



ecosupport



Phase II Bat Surveys & Mitigation Strategy

Brighstone, Botley Road, Horton Heath

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Client:

Alderbury Homes Ltd

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Executive Summary

Ecosupport Ltd were commissioned to undertake a Preliminary Ecological Appraisal (PEA) at the bungalow (formally known as Brighstone), a large garage, three sheds, a greenhouse and associated garden and drive located off Botley Road, Horton Heath, Hampshire, SO50 7DQ. This was required in order to identify any potentially important ecological features that may be affected by the demolition of existing buildings on site to make room for five new residential dwellings. The survey concluded that the bungalow was a confirmed roost, with several Brown Long-eared droppings within the roof void, and garage had low potential to support roosting bats and as a result phase II bat surveys were required.

Ecosupport Ltd undertook phase II bat surveys during May – June 2023. During the surveys Common Pipistrelle bats were recorded roosting confirming the presence of bat roosts. The results of the surveys and required mitigation, compensation and enhancement measures are outlined within this report.

1.0 INTRODUCTION

1.1 Brief

Ecosupport Ltd was instructed to carry out the Phase II Bat surveys at Brighstone, Botley Road, Horton Heath (here after referred to as 'the site') in May - June 2023.

1.2 Aim

The aim of the surveys was to confirm the presence/likely absence of roosting bats within the buildings. Once roosting bats were identified the surveys then provided the opportunity to classify the conservation significance of the roost.

NB If the development does not take place within 18 months¹ of this report then the findings may need to be updated.

1.3 Site Description & Location

The site comprises of a bungalow (Brighstone), a large garage, three sheds, a greenhouse and associated garden and drive located off Botley Road, Horton Heath, Hampshire, SO50 7DQ (centered on OS grid reference SU 49551 16625) (**Fig 1**). The immediate wider environment is predominantly sub-urban with agricultural fields to the south and woodland parcels to the east. Additionally, the village of Horton Heath located to the north of the site.

Figure 1. Google aerial image of the site with approximate redline boundary (Google Earth 2023).



1.4 Proposed Development

The proposals involve the demolition of all buildings on site to make room for five residential dwellings with associated landscaping and access.

¹ <https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf>

2.0 RELEVANT LEGISLATION & POLICY

2.1 Legislation & Policy Context

2.1.1 Relevant Legislation

The Wildlife & Countryside Act 1981 (as amended) is the primary piece of legislation by which biodiversity in the UK is protected. The most relevant areas of the Act to development related activities are:

- The protection of certain species listed in Schedule 5, which prohibits killing, injury, disturbance, damage and / or destruction of breeding sites and / or resting places and sale (it should be noted that all parts of this protection do not apply to all Scheduled species).

The Conservation of Habitats and Species Regulations (2018), this transposes the EU Habitats Directive (Council Directive 92/43/EEC) into UK domestic law. It provides protection for sites and species deemed to be of conservation importance across Europe. It is an offence to deliberately capture, kill or injure species listed in Schedule 2 or to damage or destroy their breeding sites or shelter. It is also illegal to deliberately disturb these species in such a way that is likely to significantly impact on the local distribution or abundance or affect their ability to survive, breed and rear or nurture their young.

The Natural Environment and Rural Communities (NERC) Act 2006 requires that public bodies to have regard to the conservation of biodiversity. This means that Planning Authorities must consider biodiversity when planning or undertaking activities. Section 41 of the Act lists species found in England which were identified as requiring action under the UK Biodiversity Action Plan and which continue to be regarded as conservation priorities under the *UK Post-2010 Biodiversity Framework*.

2.1.2 National Planning Policy

Section 15 of the National Planning Policy Framework (NPPF) 'Conserving and enhancing the natural environment' states that planning policies and decisions should contribute to and enhance the natural environment. They should do this by protecting and enhancing sites of biodiversity and minimizing impacts on and providing net gains for biodiversity, including establishing coherent ecological networks.

The plan states to protect and enhance biodiversity plans should identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks. This includes the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them. Plans should identify the protection and recovery of priority species and opportunities for securing measurable net gains for biodiversity.

