



URBAN EDGE  
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# Land at An Teachin, Hawley Road, Sutton at Hone, Dartford, Kent

**Bat Survey**

**September 2021**



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## Bat Survey

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<b>Revision No.:</b> 0	<b>Status/Comment:</b> First issue to client	<b>Date:</b> 13 September 2021

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# Abbreviations

BCT	Bat Conservation Trust
CHS	Conservation of Habitats and Species Regulations 2017 (as amended)
EPS	European Protected Species
KMBRC	Kent and Medway Biological Records Centre
LNR	Local Nature Reserve
LWS	Local Wildlife Site
MAGIC	Multi-Agency Geographic Information for the Countryside
NE	Natural England
NERC	Natural Environment and Rural Communities (Act 2006)
NNR	National Nature Reserve
NPPF	National Planning Policy Framework
PEA	Preliminary Ecological Appraisal
PRA	Preliminary Roost Assessment
PRF	Potential roost feature
SAC	Special Area of Conservation
SSSI	Site of Special Scientific Interest
TN	Target Note
WCA	Wildlife and Countryside Act 1981 (as amended)

## 0 Executive Summary

- 0.1.1 A Preliminary Roost Assessment (PRA) was carried out in July 2021 for the site of a proposed residential renovation and extension at An Teachin, Hawley Road, Sutton at Hone, Dartford (Grid Reference: 555282, 171658). The assessment was undertaken to determine the suitability of the building for, and record any evidence of use by, roosting bats. The building was assessed to be of low suitability for roosting bats and it was recommended that one further presence/absence survey should be carried out due to the presence of potential roost features (PRF) within the existing building B1.
- 0.1.2 A data search returned 307 records of 11 species of bat from within 5km of the survey area, during a date range of 1983 to 2020. Most of these records were of bats in flight but three roost sites within 1km of the site were returned, the closest to the survey area being a maternity roost located c.450m north-east. A search of the MAGIC database for granted EPS mitigation licenses for bats within a 2km radius found two licenced sites. There are 27 SSSI and no SAC within 10km of the survey area. Bat populations do not feature among the notified features of any of these sites and these sites will not be affected by the proposals.
- 0.1.3 The site is located within an area of good quality habitat for foraging bats sited near to open countryside comprising mixed farmland. There is a low density of residential development within the nearby wider area and therefore low levels of artificial lighting. The area supports a number of dark tree corridors, woodlands and a network of mature hedgerows.
- 0.1.4 One survey of the building was carried out, consisting of one dusk emergence on 20 August 2021. Sunset on 20 August was at 20.14; the survey started at 19.59 and ended at 21.59. No bats were recorded emerging from the building during the survey.
- 0.1.5 The survey results provide a good level of confidence that bats were absent from the building during the 2021 peak breeding season. In conclusion, the survey results demonstrate that there are very unlikely to be any direct or indirect impacts to bats, their breeding/resting places or foraging/commuting habitats as a result of the proposed development. Bats are not considered to present a constraint to development proposals for the site.
- 0.1.6 No specific avoidance, mitigation or compensation measures for bats are required to be implemented as part of the currently proposed scheme because no roosting bats were recorded. However, precautionary measures are nevertheless advised and are listed in Table 0.1. In addition, a range of ecological enhancements are recommended to deliver an ecological net gain on site post-construction.

**Table 0.1: Recommendations**

#	Recommended precautionary measures
<b>R1</b>	The current report is based on one presence/absence survey for Building B1 during the 2021 active season, which is proportionate to the buildings' suitability for roosting bats. If commencement of the works is significantly delayed (e.g. by more than 18 months from the survey date), updated active season surveys will need to be undertaken to record any changes in roosting status.
<b>R2</b>	The survey results indicate that bats are likely to be absent from building B1. In the unlikely event that bats are encountered during the works, site operatives will be advised to cease activity in the vicinity while advice from an ecologist is sought. The ecologist will then assess the most appropriate course of action before works continue.
<b>R3</b>	Avoid the use of external lighting, or keep its use to the minimum required for its intended purpose, during both construction and operation. This will be of benefit to nocturnal species e.g. bats. Where external lighting is to be provided, it should be low-level, directional lighting with minimal spill and glare, and consideration should be given to reduced hours of operation and/or a movement responsive system of control. Use narrow-spectrum bulbs and light sources that emit minimal UV light, avoiding white and blue wavelengths of the spectrum. Use glass lantern covers instead of plastic to filter UV light.
<b>R</b>	The building, hedgerows, trees and shrubs are also suitable for nesting birds. Negative impacts on breeding birds will be avoided by undertaking clearance and demolition works which would result in removal of potential nesting habitats (including vegetation and buildings) outside of the bird breeding season, which runs from 1 March to 31 August. Removal of nesting bird habitats will therefore be carried out between September and February. Any construction works undertaken within the bird breeding season where suitable bird breeding habitat exists will require a site check for nesting birds by a suitably qualified ecologist. This will take place no more than two days prior to works commencing. This is to ensure that no disturbance to active bird nests occurs. If a nest is found it must be cordoned off and works adjacent to the nest must be delayed until such time that the chicks have fledged from the nest. This will be supervised by a suitably qualified ecologist.



# 1 Introduction

## 1.1 Background

1.1.1 A Preliminary Roost Assessment (PRA) was carried out in July 2021 for the site of a proposed residential renovation and extension at An Teachin, Hawley Road, Sutton at Hone, Dartford (Grid Reference: 555282, 171658). The assessment was undertaken to determine the suitability of the building for, and record any evidence of use by, roosting bats. It was recommended that further surveys for bats should be carried out due to the presence of potential roost features (PRF) within the existing building B1.

## 1.2 Objectives and Approach of the Study

1.2.1 The study was commissioned to fulfil the following objectives:

- ▶ To determine the presence or likely absence of bats using potential roosts within the site or adjacent habitats which may be affected by works on the site;
- ▶ To establish the baseline assemblage and relative abundance of bat species using the site;
- ▶ To identify and evaluate the types of roost present and assess the potential impacts of the development on bats;
- ▶ To provide sufficient data to inform a European Protected Species Mitigation Licence application, if required; and
- ▶ To outline the measures required for avoiding and mitigating negative impacts, including compensation of habitat losses if necessary, and make recommendations for ecological enhancement.

1.2.2 To meet these objectives the survey approach involved:

- ▶ A desk study involving a review of bat records from the local area (2km radius from the centre of the proposed development site) and designated site citations;
- ▶ A Preliminary Roost Assessment of structures, including internal/external inspection to assess their suitability for roosting bats; and
- ▶ Emergence and return-to-roost surveys of potential bat roost features likely to be affected by proposed development, based on current industry guidelines (Collins (ed.), 2016), to establish the presence or likely absence of bats.

## 1.3 Survey Area

1.3.1 The site lies to the south of the town of Dartford in the Borough of Dartford in Kent. The site is c.370m<sup>2</sup> of previously developed land comprising grassland, scattered trees and buildings. The survey area is bounded to the north and east by semi-improved grassland pasture, to the south

by further residential development and the M25, and to the west by further pasture and the village of Hawley. The extent of the survey area is outlined in red on Figure 1.1.

- 1.3.2 The wider landscape is characterised by a patchwork of arable and pasture farmland with tributaries of the River Darent, sparse residential development, hedgerows and lines of mature trees. The sprawling urban development of Dartford lies to the north.

#### **1.4 Proposed Construction Activities**

- 1.4.1 Planning consent is being sought for renovation of the existing buildings and the construction an extension. Figure 1.2 illustrates the proposed site layout.

