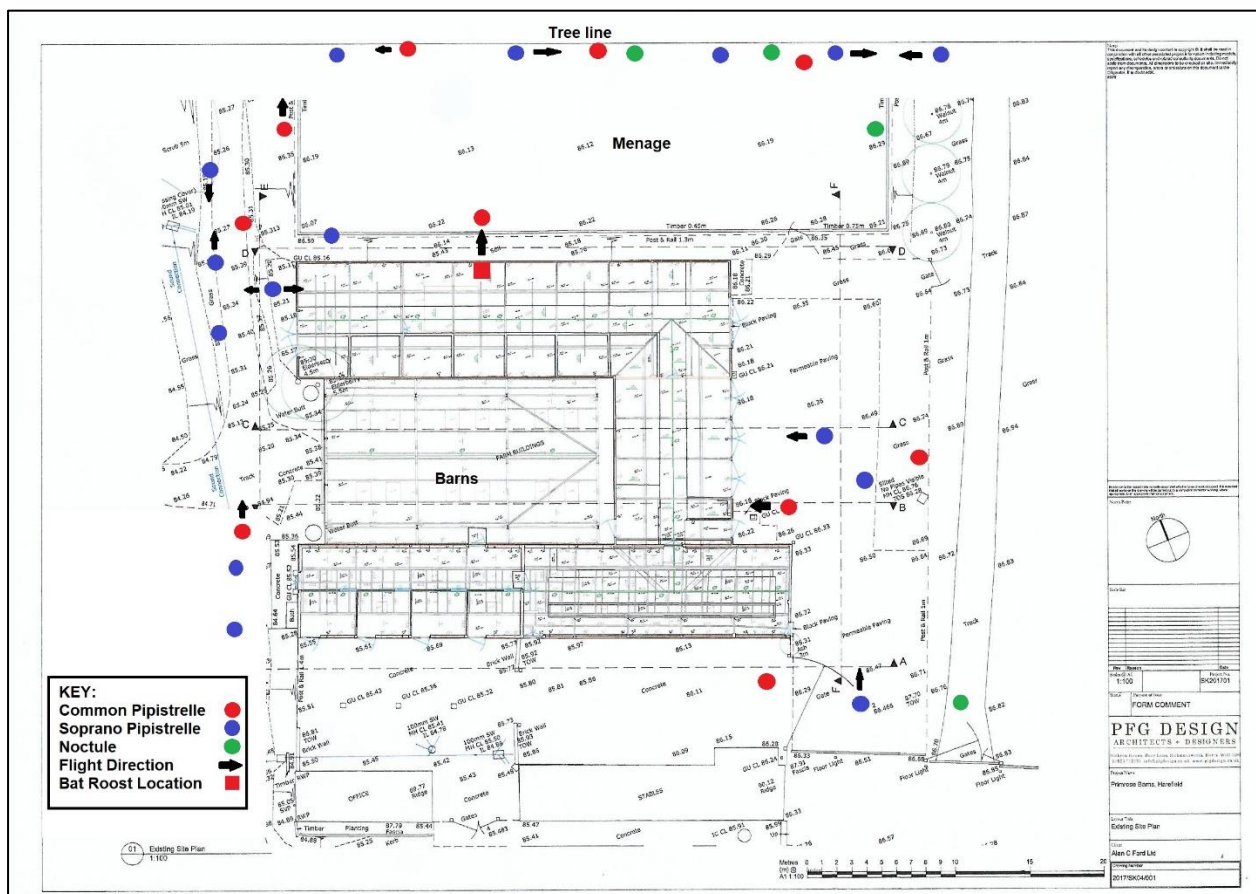


Photograph A

Example photograph using a night vision aid (NVA) of the north most barn rear, where a common pipistrelle emerged from the open window – this picture was taken with the Nightfox Vulpes IR digital night vision camera, mounted on a tripod

APPENDIX 2:

Map A – Location of the bat sightings/roosts at the application site - 2022



APPENDIX 3

Selected sonograms for the bat emergence survey at the Barns at Primrose Cottage - 2022

Figure 1 – Bat sonogram of a Common Pipistrelle – commuting near the barns

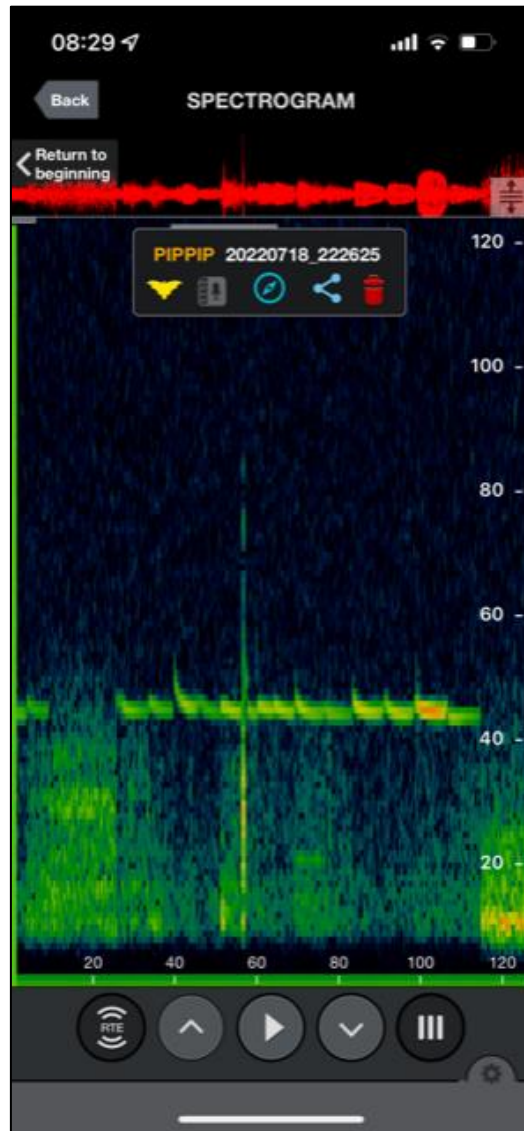


Figure 2 – Bat sonogram of a Soprano Pipistrelle – foraging close to the barns