When determining planning applications, local planning authorities should apply the following principles:

- if significant harm to biodiversity resulting from a development cannot be avoided, adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact;
- development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
- development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

2.1.3 Local

New Strategic Policy S10 'Green Infrastructure' is subject to proposed amendments that are currently out to public consultation. These include re-numbering the Policy to S9 Green Infrastructure which is still to seek the provision of connected habitats, linking the network of designated sites and existing priority sites.

This new strategic policy cross-refers to new Policy DM11 Nature Conservation which is also proposed to be amended to read...

'Policy DM11, Nature conservation

General Approach

1. The Council will work with statutory and voluntary agencies and developers, and will determine planning applications, to:

a. Protect, conserve and enhance all:

- i. international, national and local nature conservation designations; and*
- ii. networks of natural habitats and features, including the Local Ecological Network, Priority Biodiversity Areas and Priority Biodiversity Links, watercourses, wetland complexes, woodland trees, and trees and hedgerows important to biodiversity and local character;*

and facilitate their adaptation to climate change wherever possible;

b. Assist in achieving national, county and local biodiversity targets as set out in Biodiversity Action Plans (BAPs);

c. Seek a net gain of biodiversity on all development sites (including sites for redevelopment) through the protection, enhancement and connection of existing and provision of new habitats and features of nature conservation interest compatible with the native biodiversity characteristics of the Borough, having regard to local geodiversity and soils; and

d. Contribute to major elements of the PfSH Green Infrastructure Strategy and other strategies for the provision and enhancement of multifunctional green infrastructure including green routes, ecological networks and biodiversity enhancements (see strategic policy S910).

International Designations

2. Development which is likely (either individually or in combination with other developments) to adversely affect the integrity of an international or European nature conservation site will not be permitted subject only to imperative reasons of overriding public interest in the absence of alternative solutions. A 'project level' Habitat Regulations Assessment will be required. Any mitigation measures required to ensure no adverse impact must be implemented at the appropriate time.

3. The Council will work with PfSH, Natural England, the Environment Agency and other wildlife organisations to develop and implement with developers a strategic approach to the protection and enhancement of international and European sites from the direct and indirect effects of development. Within Eastleigh Borough this will include:

a. Implementing:

i. the Solent Recreation Mitigation Strategy (requiring contributions from residential developments within 5.6 kilometres of the Solent Special Protection Area to the Strategy); and
ii. the interim and any future New Forest Recreation Mitigation Strategy if required;
or alternative agreed site specific measures to address recreational disturbance;

b. preserving the water quality and flows within the Itchen and Hamble, Southampton Water and Solent;

c. protecting the River Itchen SAC, in particular the maintenance and where appropriate restoration of habitats and qualifying species to favourable conservation status (as defined by article 1 of the Habitats Directive); and

d. seeking contributions towards measures set out in the Southern Damselfly Conservation Strategy (or other strategy) specifically to deliver biodiversity net gain.

National and Local Designations

4. Development will not be permitted if it is likely (either individually or in combination with other developments) to have a direct or indirect adverse effect on a Site of Special Scientific Interest (SSSI), Site of Importance for Nature Conservation (SINC) or Local Nature Reserve (LNR) as shown on the policies map (or on a more recent plan provided by the Hampshire Biodiversity Information Centre) unless it can be demonstrated that:

a. there are no alternative solutions;

- b. the adverse effects are unavoidable;*
- c. measures are taken to mitigate or, as a last resort, compensate for the adverse effects;*
- d. there is an overall biodiversity net gain; and*
- e. if there are any residual adverse effects, the benefits of the development clearly outweigh the adverse effects on the nature conservation value of the site and any broader impacts on national and local designations.*

Priority habitats, protected and priority species and the local ecological network

5. Development will not be permitted if it is likely (either individually or in combination with other developments) to have a direct or indirect adverse effect on priority habitats, protected or priority species, or on the local ecological network unless it can be demonstrated that:

- a. there are no alternative solutions;*
- b. the adverse effects are unavoidable;*
- c. measures are taken to mitigate or, as a last resort, compensate for the adverse effects;*
- d. there is an overall biodiversity net gain; and*
- e. if there are any residual adverse effects, the benefits of the development clearly outweigh the adverse effects on priority habitats, priority and protected species, and the local ecological network.*

Irreplaceable habitats

6. Development will not be permitted if it results in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees), unless there are wholly exceptional reasons and a suitable compensation strategy exists.