# An Teachin Hawley road Dartford

 Survey area

Figure 1.1: Survey area



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Ordnance Survey 0100031673

Scale: 1:5,000      Created by: AD  
Date: Jul 2021      Reviewed by: NP  
Drawing number:  
UE0462ECO-Site\_210720



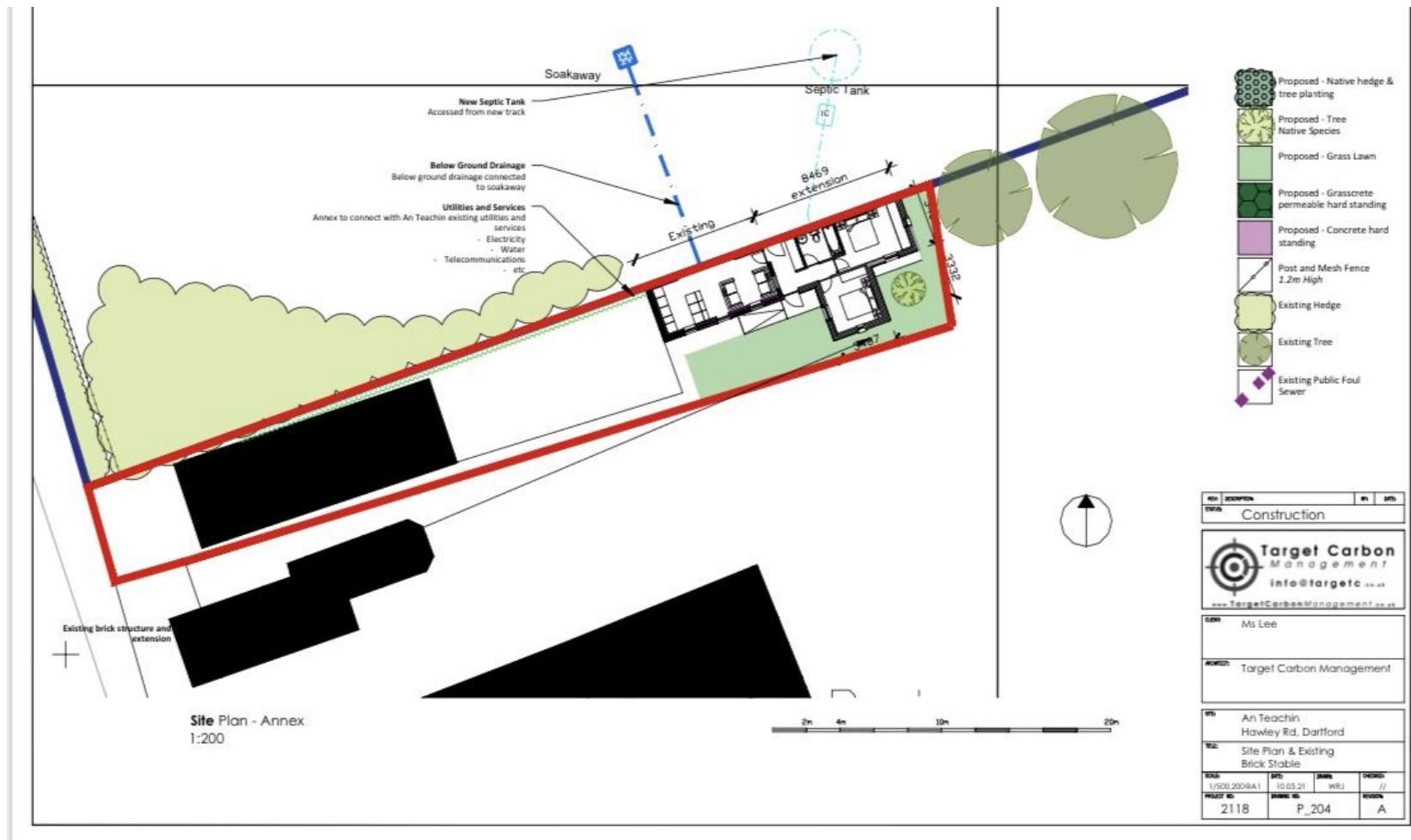


Figure 1.2: Proposed site layout

## 2 Bat Distribution, Ecology and Status

### 2.1 Distribution

- 2.1.1 There are eighteen native species of bats found in the UK. These range from relatively common and widespread species such as common pipistrelle *Pipistrellus pipistrellus* and brown long eared bat *Plecotus auritus* to the rare species such as Bechstein's bat *Myotis bechsteinii* and barbastelle bat *Barbastella barbastellus*.
- 2.1.2 Both common pipistrelle and brown long eared bats can be found throughout the UK. However, many other bat species have a much more limited distribution. The greater horseshoe bat *Rhinolophus ferrumequinum* is confined to south-west England and southern Wales and Bechstein's bat is located exclusively in the south of England. However it should be noted that there may still be areas of the country where bats are under recorded, and hence the distribution of species is not fully understood.

### 2.2 Ecology

- 2.2.1 The habitat preferences of different bat species are diverse, with some species being specialists and others more generalist. For instance Bechstein's bat typically forages and hibernates in mature woodland whereas Daubenton's bat *Myotis daubentonii* tends to hunt prey close to water. Pipistrelle bats on the other hand can be found foraging in almost any habitat and will roost in a variety of habitats ranging from hanging tiles on new buildings to beneath loose bark on trees.
- 2.2.2 Bat activity is highly seasonal and weather dependent. Generally they enter torpor when the temperature becomes unfavourable, usually from October to March, although bats may still emerge to feed on warmer nights. However, during the active period their behaviour is affected by weather conditions and breeding activity. Typically they are active in warm dry weather and are less active during heavy rain, high winds or in temperatures much below 10°C at dusk.
- 2.2.3 Mating occurs prior to hibernation with the young being born the following year around April and May. Female bats congregate in maternity roosts often numbering several hundred individuals and will give birth around June or July. Once the young are weaned the females will leave the roost to find mates prior to hibernation.

### 2.3 Status, Legislation and Policy

- 2.3.1 In the UK, the general trend is that bat populations have declined over the last century. In an attempt to halt this decline, all species of bat receive the greatest protection afforded by both European and UK wildlife legislation.

- 2.3.2 National legislation (Wildlife and Countryside Act 1981 (as amended)) gives full protection to the species and their habitats and this is further strengthened by European-derived legislation (Conservation of Habitats and Species Regulations 2017 (as amended)) which provides protection from disturbance and disturbing activities. Under this legislation it is an offence to:
- ▶ Intentionally kill, injure or capture/take a bat.
  - ▶ Intentionally or recklessly damage, destroy, or obstruct access to any structure or place of shelter or protection. This is taken to mean all bat roosts whether or not bats are present.
  - ▶ Intentionally or recklessly disturb a bat while it occupies such a structure or place that it uses for shelter or protection.
  - ▶ Sell, offer or expose for sale, or possess, or transport for the purpose of sale, any live or dead bat, any part of a bat, or anything derived from a bat.
- 2.3.3 Under the Habitats Regulations disturbance includes any activity which is likely to:
- ▶ Impair the ability of a bat to survive, breed, reproduce, or rear/nurture its young.
  - ▶ Impair the ability of a bat to migrate or hibernate.
  - ▶ Significantly affect the local distribution or abundance of the species.
- 2.3.4 Local Planning Authorities are obliged to have regard to conserving biodiversity when undertaking their functions. Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 states that public authorities must have regard to conserving, maintaining and enhancing biodiversity. Section 41 of the Act requires the Secretary of State to maintain a list of Habitats and Species of Principal Importance in England; the list includes several species of bat.
- 2.3.5 Furthermore, Government policy (National Planning Policy Framework – Section 15: Conserving and enhancing the natural environment) directs that planning decisions should be “*minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures*”.

## 2.4 Guidance and Best Practice

- 2.4.1 The methodology for the bat surveys was based on the latest *Good Practice Guidelines* from the Bat Conservation Trust (Collins (ed.), 2016; 3<sup>rd</sup> edition) as well as [Natural England Standing Advice on bats](#). The following documents were used for reference:
- ▶ *Acoustic Ecology of European Bats: Species Identification, Study of their Habitats and Foraging Behaviour* (Barataud, 2015);
  - ▶ Bat Conservation Trust websites; [www.bats.org.uk](http://www.bats.org.uk) and <http://roost.bats.org.uk/>;
  - ▶ *Bat Mitigation Guidelines* (English Nature, 2004);
  - ▶ *Bat Workers Manual* (Joint Nature Conservation Committee, 2004; 3<sup>rd</sup> edition);
  - ▶ *Bats of Britain and Europe* (Dietz & Kiefer, 2016); and
  - ▶ *British Bat Calls: A Guide to Species Identification* (Russ, 2012).