Buffers

7. Buffers free from development will be provided to designated sites to avoid/mitigate impacts, including recreational impact and impacts on edge habitats, and to maintain dark skies.

Surveys

8. Development will not be permitted unless it can be demonstrated that:

- a. there have been thorough habitat and species surveys;*
- b. the great crested newt strategic survey and strategy have been considered in all developments within 500m of a great crested newt pond; and*
- c. the strategic bat trapping survey has been considered in all developments within the locality of a woodland or connected habitat networks.'*

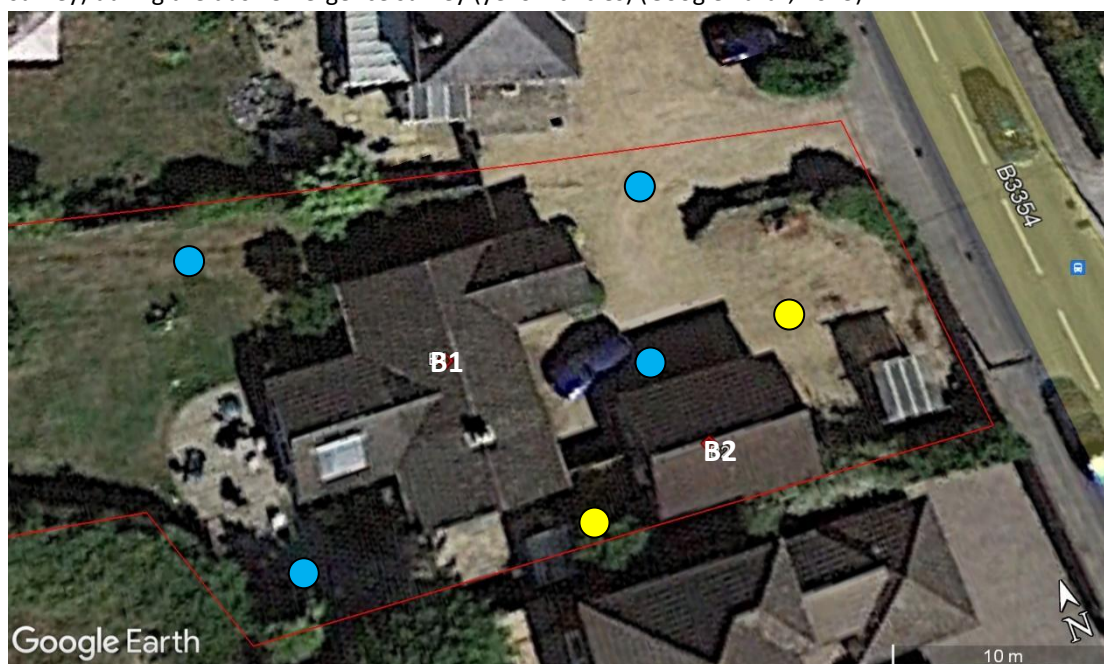
3.0 METHODS

3.1 Emergence Surveys

The bat surveys at Brighstone were led by Karen Niven, Leah Murphy, and Kat Aburrow, with assistance from Jo Pinfield, Laurie Daglish, Sue Waight, Zoe Bentley, Jolene Oliwaski, Rod Vatter, Andy Wilkins, Jane Wilkins, Kristian Markusen, and Abby Pidgen, all experienced ecologists with Ecosupport (with the approximate locations of the surveyors indicated in **Fig 2**). Both heterodyne (Bat Box Duet, Peterson D230 and Elkon Batscanner) and time expansion (Elekon Batlogger) detectors were used for identifying species calls / analysis of calls via sonogram (where required). The dusk emergence surveys both began approximately 15 minutes prior to sunset and continued until approximately an hour and 25 minutes after with a dawn survey commencing 1 hr 45 minutes before sunrise and continuing until 10 minutes past sunrise. Survey sheets were used to record the following information:

- Time of call registration
- Species (if possible, to identify using heterodyne detector)
- Location / activity
- Direction of flight (if seen)

Figure 2. Approximate locations of the surveyors covering B1 (known roost, x3 surveys) during both dusk emergence and dawn bat surveys (blue circles), and the surveyors covering B2 (low potential, x 1 survey) during the dusk emergence survey (yellow circles) (Google Earth, 2023).



3.2 Limitations

There were not considered to be any significant limitations to the survey, with it undertaken during the accepted survey season (Collins (ed) 2016), during suitable weather conditions and with all areas of the buildings covered.

4.0 RESULTS

4.1 eDNA Analysis

During the PEA, a small number of bat droppings were taken from the roof void beneath the ridge beam and sent off for DNA analysis. The subsequent analysis confirmed these droppings were from Brown Long-eared bats (*Plecotus auritus*) (**Fig 3**).

Figure 3. The DNA results returned by The University of Warwick, 2023.



9 March 23

Re: Identification Results for Darla Brown, Ecosupport Ltd

Job number 19411, received 24 February 2023

Sample labelled: Brighstone, Horton Heath

PCR amplification successful. DNA sequence:

ATGACCAACATTTCGAAAGTCCCACCCTCTCATAAAAATTATCAATGACTCATTTCATTG
ACTTACCTGCTCCCTCAAATATTTTCATCATGATGAAACTTTGG

Phylogenetic analysis identification: *Plecotus auritus*

Confirmed by maximum likelihood, maximum parsimony, bootstrap 100%.

Best regards,

Professor Robin Allaby

4.2 Emergence / Re-entry Surveys

The results of the bat emergence surveys and dawn re-entry survey along with other relevant information of survey conditions are provided in **Tables 1** and **2** below.

Table 1. Relevant information on survey conditions recorded.

Date	Start Temp (°C)	End Temp (°C)	Cloud Cover (%)	Wind (Beaufort scale)	Sunset / sunrise Time	Start Time	Finish Time
04/05/2023	14	13	90	2	20:31	20:16	21:46
18/05/2023	13	12	90	2	20:52	20:37	22:22
01/06/2023	10	12	80	1	04:57	03:27	05:12

Table 2. Results from the emergence / re-entry surveys at Brighstone. HNS = Heard Not Seen.

Survey Date	Recorded Bat Roost(s)	Bat Activity on Site		
		Species	First Pass	Last Pass
4 th May 2023 (dusk)	Three Common Pipistrelle emergences	Common Pipistrelle	20:35	21:32
		<u>Summary:</u> Activity during this survey was considered to be low with a total of 18 bat passes recorded. Species diversity was also low with a total of 1 species recorded throughout the survey. The first registration was from a Common Pipistrelle (<i>Pipistrellus pipistrellus</i>), which was recorded as HNS at 20:35. At 20:40, two Common Pipistrelle were recorded emerging from underneath the soffit on the eastern elevation of the bungalow, followed by another Common Pipistrelle emerging from the same location at 20:42 (Figs 4 & 5). A further 17 Common Pipistrelles were then recorded foraging and commuting across the site, with the final recording of Common Pipistrelle at 21:32 also recorded as HNS.		
18 th May 2023 (dusk)	No emergences	Common Pipistrelle	21:08	21:38
		<u>Summary:</u> Activity during this survey was considered to be low with a total of 24 bat passes recorded. Species diversity was also low with a total of 1 species recorded throughout the survey. The first registration was from a Common Pipistrelle (<i>Pipistrellus pipistrellus</i>), which was recorded commuting south over the site at 21:08. A further 23 Common Pipistrelles were then recorded foraging and commuting across the site, with the final recording of Common Pipistrelle at 21:38 foraging around the site.		