## 3 Methods

### 3.1 Desk Study

3.1.1 Kent and Medway Biological Records Centre (KMBRC) was consulted for records of bat species within a 5km search radius. Additionally, the Multi-Agency Geographic Information for the Countryside (MAGIC) website was consulted for granted European Protected Species (EPS) mitigation licenses for bats within a 2km radius, and for citations of Sites of Special Scientific Interest (SSSI) or Special Areas of Conservation (SAC) which are notified for important populations of bats within 10km of the survey area.

### 3.2 Field Survey

3.2.1 Field survey work undertaken for the project utilised a range of techniques in order to assess the usage of the site by bats:

- ▶ Preliminary Roost Assessment (PRA), including internal/external inspection of structures and trees; and
- ▶ Presence/absence surveys.

### 3.3 Preliminary Roost Assessment

3.3.1 Inspection of the structures to be affected was undertaken on 9 July 2021 by a suitably licenced and experienced ecologist. The entire building was subject to an external and where possible internal inspection for potential roost features.

3.3.2 An experienced surveyor undertook the inspection with the aid of the following equipment: telescopic ladders to gain safe access; Wildlife Acoustics EM3 full spectrum bat detector to record and identify the calls of any bats which were present; CB-2 high-powered searchlight fitted with a red filter to search dark areas for signs of bats; telescopic mirror and/or 9mm digital endoscope camera to inspect hidden cavities; Hawke Sport Optics 10x42 close-focusing binoculars to view areas inaccessible on foot; and digital camera with flash to record any evidence of bats or features suitable for use by bats.

3.3.3 All observable features potentially suitable for bats were noted and the overall suitability of the structure for roosting bats was classified with reference to Box 1 (Collins (ed.), 2016). The external inspection from ground-level focused on potential access points and roosting opportunities such as lifted lead flashing, broken, lifted or missing roof or ridge tiles, cracks in the render or gaps between exterior cladding and weatherboards, soffits or fascias. The internal inspection included a search for live animals and other signs that give an indication of past or present occupancy. In the case of bats, typical indicators include droppings (which are characteristic and are often indicative of species), signs of fur oil staining, urine splashing, characteristic odours, and

accumulations of discarded prey remains. It also assessed the overall suitability of the structure for roosting bats focusing particularly on the interior roof spaces and cellars (subject to safe access). The objective was to establish whether structures are of low, moderate or high bat roosting suitability.

<b>Box 1: Potential suitability of structures/trees for roosting bats (after Collins, 2016)</b>	
<b>Suitability</b>	<b>Roosting habitats</b>
Negligible	Negligible habitat features on site likely to be used by roosting bats
Low	A structure with one or more potential roost features (PRF) that could be used by individual bats opportunistically, but do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats  A tree of sufficient size and age to contain PRFs but with none seen from the ground / using ladders or features seen with only very limited roosting potential
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (for roost type only)
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat

### 3.4 DNA Analysis

3.4.1 The structures and trees inspections included a search for bat droppings which, if found, would be collected in accordance with BCT protocols (Collins (ed.), 2016) to be sent for DNA analysis by the ecological forensics team within the School of Life Sciences at the University of Warwick.

### 3.5 Presence/Absence Surveys

3.5.1 Where a structure/tree is found to contain evidence of roosting bats, or judged to be potentially suitable as a roost, then further surveys are required prior to undertaking works in order to confirm whether bats are currently present or are likely to be absent. These surveys typically take the form of emergence surveys (carried out as the bats leave the roost at dusk) and re-entry surveys (as bats return to the roost at dawn), and can be carried out between May and September (May to August being the optimal period).

3.5.2 Emergence surveys commenced at least quarter of an hour before dusk and continued for up to 2 hours after sunset, while return-to-roost surveys (where applicable) began 1.5 to 2 hours before dawn and continued until 15 minutes after sunrise. The objective was to establish the presence or likely absence of bats within each feature, determine the assemblage and relative abundance of bat species using the features, and identify the type(s) of roost (e.g. day roost or maternity roost).

3.5.3 Detection equipment included Wildlife Acoustics Echo Meter Touch, EM Touch2 Pro and EM3 full spectrum detectors. Recordings of bat calls were analysed using BatSound (v4) and



Kaleidoscope Pro (v5.1.9) software. The number of bats leaving/entering each building were noted, together with observations regarding point of emergence/re-entry, type of behaviour and areas of particularly high activity. Survey covariates were also noted (minimum/maximum air temperatures, wind speed/direction, precipitation and cloud cover). Table 3.1 shows the dates and weather conditions for each survey visit.

**Table 3.1: Survey dates and weather conditions**

Date	Dusk/dawn	Weather conditions
20 August 2021	Dusk	21°C – 19°C, 10-60% cloud cover, light wind (Beaufort scale 1), no precipitation

3.5.4 Current guidelines (Collins (ed.), 2016) recommend the minimum levels of presence/absence survey effort for structures and trees, based on their overall suitability for roosting bats; see Box 2. The PRA concluded that the building had low suitability for roosting bats and one presence/absence surveys were undertaken using one surveyor and a Canon XA11 infrared camera, illuminated by infrared flood lighting. Appendix I presents a map of surveyor positions.

**Box 2: Recommended minimum survey effort for presence/absence surveys (Collins, 2016)**

Low roost suitability	Moderate roost suitability	High roost suitability
One survey visit: One dusk emergence or dawn re-entry survey	Two survey visits: One dusk emergence and a separate dawn re-entry survey	Three survey visits: At least one dusk emergence & at least one separate dawn re-entry survey

### 3.6 Evaluation

3.6.1 Within this bat survey report, the potential suitability of roosting and foraging/commuting habitats is classified as negligible, low, moderate or high with reference to Table 4.1 in the *Good Practice Guidelines* (Collins (ed.), 2016). The conservation significance of bat roosts is classified as low, moderate or high with reference to Figure 4 in the *Bat Mitigation Guidelines* (English Nature, 2004). However, these are relative terms which require an interpretation of the rarity of different species and regional variations therein. The terms are hence applicable within the survey area only and are intended to indicate which features of the survey area may be of importance to the conservation status of local bat populations.

3.6.2 Evaluation of the potential impacts on bats was undertaken with reference to Chapter 6 of English Nature (2004) and Natural England Standing Advice, with predicted impacts to each feature noted as of Low, Medium or High significance.

### 3.7 Limitations

3.7.1 The survey was undertaken in accordance with the BCT’s recommended timings for presence/absence surveys (Collins (ed.), 2016) with it occurring during the peak maternity period of May to August.

- 3.7.2 There were no difficulties in gaining access to the site to carry out the presence/absence surveys. All elevations were all viewed directly. Weather conditions were generally good and within acceptable parameters. There were no equipment malfunctions or other limitations of relevance to the methods applied.
- 3.7.3 Details of this report are considered to remain valid for one bat survey season (until September 2022), subject to no significant changes in the development proposals (CIEEM, 2019). Beyond this period, if works have not yet been undertaken, the development proposals change or red line boundary changes, it is recommended that a review of the ecological conditions is undertaken.
- 3.7.4 See Appendix V for general Legal and Technical Limitations which apply to this document.

### **3.8 Personnel**

- 3.8.1 All surveys were undertaken by Jeff Turton BSc (Hons) ACIEEM, an ecologist with six years' professional consultancy experience. He holds a licence to survey for bats (WML-A34).

## 4 Results

### 4.1 Desk Study

4.1.1 KMBRC returned 307 records of 11 species of bat from within 5km of the survey area, during a date range of 1983 to 2020, as summarised in Table 4.1. Most of these records were of bats in flight but three roost sites within 1km of the site were returned, the closest to the survey area being a maternity roost located c.450m north-east.