		Species	First Pass	Last Pass
		Common Pipistrelle	04:07	04:30
		<u>Summary:</u> Activity during this survey was considered to be low with a total of 13 bat passes recorded. Species diversity was low with a total of 1 species recorded throughout the survey. The first registration was from a Common Pipistrelle (<i>Pipistrellus pipistrellus</i>), which was recorded at 04:07 as commuting across the site. A further 12 Common Pipistrelles were then recorded commuting and foraging across the site. The final recording of Common Pipistrelle was at 04:30 re-entering the top of the hanging tiles on the western elevation of the building (Fig 4 & 6).		
1 st June 2023 (dawn)	1 Common Pipistrelle re- entry			

Figure 4. Location of the emergences / re-entry identified during the surveys undertaken on-site (red = Common Pipistrelle emergence on the 4th May 2023, yellow = Common Pipistrelle re-entry on the 1st June 2023).



Figure 5. Location of the three Common Pipistrelle emergences during the dusk survey on the 4th May 2023 (red circle).



Figure 6. Location of the Common Pipistrelle re-entry during the dawn re-entry survey on the 1st June 2023 (red circle).



5.0 EVALUATION

5.1 Summary & Evaluation of Results

5.1.1 Foraging and Commuting

Overall, the levels of foraging and commuting bats recorded on site during the surveys was low and entirely restricted to Common Pipistrelle. Given the size and nature of the development, and the surrounding habitat, it is considered there will only be **minor adverse impact** at the **Local Scale** for foraging and commuting bats.

5.1.2 Roost Characterisation / Evaluation

In total, maximum count of three Common Pipistrelle was noted roosting within the building (the locations are indicated above in **Figures 4 - 6**), with Brown Long-eared droppings located within the roof void. Given the low number noted, it is considered the roost would represent an example of 'day roost' for a low number of Common Pipistrelle and Brown Long-eared bats. The BCT guidelines (Collins (ed), 2016) describe such roost as:

'A place where individual bats, or small groups of males, rest or shelter in the day but are rarely found by night in the summer'

5.1.3 Site Status Assessment

In accordance with the *Bat Mitigation Guidelines* (Mitchell – Jones, 2004), the roosts would be considered to be of **LOW** conservation significance and therefore of **LOCAL VALUE** (as Common Pipistrelle and Brown Long-eared bats are a 'common' species) using the IEEM valuation criteria for bat roosts (Wray et al., 2010).

5.1.4 Implications

Due to the presence of several (3) bat roosts within the bungalow at Brighstone, any works to the building that will result in damage or disturbance to the roost (i.e. roofing works, works to the soffits and hanging tiles) would likely constitute an offence under the Conservation of Habitats & Species Regulations (2010). In order for works that may result in such an offence (including demolition, modification of the building and repair) to legally take place, a European Protected Species (EPS) licence will be required. To inform an EPSL, the below sections detail appropriate mitigation and compensation measures.

5.1.5 Impacts in the Absence of Mitigation

In the absence of mitigation works (i.e. obtaining a license, supervised works, providing compensatory roost location etc.), the proposals would result in the destruction and permanent loss of two Common Pipistrelle Day roost locations and one Brown Long-eared day roost, which would constitute a criminal offence as bats and their roosts are protected under legislation. This would therefore result in a **certain impact** at the **local level**.

6.0 MITIGATION & COMPENSATION

6.1 Introduction

In order to fully comply with applicable legislation and planning policy, it is necessary to mitigate or compensate for any significant ecological impacts.

The chapter is divided into three sections, dealing with mitigation, compensation and enhancement. Mitigation refers to measures that can be undertaken to avoid or reduce ecological impacts, for example, by timing works to avoid periods when bats are roosting. Compensation refers to measures taken in order to offset potential significant impacts, for example by providing alternative roost sites to replace roost sites lost as a result of the works.