**Table 4.1: Summary of bat records data within 2km of the site**

Species	Protection
Serotine <i>Eptesicus serotinus</i>	Habs.Dir.Ax.4, CHS Sch.2, WCA Sch.5 full
Daubenton's <i>Myotis daubentonii</i>	Habs.Dir.Ax.4, CHS Sch.2, WCA Sch.5 full
Whiskered <i>Myotis mystacinus</i>	Habs.Dir.Ax.4, CHS Sch.2, WCA Sch.5 full
Natterer's <i>Myotis nattereri</i>	Habs.Dir.Ax.4, CHS Sch.2, WCA Sch.5 full
Leisler's <i>Nyctalus leisleri</i>	Habs.Dir.Ax.4, CHS Sch.2, WCA Sch.5 full
Noctule <i>Nyctalus noctula</i>	Habs.Dir.Ax.4, CHS Sch.2, WCA Sch.5 full, NERC s41
Nathusius' pipistrelle <i>Pipistrellus nathusii</i>	Habs.Dir.Ax.4, CHS Sch.2, WCA Sch.5 full
Common pipistrelle <i>Pipistrellus pipistrellus</i>	Habs.Dir.Ax.4, CHS Sch.2, WCA Sch.5 full
Soprano pipistrelle <i>Pipistrellus pygmaeus</i>	Habs.Dir.Ax.4, CHS Sch.2, WCA Sch.5 full, NERC s41
Brown long-eared <i>Plecotus auritus</i>	Habs.Dir.Ax.4, CHS Sch.2, WCA Sch.5 full, NERC s41

Habs.Dir.Ax.2/4 Habitats Directive 92/43/EEC Annex 2 or 4  
 CHS Sch.2 Conservation of Habitats & Species Regulations 2010 Schedule 2 (EPS animals)  
 WCA Sch.5 full Wildlife and Countryside Act (1981), Schedule 5 (fully protected)  
 NERC s41 Natural Environment and Rural Communities (Act 2006) Section 41

4.1.2 A search of the MAGIC database for granted EPS mitigation licenses for bats within a 2km radius found two licenced sites, summary details of which are listed in Table 4.2. There are 27 SSSI and no SAC within 10km of the survey area. Bat populations do not feature among the notified features of any of these sites.

**Table 4.2: Summary of granted EPS mitigation licences within 2km of the site**

Case ref.	Location	Species affected & licensed actions	Start date	End date
2014-3389- EPS-MIT	c.2km north- east	Soprano pipistrelle Destruction of a resting place	22/09/2014	11/09/2019
2014-3389- EPS-MIT-1	c.2km north east	Soprano pipistrelle Destruction of a resting place	05/11/2014	11/09/2019

## 4.2 Preliminary Roost Assessment

### **Landscape setting**

- 4.2.1 The site is located within an area of good quality habitat for foraging bats sited near to open countryside comprising mixed farmland. There is a low density of residential development within the nearby wider area and therefore low levels of artificial lighting. The area supports a number of dark tree corridors, woodlands and a network of mature hedgerows.

### **Building B1**

#### **Exterior**

- 4.2.2 The building was a single storey brick and flint-built farm building that was partially coated with concrete render that had worn off in places. The roof was clad with clay tiles, some of which had broken but most were intact and tightly fitting. The ridge tile was sealed with concrete. There were some gaps in the exterior brickwork that lead into cavities, but these were heavily cobwebbed. The north face of the building was covered with mature ivy *Hedera helix*.

#### **Interior**

- 4.2.3 The building was in constant use at the time of the survey as a shelter for horses. The walls were clad with plasterboard which had been broken by the horses, forming access into cavities. However, the plaster board was not closed at the top or at the sides, meaning light could penetrate into these cavities. There were no windows and no doors, making the inside very light and airy. No feeding evidence was found but this would have been swept away during daily horse care activities. There was an old chimney that lead into a dark cavity. The roof was lined with bitumen felt which was in good condition and had minimal gaps, providing a dark cavity between the tiles and liner.
- 4.2.4 A search was made of the interior space for signs of bats, at wall bases and beneath the ridge and beams. No live or dead bats, droppings, feeding remains, characteristic odours, urine splashing, or signs of fur oil staining around potential access points were noted.

#### **Trees**

- 4.2.5 There were two trees within the site boundaries. No potential roosting features were seen on these trees from the ground. These trees were considered to be of negligible suitability for roosting bats.



South face of B1



East face of B1



North face of B1 covered in ivy



Holes in brickwork leading into cavities



Broken roof tiles. Roof is lined beneath.



Interior. Fireplace and chimney stack pictured left.

### **Conclusion**

4.2.6 Building B1 was assessed to be of low suitability. None of the trees on site offer any potential roosting features.

### **4.3 Presence/Absence Surveys**

4.3.1 One survey of the building was carried out, consisting of one dusk emergence on 20 August 2021. Sample sonograms recorded at the site are given at Appendix III.

- 4.3.2 Sunset on 20 August was at 20.14; the survey started at 19.59 and ended at 21.59. No bats were recorded emerging from the building during the survey.
- 4.3.3 Moderate levels of activity were noted during the survey from a good variety of bats around the middle portion of the survey until they all commuted away to other areas. Pipistrelles were seen foraging above the canopy of a pear tree in the garden and in front of B1. Peak count was two bats at any one time

## 5 Evaluation

### 5.1 Introduction

5.1.1 This chapter presents an assessment of likely impacts to roosting bats as a result of the development proposals before making recommendations for avoidance, mitigation, enhancement or compensatory measures where necessary.

### 5.2 Presence or Absence of Bats

5.2.1 The survey results provide a good level of confidence that bats were absent from the building during the 2021 peak breeding season.

5.2.2 Surveys were carried out at an appropriate time of year and weather conditions were within acceptable parameters. The results are therefore considered to provide an accurate account of the bat roost status of the buildings.

### 5.3 Species Assemblage

5.3.1 Species diversity recorded during the presence/absence surveys included four species. Their local and national conservation status is listed in Table 5.1 (BCT, 2010; Mathews *et al.*, 2018; Russ, 2012). At least four of these species have previously been recorded within 2km of the site, as confirmed during the desk study stage.

5.3.2 *Myotis* sp. call parameters overlap significantly and it is not normally possible to conclusively identify them to species level unless they are in the hand. The low number of *Myotis* sp. calls recorded within the survey area were most closely matched to the call parameters of Brandt's *M. brandtii*, Bechstein's *M. bechsteini*, Daubenton's *M. daubentonii* and whiskered *M. mystacinus* bats. The survey area falls broadly within the known distribution of all four species, but Bechstein's bat is extremely rare and found almost exclusively within woodland habitat ((e.g. Russ, 2012; Dietz & Kiefer, 2016).

**Table 5.1: Conservation status of recorded bat species (abundance and distribution)**

Species	Sussex abundance/distribution	UK abundance/distribution	UK status
Bechstein's	Very rare	Very rare, southern	Least concern
Brandt's/whiskered	Scarce, widespread / Scarce, widespread	Widespread, scarce in England & Wales / Scarce, widespread, absent in Scotland	Data deficient
Daubenton's	Fairly abundant, widespread	Widespread, fairly abundant	Least concern
Natterer's	Scarce, widespread	Scarce, widespread	Least concern

Species	Sussex abundance/distribution	UK abundance/distribution	UK status
Noctule	Uncommon, widespread	Uncommon, widespread, absent in Scotland	Least concern
Common pipistrelle	Abundant, widespread	Widespread, abundant	Least concern
Soprano pipistrelle	Fairly common, widespread	Fairly common, widespread	Least concern

## 5.4 Impact Assessment

### **Designated sites**

5.4.1 No designated sites notified for their bat populations will be affected by the proposals for the site.

### **Roosts – buildings/structures**

5.4.2 No bats roosts in buildings/structures will be affected by the proposals for the site.

### **Roosts – trees**

5.4.3 No bats roosts in trees will be affected by the proposals for the site.

### **Foraging and commuting habitats**

5.4.4 Habitats within the site include buildings and a residential garden with shrubs and trees, features which are commonplace in the surrounding area and provide habitats of low to moderate suitability for foraging bats. Proposals for the site are limited to works to the existing building only. No bat activity surveys were considered necessary.

### **Summary**

5.4.5 In conclusion, the survey results demonstrate that there are very unlikely to be any direct or indirect impacts to bats, their breeding/resting places or foraging/commuting habitats as a result of the proposed development. Bats are not considered to present a constraint to development proposals for the site.