6.2 Mitigation

6.2.1 EPS Licence

All works that affect the bat roosts carried out on the bungalow at Brighstone (as per **Figs 4 - 6**) must take place under an EPSL obtained from Natural England, and the destruction of the roosts and capture of bats (if required) will need to be carried out under the supervision of a licenced Ecologist. All works would be detailed within the EPSL Method Statement required as part of the licence application.

6.2.2 Timing

It is recommended that works avoid the hibernation period (November – February), when bats are in a torpid state and therefore more vulnerable, but also within the optimum period for carrying out works (as per Bat Mitigation Guidelines). Given that the roost present is a day roosts, no further timing restrictions will be required. It is therefore recommended that works are carried out between March and October. Works will take place in suitable weather conditions (i.e when overnight temperatures do not drop below 8 degrees immediately prior to or after works to the roost take place) as defined by best practice guidance (Mitchell-Jones et al. 2004).

6.2.3 Supervision

Prior to any works getting underway the licensed bat worker will give a Toolbox talk which will detail best practice methods of sensitive stripping/removal of roofing tiles/materials, sensitive demolition of the building once the areas surrounding the roost have been stripped and identifying signs of bats. Personnel will be educated on signs of bats and that, in the unlikely event a bat is found whilst the licensed ecologist is not on site, that all works should stop immediately until the licensee returns to site.

The licensed bat worker will then assist contractors with the removal of construction materials surrounding the roost and any other areas which are considered to be high risk for roosting bats.

6.2.4 Capture (if required)

If during the sensitive removal of construction materials bats are discovered, the supervising ecologist will place the individuals into a holding bag (a soft cloth bag with closure-strings and with seams on the outside (Mitchell-Jones and McLeish, 2004)) to ensure the bat keeps calm and will not take flight during daylight hours. They will then immediately transport the bat to one of the mitigating bat boxes where the bat will be released and left undisturbed. During this time, the licenced bat worker will be wearing appropriate bat handling gloves to ensure the bat does not come to any harm. The licenced bat worker will have ample experience in handling a variety of bats and is confident in doing so.

6.2.5 Bat boxes

The Bat Mitigation Guidelines (Mitchell-Jones, 2004) state that *‘where roosts of low conservation significance are to be lost to development, bat boxes provide an appropriate form of mitigation, either alone or, preferably, in combination with the provision of roosts in buildings.’*

Prior to works getting underway 2 No Vivara Pro large multichamber bat box will be erected on suitable trees along the eastern boundary (**Fig 7**). These bat boxes are designed as summer roosting spaces for crevice- dwelling species such as Pipistrelles and Long-eared bats. The bat boxes maintain a stable temperature inside and are painted black to absorb warmth. These boxes should be erected 3-6m high and in an open, sunny position (preferably with one of the boxes facing a southern elevation). It is preferable for these to be facing different directions to provide a variety of micro-habitats. Once the works have been completed these boxes should be left in perpetuity to provide additional long-term enhancements for local bats.

Figure 7. Location of the proposed bat boxes (red circles) to be erected onto suitable trees along the eastern boundary (Google Earth, 2023).