## 5.5 Recommendations for Avoidance, Mitigation and Compensation of Impacts

5.5.1 No specific avoidance, mitigation or compensation measures for bats are required to be implemented as part of the currently proposed scheme because no roosting bats were recorded. However, precautionary measures are nevertheless advised and are listed in Table 5.2.



**Table 5.2: Recommended precautionary measures**

#	Recommended precautionary measures
<b>R1</b>	The current report is based on one presence/absence survey for Building B1 during the 2021 active season, which is proportionate to the buildings' suitability for roosting bats. If commencement of the works is significantly delayed (e.g. by more than 18 months from the survey date), updated active season surveys will need to be undertaken to record any changes in roosting status.
<b>R2</b>	The survey results indicate that bats are likely to be absent from building B1. In the unlikely event that bats are encountered during the works, site operatives will be advised to cease activity in the vicinity while advice from an ecologist is sought. The ecologist will then assess the most appropriate course of action before works continue.
<b>R3</b>	Avoid the use of external lighting, or keep its use to the minimum required for its intended purpose, during both construction and operation. This will be of benefit to nocturnal species e.g. bats. Where external lighting is to be provided, it should be low-level, directional lighting with minimal spill and glare, and consideration should be given to reduced hours of operation and/or a movement responsive system of control. Use narrow-spectrum bulbs and light sources that emit minimal UV light, avoiding white and blue wavelengths of the spectrum. Use glass lantern covers instead of plastic to filter UV light.
<b>R</b>	The building, hedgerows, trees and shrubs are also suitable for nesting birds. Negative impacts on breeding birds will be avoided by undertaking clearance and demolition works which would result in removal of potential nesting habitats (including vegetation and buildings) outside of the bird breeding season, which runs from 1 March to 31 August. Removal of nesting bird habitats will therefore be carried out between September and February. Any construction works undertaken within the bird breeding season where suitable bird breeding habitat exists will require a site check for nesting birds by a suitably qualified ecologist. This will take place no more than two days prior to works commencing. This is to ensure that no disturbance to active bird nests occurs. If a nest is found it must be cordoned off and works adjacent to the nest must be delayed until such time that the chicks have fledged from the nest. This will be supervised by a suitably qualified ecologist.

## 5.6 Recommendations for Ecological Enhancement

5.6.1 The following ecological enhancements will be considered for the site to contribute towards achieving net gains for biodiversity in line with the requirements of local and national policy and guidance.

### **Roosting opportunities**

5.6.2 The value of the site for bats can be enhanced by installing a range of artificial roost boxes. It is recommended that these are incorporated within new building facades. Boxes suitable for a wide range of species should be used, for instance:

- ▶ New buildings: integral bat tubes could be installed within buildings which face vegetated areas. Bat tubes can be incorporated into the design of the building so that only the access holes are visible from the exterior of the building. The Schwegler 1FR or 2FR Bat Tube is designed to meet the characteristic requirements of the types of bats that inhabit buildings

such as pipistrelles *Pipistrellus spp.* or serotines *Eptesicus serotinus*. It is designed to be installed on the external walls of buildings, either flush or beneath a rendered surface.

- ▶ Pipistrelles *Pipistrellus sp.*: bat boxes suitable to install on mature trees either within or at the edges of the development include the Schwegler 1FF Flat Bat Box, or other manufacturer’s equivalent.
- ▶ Noctules *Nyctalus spp.* and brown long eared bats *Plecotus auritus*: bat boxes suitable to install on mature trees either within or at the edges of the development include the Schwegler 2F General Purpose Bat Box or the 2FN Woodland Bat Box, or other manufacturer’s equivalent.

5.6.3 General considerations for installation of bat boxes are listed in Box 3 below, while bat box specifications are listed at Appendix III.

**Plant species which encourage bats**

5.6.4 It is recommended that new botanical species planting at the site aims to encourage a diverse range of invertebrate food sources and increased bat roost potential. The table at Appendix IV lists suggested species of plants that can provide benefit for bats either by providing a food source for insects on which bats feed, or providing additional roosting opportunities (Gunnell et al., 2012). The plant species are predominantly native to Britain, but not all species will be suitable in all situations.

<b>Box 3: Considerations &amp; key requirements for crevice-dwelling bats (after Gunnell et al., 2013)</b>	
<b>Species</b>	Barbastelle, serotine, Bechstein’s, Brandt’s, Daubenton’s, whiskered, noctule, Leisler’s, pipistrelles (common, soprano & Nathusius’)
<b>Consideration</b>	<b>Solution</b>
Where in a development	Anywhere that the access is not illuminated by artificial lighting If possible they should be installed facing vegetation features such as mature hedgerows or trees, but with a clear line of flight for bats entering or leaving the roost
Where in a building	Summer maternity roosts in most southerly or westerly aspect for solar heating, or in a location that provides thermal stability Male roosts and winter hibernation roosts on northerly aspect
Height	2m–7m, preferably >4m above ground level
Dimensions	Any size as long as some components of the area are crevices of c.20-30mm wide Total area of >c.1m <sup>2</sup> would be useful for summer maternity roosting Male roosts contain a smaller number or individual bats
Access dimensions	20mm–50mm (w) x 15mm–20mm (h)

**Box 3: Considerations & key requirements for crevice-dwelling bats (after Gunnell et al., 2013)**

Other considerations	Rough interior surface (for grip) Non-toxic and non-corrosive materials Absence of breathable roofing membranes to avoid the risk of entanglement Suitable thermal properties (reducing 24hr fluctuations), providing stability but allowing maximum thermal gain for summer roosts The use of thermal insulation materials for maternity roosts should be carefully considered in relation to other desired properties e.g. energy efficiency
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## 5.7 Conclusions

- 5.7.1 The proposed development is unlikely to result in negative impacts to roosting bats. Proportionate measures are recommended to manage residual risks associated with the site's ongoing suitability for these species.

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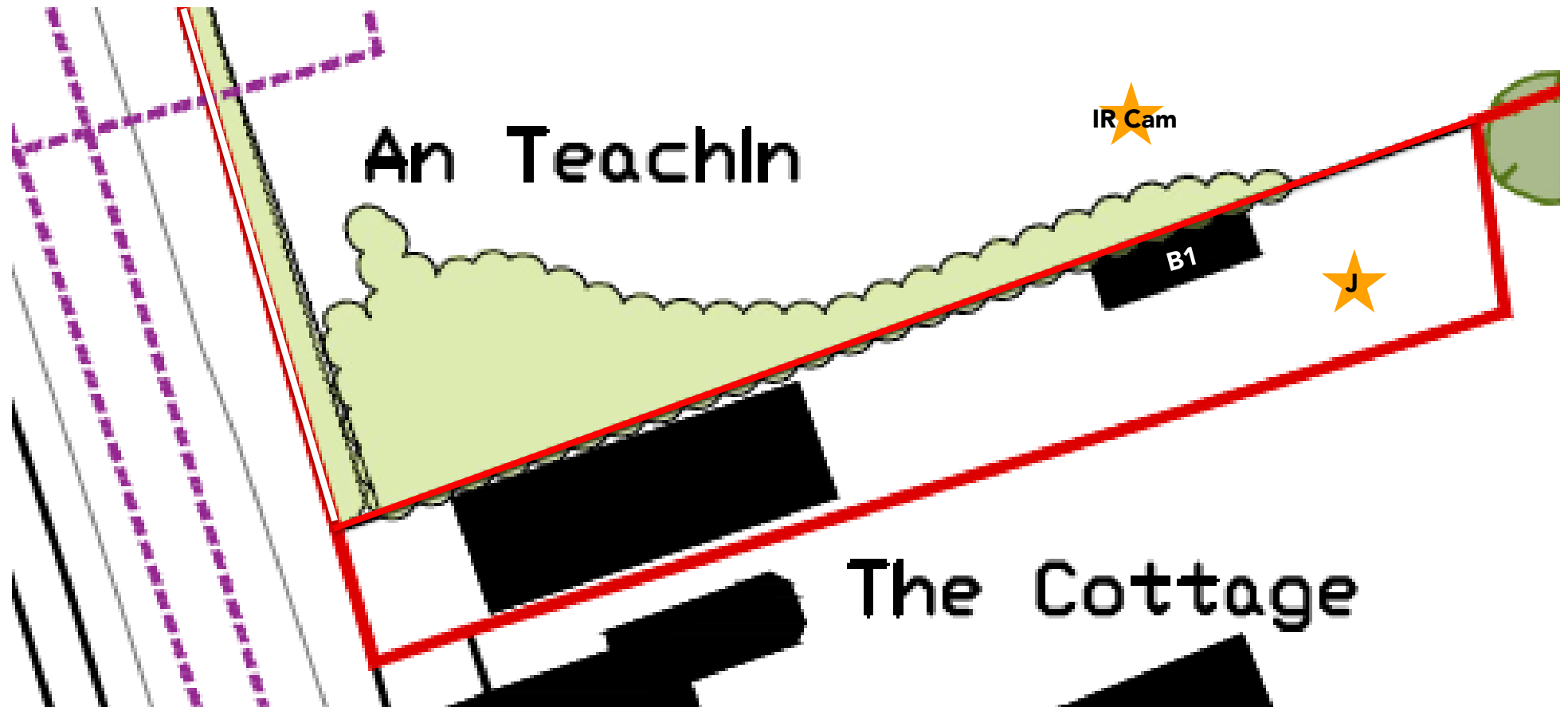
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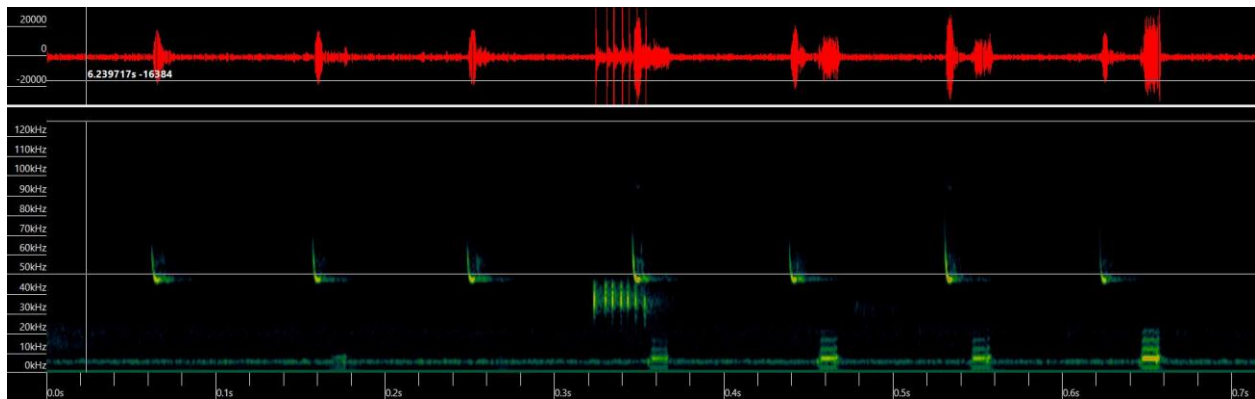
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## **Appendix I: Surveyor Positions**

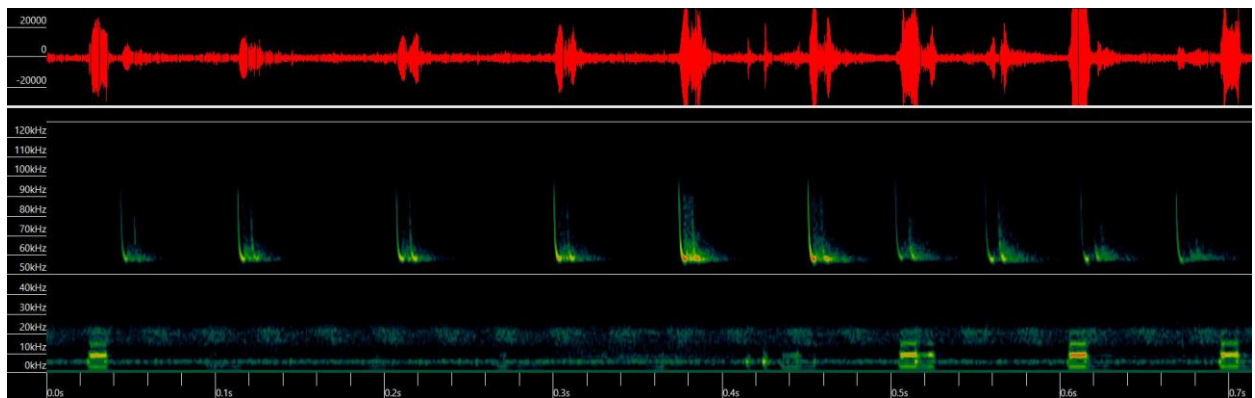
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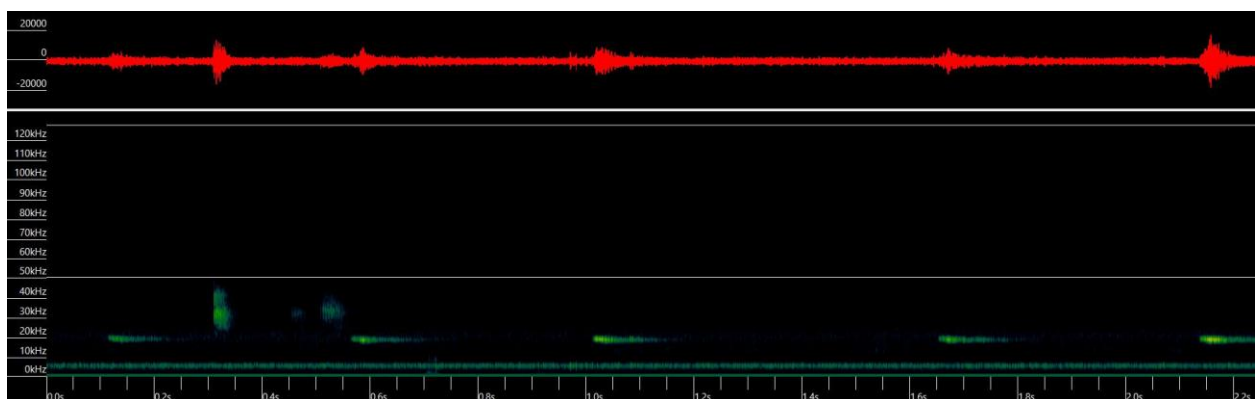
## Appendix II: Example Sonograms



Common pipistrelle recorded at 21.27



Soprano pipistrelle recorded at 20.43



Noctule recorded at 20:43

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## Appendix III: Bat Box Specifications



**Schwegler 2F DFP General Purpose Bat Box:**

Apex roof to mimic tree cavity, suitable for noctule, brown long-eared, Bechstein's and Daubenton's. Internal double front panel creates a crevice suitable for pipistrelles

**Siting and Positioning:**

On a tree-trunk or on buildings

**Cleaning and Inspection:**

Easy cleaning and inspection due to removable front panel. If occupied by bats, inspection and cleaning must be carried out by a licensed professional

**Entrance hole:**

Slotted hole

**Occupants:**

Bats

**Material:**

Air-permeable and long lasting SCHWEGLER wood-concrete



**Schwegler 1FF Flat Bat Box:**

Open at bottom so cleaning not required. Varied internal roost surfaces. Suitable for crevice roosters such as pipistrelles, and large enough for use as maternity roost

**Siting & positioning:**

On the tree-trunk or on buildings

**Cleaning and inspection:**

Open at bottom, cleaning not required. Easy to inspect due to removable front panel. If occupied by bats, inspection and cleaning must be carried out by a licensed professional

**Entrance hole:**

Width 12-24 mm x Length 21cm

**Occupants:**

Bats

**Material:**

Air-permeable and long lasting SCHWEGLER wood-concrete

**Kit includes:**

Roost box with removable front panel  
Galvanized steel hanger - forestry approved  
Aluminium Nail - forestry approved

**Colour:**

Black

**Dimensions:**

Height: 350mm

Dia.: 165mm

**Weight:**

4kg approx.