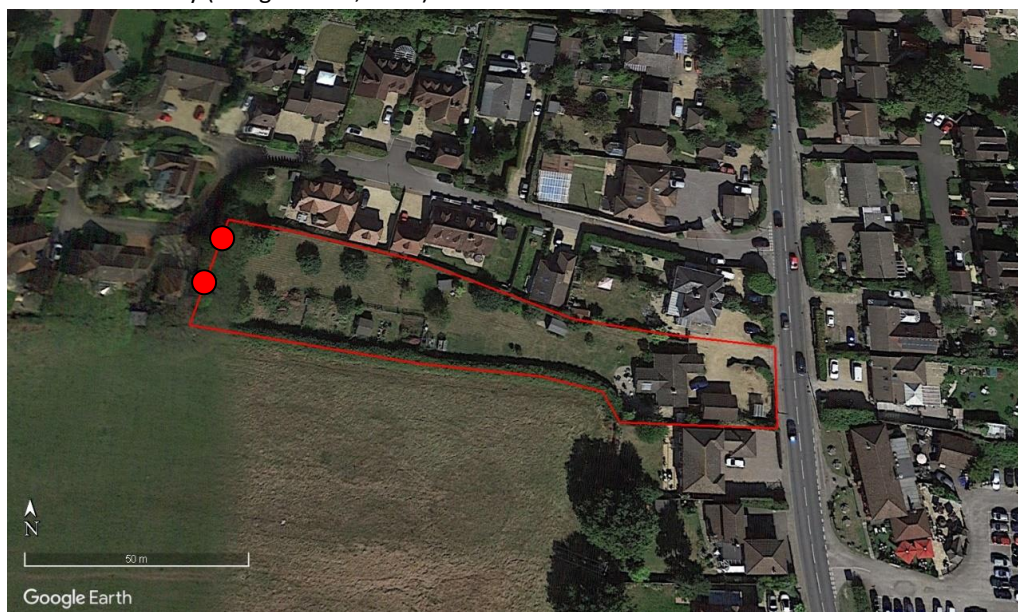


Figure 7. The Vivara Pro large multichambered bat box, 2 No of which that will be erected on site as mitigation.



6.2.6 Roost Compensation

To replace the loss of the two Common Pipistrelle and one Brown Long-eared day roosts, each new dwelling will contain an integrated bat brick built into the external structure (5 in total). The bat brick used should be the ibstock bat brick B as they are available in a variety of different brick colours and requires no maintenance (**Fig 8**). This will also be positioned as close to the eaves as possible, away from windows and in a position that will receive direct sunlight.

Figure 8. The Ibstock bat brick 'B' that will be incorporated into the newly built dwellings.



In addition, the mitigation bat boxes will be left *in situ* for perpetuity to provide long term alternative roosting opportunities for the bats on site.

No Brown Long-eared bats were recorded emerging or re-entering during the surveys and only a small number of droppings were identified within the loft space. As such, the above

compensation is considered appropriate and proportionate to the types of bat roosts identified.

NB. Adam Jessop (Principal Ecologist at Ecosupport Ltd, Class Licence Number 2015-13366-CLS-CLS) has previously been granted a Bat EPSL allowing for the destruction of one Brown Long-eared bat roost (within the loft of a building) under licence number 2021-54784-EPS-MIT. Bat boxes were considered appropriate mitigation and compensation for the loss of this roost.

6.2.7 Monitoring and Maintenance

The *Bat Mitigation Guidelines* do not recommend further conditions in relation to the post development monitoring of bat roosts of low conservation significance. However, a compliance check will be carried out to ensure all agreed mitigation and compensation techniques have been implemented.

6.3 Additional Recommendations

6.3.1 Sensitive Lighting

A document (*Guidance Note 08/18 Bats and Artificial Lighting in the UK*) produced via a collaboration between the Institute of Lighting Professionals (ILP) and the Bat Conservation Trust (BCT), which outlines the latest recommendations to minimise the impacts of increased artificial lighting on bats. The key recommendations within this document have been outlined below and will be implemented as far as is practicable.

'Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The following should be considered when choosing luminaires:

- *All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used. LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.*
- *A warm white spectrum (ideally <2700Kelvin) should be adopted to reduce blue light component.*
- *Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).*
- *Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill.*
- *The use of specialist bollard or low-level downward directional luminaires to retain darkness above can be considered. However, this often comes at a cost of unacceptable glare, poor illumination efficiency, a high upward light component and poor facial recognition, and their use should only be as directed by the lighting professional.*
- *Column heights should be carefully considered to minimise light spill.*
- *Only luminaires with an upward light ratio of 0% and with good optical control should be used – See ILP Guidance for the Reduction of Obtrusive Light.*
- *Luminaires should always be mounted on the horizontal, ie no upward tilt.*
- *Any external security lighting should be set on motion-sensors and short (1min) timers.*

As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed' (Fig 9).

Figure 9. (a) Shield 'barn doors' (b) cowl hood; (c) shield and; (d) external louvre Images from ILP (2018).



7.0 REFERENCES

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