**Kit includes:**

Roost box with swing-away front panel  
Galvanized steel hanger - forestry approved  
Aluminium Nail - forestry approved

**Colour:**

Black

**Dimensions:**

Depth: 140mm

Width: 270mm

Height: 430mm

**Weight:**

10kg approx.



**Schwegler 2FN Woodland Bat Box:**

Two entrances, one at the rear against the tree trunk and one at the front. A domed roof to form clusters and an increased internal height. Suitable for brown long-eared and woodland species e.g. noctule

**Siting and Positioning:**

On a tree-trunk or on buildings

**Cleaning and Inspection:**

Easy cleaning and inspection due to removable front panel. If occupied by bats, inspection and cleaning must be carried out by a licensed professional

**Schwegler 1FR/2FR Bat Tube:**

Suitable for building into or mounting onto external walls. Open at bottom so cleaning not required. Can be used individually (1FR) or by connecting two or more 2FR. Suitable for bats that use buildings e.g. pipistrelles or serotine

**Siting & positioning:**

Can be installed on external walls – either flush or beneath a rendered surface in concrete and, during renovation work, under wooden panelling or in building cavities (e.g., slab-type building structures, bridges, etc). If required, it can be

**Entrance hole:**

Slotted hole

**Occupants:**

Bats

**Material:**

Air-permeable and long lasting SCHWEGLER wood-concrete

**Kit includes:**

Roost box with removable front panel  
Galvanized steel hanger - forestry approved  
Aluminium Nail - forestry approved

**Colour:**

Black

**Dimensions:**

Height: 360mm

Dia.: 160mm

**Weight:**

4.9kg approx.

painted using standard air-permeable exterior paint. Birds will not occupy this box.

**Cleaning:**

Maintenance-free

**Entrance hole:**

Height: 20mm

Width: 150mm

**Occupants:**

Bats

**Material:**

SCHWEGLER wood-concrete

**Kit includes:**

1 x Bat Tube

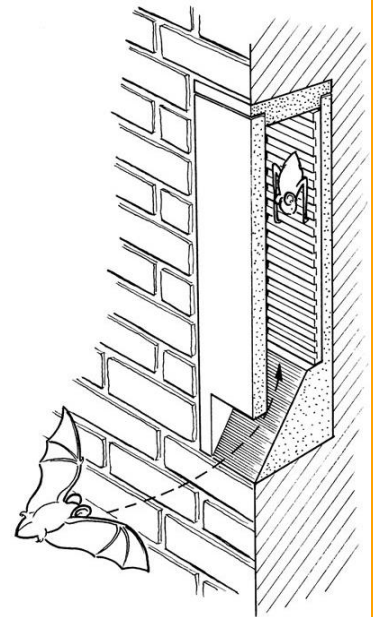
**Colour:**

Grey material, paintable with standard air-permeable wall-paint

**Dimensions:**

Height: 475mm; Width: 200mm; Depth: 125mm

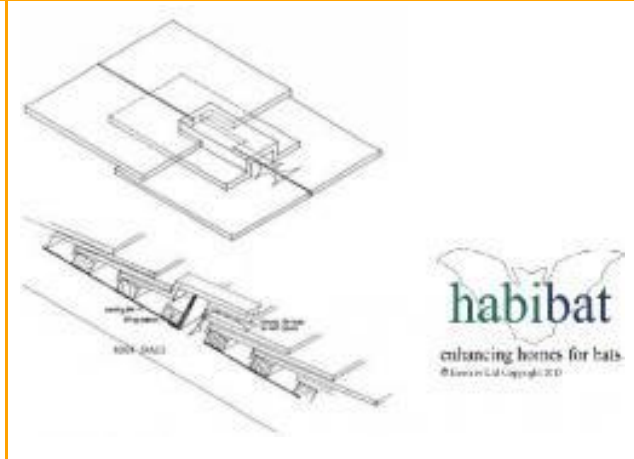
**Weight:** 10kg approx.



**Ibstock Enclosed Bat Box (Type B or C):**

- Designed specifically for pipistrelle bats
- Available in all brick types
- Discrete home for bats
- Various sizes
- Several roosting zones are created inside the box
- Bats are contained within the bat box itself
- Maintenance free with entrance at the base
- Suitable for new build & conservation work

- Bat Box Type B: 215 x 215 or 215 x 290 / Bat Box Type C: 215 x 215 or 215 x 290



**Habibat Bat Access Tile (available in clay, slate or lead):**

The Habibat Access Tile is a roof tile which has been modified to allow bats either into the batten space (between tiles and liner for pipistrelles) or into the roof void (for brown long-eared bats).

The Habibat Access Tile consists of a vacuum-moulded plastic cowl embedded into the tile. The access cowl is designed to prevent rainwater ingress to the roof but is of correct size and roughened to be suitable for bats.

The 5 piece clay tile set fits on any roof with plain clay tiles to provide access for bats either behind the tiles or into the roof space.

The slate tile consists of a standard sized slate, with a capped vent which allows access into the batten space (between tiles and liner for pipistrelles) or into the roof void (for brown long-eared bats).

Dimensions: (H) 418 x (W) 375 x (D) 80mm

Entrance hole dimensions: (H) 20 x (W) 100mm

Weight: 1.3kg

## **Appendix IV: Plant Species which encourage Bats**

Please see following pages which are drawn from Gunnell *et al.* (2012).

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Plant Species	Common name	Native	Type	Benefit	Soil	Light	Extensive green roofs	Living walls	Rain Gardens	Hedges/trees	Beds/borders
<i>Acer campestre</i>	Field maple	N	T/S	C	Any	Sun / shade				Y	
<i>Acer platanoides</i>	Norway maple		T	S	Well drained / alkaline	Sun / shade				Y	
<i>Acer saccharum</i>	Sugar maple		T	S	Any	Sun / shade				Y	
<i>Achillea millefolium</i>	Yarrow	N	HP	C,F	Well drained	Sun	Y				
<i>Ajuga reptans</i>	Bugle	N	HP	C,F	Any	Sun / shade	Y				
<i>Anthyllis vulneraria</i>	Kidney vetch	N	HP	F	Well drained	Sun	Y				
<i>Aubrieta deltoidea</i>	Aubrieta		H	F	Well drained	Sun / shade		Y			
<i>Betula pendula</i>	Silver birch	N	T	C	Sandy / Acid	Sun				Y	
<i>Cardamine pratensis</i>	Cuckoo-flower	N	HP	F	Moist	Sun / shade					Y
<i>Carpinus betulus</i>	Hornbeam	N	T	C	Clay	Sun				Y	
<i>Centaurea nigra</i>	Common knapweed	N	HP	C,F	Dry, not acid	Sun	Y				Y
<i>Centranthus ruber</i>	Red valerian		HP	F	Well drained / alkaline	Sun	Y				Y
<i>Clematis vitalba</i>	Old man's beard	N	C	F	Well drained / alkaline	Sun				Y	
<i>Corylus avellana</i>	Hazel	N	S	C	Any dry	Sun / shade		Y		Y	
<i>Crataegus monogyna</i>	Hawthorn	N	S	S,C	Any	Sun / shade				Y	
<i>Daucus carota</i>	Wild carrot	N	Bi	S,C,F	Any	Sun	Y				Y
<i>Dianthus spp.</i>	Pinks	N	A-Bi	F	Well drained	Sun	Y	Y			Y
<i>Digitalis purpurea</i>	Foxglove	N	Bi	C	Well drained	Shade / partial shade				Y	Y
<i>Erica cineria</i>	Bell heather	N	S	F	Sandy	Full sun					Y
<i>Erysimum cheiri</i>	Wallflower		Bi-P	F	Well drained	Sun		Y			
<i>Eupatorium cannabinum</i>	Hemp agrinomy	N	H	F	Moist	Sun / shade					Y
<i>Fagus sylvatica</i>	Beech	N	T	C,R	Well drained / alkaline	Sun / shade				Y	
<i>Foeniculum vulgare</i>	Fennel		H	F	Well drained	Sun					Y
<i>Fraxinus excelsior</i>	Common ash	N	T	C,R	Any	Sun / shade				Y	
<i>Hebe spp.</i>	Hebe species		S	F	Well drained	Sun / shade				Y	Y
<i>Hedera helix</i>	Ivy	N	C	F,C	Any	Sun / shade		Y		Y	Y
<i>Hesperis matronalis</i>	Sweet rocket		H	F	Well drained / dry	Sun / shade					Y
<i>Hyacinthoides non-scripta</i>	Bluebell	N	B	F	Loam	Shade / partial shade		Y		Y	Y
<i>Ilex aquifolium</i>	Holly	N	T	C	Any	Sun / shade				Y	
<i>Jasminum officinale</i>	Common jasmine		C	F	Well drained	Sun		Y			Y
<i>Lavandula spp.</i>	Lavender species		S	F	Well drained / sandy	Sun		Y			Y
<i>Linaria vulgaris</i>	Toadflax	N	HP	C	Well drained / alkaline	Sun	Y				Y
<i>Lonicera periclymenum</i>	Honeysuckle	N	C	F	Well drained	Sun		Y		Y	
<i>Lotus corniculatus</i>	Bird's foot trefoil	N	HP	F	Well drained / dry	Sun	Y				Y
<i>Lunaria annua</i>	Honesty		Bi	F	Any	Sun / partial shade	Y				
<i>Malus spp.</i>	Apple		T	C	Any	Sun				Y	
<i>Matthiola longipetala</i>	Night-scented stock		A	F	Well drained/ moist	Sun			Y		
<i>Myosotis spp.</i>	forget-me-not	N	A	F	Any	Sun	Y	Y			
<i>Nicotiana glauca</i>	Ornamental tobacco		A	F	Well drained/ moist	Sun / partial shade			Y		
<i>Oenothera spp.</i>	Evening primrose species		Bi	F	Well drained/ dry	Sun	Y				
<i>Origanum vulgare</i>	Marjoram	N	HP	F	Well drained/ dry	Sun	Y	Y			
<i>Populus alba</i>	White poplar	N	T	C	Clay loam	Sun				Y	
<i>Primula veris</i>	Cowslip	N	HP	F	Well drained/moist	Sun / partial shade	Y				
<i>Primula vulgaris</i>	Primrose	N	HP	F	Moist	Part shade	Y	Y		Y	
<i>Prunus avium</i>	Wild cherry	N	T	C	Any	Sun				Y	

Plant Species	Common name	Native	Type	Benefit	Soil	Light	Extensive green roofs	Living walls	Rain Gardens	Hedges/trees	Beds/borders
<i>Prunus domestica</i>	Plum		T	C	Well drained/ moist	Sun				Y	
<i>Prunus spinosa</i>	Blackthorn	N	S	C	Any	Sun / partial shade				Y	
<i>Quercus petraea</i>	Sessile oak	N	T	C,R	Sandy loam	Sun / shade				Y	
<i>Quercus robur</i>	Common oak	N	T	C,R	Clay loam	Sun / shade				Y	
<i>Rosa canina</i>	Dog rose	N	S	C	Any	Sun			Y	Y	
<i>Salix spp.</i>	Willow species	N	S	S,C	Moist	Sun / shade			Y	Y	
<i>Sambucus nigra</i>	Elder	N	T	C	Clay loam	Sun				Y	
<i>Saponaria officinalis</i>	Soapwort	N	HP	F	Any	Sun					
<i>Saxifraga oppositifolia</i>	Saxifrage	N	HP	C	Well drained	Sun	Y	Y			
<i>Scabiosa columbaria</i>	Small scabious	N	HP	F	Well drained/ alkaline	Sun	Y				
<i>Sedum spectabile</i>	Ice plant		HP	F	Well drained/ dry	Sun	Y				
<i>Silene dioecia</i>	Red campion	N	HP	F	Any	Shade / partial shade		Y	Y	Y	
<i>Sorbus aucuparia</i>	Rowan	N	T	C	Well drained	Sun				Y	
<i>Stachys lanata</i>	Lamb's ears		HP	F	Well drained/dry	Sun	Y				
<i>Symphotrichum spp.</i>	Michaelmas daisies		HP	F	Any	Sun					
<i>Tegetes patula</i>	French marigold		A	F	Well drained/moist	Sun					
<i>Thymus serpyllum</i>	Creeping thyme	N	HP/S	F	Well drained/dry	Sun	Y	Y			
<i>Tilia x europaea</i>	Common lime		Type	C	Any	Sun / shade				Y	
<i>Trifolium spp.</i>	Clover species	N	HP	F	Any	Sun	Y				
<i>Valeriana spp.</i>	Valerian species	N	HP	F	Moist	Sun / partial shade			Y		
<i>Verbascum spp.</i>	Mulleins	N	Bi,HP	C	Well drained	Sun	Y				
<i>Verbena bonariensis</i>	Verbena		HP	F	Well drained/moist	Sun					
<i>Viburnum lantana</i>	Wayfaring tree	N	S	C	Any	Sun / shade				Y	
<i>Viburnum opulus</i>	Guelder rose	N	S	C	Moist	Sun / shade			Y	Y	
<i>Viola tricolor</i>	Pansy	N	A	F	Well drained/moist		Y	Y			

The table above is derived from the BCT publication Landscape and Urban Design for Bats and Biodiversity (Gunnell et al., 2012) and lists suggested plant species that can provide benefit for bats either by providing a food source for insects or roost potential. The plants listed are predominately native to Britain. The small group of non-native plants is included for their documented value for wildlife. This list has been checked against Natural England's list of invasive non-native plants.

HP: Herbaceous perennial	T: Tree	A: Annual	<b>Benefit:</b>				
Bi: Biennial	S: Shrub	B: Bulb	C: Moth caterpillar food plant	F: Flowers attract adult moths			
BiP: Biennial perennial	H: Herb	C: Creeper/climber	S: Sap sucking insects (e.g. whiteflies)	R: Good roost potential			



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## Appendix V: Legal and Technical Limitations

- This report has been prepared by Urban Edge Environmental Consulting Ltd (UEEC Ltd) with all reasonable skill, care and diligence within the terms of the contract made with the Client to undertake this work, and taking into account the information made available by the Client. No other warranty, expressed or implied, is made as to the professional advice included in this report or any other services provided by us.
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- The advice provided in this report does not constitute legal advice. As such, the services of lawyers may also be considered to be warranted.
- Unless otherwise stated in this report, the assessments made assume that the sites and facilities that have been considered in this report will continue to be used for their current planned purpose without significant change.
- All work carried out in preparing this report has utilised and is based upon UEEC Ltd's current professional knowledge and understanding of current relevant UK standards and codes, technology and legislation. Changes in this legislation and guidance may occur at any time in the future and may cause any conclusions to become inappropriate or incorrect. UEEC Ltd does not accept responsibility for advising the Client or other interested parties of the facts or implications of any such changes;
- Where this report presents or relies upon the findings of ecological field surveys (including habitat, botanical or protected/notable species surveys), its conclusions should not be relied upon for longer than a maximum period of two years from the date of the original field surveys. Ecological change (e.g. colonisation of a site by a protected species) can occur rapidly and this limitation is not intended to imply that a likely absence of, for instance, a protected species will persist for any period of time;
- This report has been prepared using factual information contained in maps and documents prepared by others. No responsibility can be accepted by UEEC Ltd for the accuracy of such information;
- Every effort has been made to accurately represent the location of mapped features, however, the precise locations of features should not be relied upon;
- Populations of animals and plants are often transient in nature and a single survey visit can only provide a general indication of species present on site. Time of year when the survey was carried out, weather conditions and other variables will influence the results of an ecological survey (e.g. it is possible that some flowering plant species which flower at other times of the year were not observed). Every effort has been made to accurately note indicators of presence of protected, rare and notable species within and adjacent to the site but the possibility nonetheless exists for other species to be present which were not recorded or otherwise indicated by the survey;
- Any works undertaken as a consequence of the recommendations provided within this report should be subjected to the necessary health & safety checks and full risk assessments.

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