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Report prepared for: Wilsons Wood Ltd

For the Site of: The Barn, Hogg Pitts Bottom, Flaunden, Hertfordshire, HP3 0QB

Version:	Written by:	Checked by:	Final:
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Final	Martin O'Connor 31/08/2022	Tanya O'Connor 01/09/2022	Martin O'Connor 02/09/2022

Cherryfield Ecology has prepared this report for the named clients use only.

Ecological reports are limited in shelf life, Natural England usually expect reports for licences to be from the most recent or current season. Therefore, should the project not proceed within 12 months of this report an updated survey should be undertaken in order to check for changes that may have occurred on site. Information is believed to be accurate at the time of survey; recommendations are made without bias based on good practice guidelines within the industry. However, species presence and ecological parameters can change over time.

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# Emergence and Activity Bat Survey (EBS)

## 0.0 Non-Technical Summary

### 0.1 Background

This report follows national guidelines Collins (2016) allowing for dusk and dawn surveys and recommends mitigation and compensation if considered necessary. If a deviation from the guidelines has been made, this will be detailed in the Method Section.

The following report details the findings and recommendations for the site of The Barn, Hogg Pitts Bottom, Flaunden, Hertfordshire, HP3 0QB.

The client commissioned Cherryfield Ecology to undertake an EBS as the proposals include for the conversion of the existing structure to a dwelling.

### 0.2 Results and Findings

Following a Stage 1 Ecological Assessment undertaken on 22/06/2022 (Cherryfield Ecology, 2021), further surveys were recommended.

The surveys have shown a single common pipistrelle using the building as a day roost. All the surveys show that the surrounding garden are used by foraging and commuting bats.

### 0.3 Impact Assessment and Recommendations

A bat roost will be lost when works are carried out.

Alternate roosts will need to be provided before development on B1 commences. A bat licence (Bat Mitigation Class) will be required post-grant of planning in order to allow the demolition to proceed lawfully. (Please refer to Section 4.3 of this report for further details).

The findings outlined in this report are valid for one year, after which updated surveys will be required.

Enhancements and mitigation are recommended (please see Section 4.3 for further details).

## 1.0 Introduction

### 1.1 Aim

The aim of this survey is to gather additional information from the site to establish species, population and entry/exit points of bats to aid in the design of mitigation and compensation for bats in the development. The information is used to help inform a licence application (if required) and to inform the client and their architect/planner of necessary changes in the design that may be required to ensure bats are protected during works. It should be read in conjunction with any Stage 1 survey such as a Preliminary Roost Assessment (PRA) that may have been undertaken.

### 1.2 Background Information

The client, Wilsons Wood Ltd, has commissioned Cherryfield Ecology to undertake an EBS for the site of The Barn, Hogg Pitts Bottom, Flaunden, Hertfordshire, HP3 0QB. Planning permission is being sought to convert the existing structure to a dwelling.

This survey has checked all buildings, trees (from ground level only) or structures due to be affected by the proposals for bats, signs of bats or habitat value e.g. crevices, gaps or holes that cannot be checked for a variety of reasons. In addition, surveyors have been positioned around the building, tree or structure to allow for emerging/re-entering bats to be watched for.

The inspections were conducted on the 02/08/2022, 16/08/2022 and 31/08/2022.

The survey can only ever provide a 'snapshot' of the site at the time of the survey and circumstances may change following this report. Health and Safety restrictions or obstructions may limit the ability to find or see emergence, re-entry and/or evidence. Biological records have been requested to give the report context and allow a study of the surrounds. The information is often sensitive and, therefore, a synopsis is provided. The survey can be conducted between May and September with the optimal season for surveying maternity colonies limited to mid-May to August inclusive, however it can also be limited due to bad weather, when bats are less active.

All 18 species of bat common in the UK (17 known to be breeding) are fully protected under the Wildlife and Countryside Act (as amended) 1981 through inclusion in Schedule V of the Act. All bat species in the UK are also included in Schedule II of The

Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, which transpose Annex II of the Directive 92/43/EEC 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora (“Habitats Directive”) which defines United Kingdom protected species of animals.

Bats species are afforded further protection by the Countryside and Rights of Way Act 2000; and the Natural Environment and Rural Communities Act 2006.

This combined legislation makes it an offence to:

- Intentionally or deliberately kill, injure or capture bats.

- Deliberately disturb bats, whether at roost or not.

- Damage, destroy or obstruct access to bat roosts.

- Possess or transport bats, unless acquired legally.

- Sell, barter or exchange bats.

A bat roost is well-defined by the legislation as the ‘resting place’ of a bat. However, the word roost is used to describe this resting place and is generally accepted as the word describing where a bat or bats rest, feed or sleep.

## 2.0 Methods

The survey follows the national guidelines Collins (2016) and Interim Guidance Note: Use of night vision aids for bat emergence surveys and further comment on dawn surveys (Bat Conservation Trust, May 2022) the following equipment is available for the inspection:

Torches (e.g. LED Lensar type).

Ladders (Standard 4m telescopic surveying ladder).

Endoscope where holes, cracks and crevices are accessible.

Mirrors (extendable and movable mirror face).

Binoculars (Pentax close focus).

Thermometer/hygrometer.

Camera.

Sample bags for collecting dropping and feeding evidence.

Echo Meter Touch, EM3, and Pettersson D240X.

IR night vision HD Camcorder, 12v IR flood lights.

FLIR one Thermal Imaging Camera (when required).

Night Vision Aids (NVA's) are used to cover the building alongside surveyors. These are not designed to replace surveyors, rather provide night vision, allowing for more accurate survey effort and when found, roost locations. The cameras may not always capture bats entering/exiting roosts due to the size of the building, terrain and other factors. Video is processed in Openshot video editor and checked in the office after the survey is completed, stills and snapshots are taken and used in reports, as per the guidelines.

Surveyors are positioned around the building(s), tree or structure in order to cover all elevations. The survey then observes for emerging or entering bats from suitable features such as holes, cracks and crevices. Notes on commuting and foraging bats are also made in the surrounds.

If a deviation from the guidelines has been made, the reason and justification will be explained below:

No deviation from the standard guidelines has been made for this survey set.

## 2.1 Limitations

This survey provides a snapshot of the site at the time of the survey(s) only. Bats are highly mobile and can turn up from time to time unexpectedly. All care has been taken to ensure the results and recommendations are suitable to the context of the development and the information gathered on surveys.

Table 1: Habitat value (likelihood) of bat presence assessed against Collins (2016) guidelines Source: Adapted from Collins (2016) pp 35, Table 4.1.

Likelihood of bat presence (Habitat Value)	Features that bats can and will use, regardless of evidence being present.
Confirmed Bat Presence	Bats are found to be present during the survey. Evidence of bats is found to be present during the survey.
Higher likelihood of bat presence.	Pre-20th century or early 20th century construction. Agricultural buildings of traditional brick, stone or timber construction. Large and complicated roof void with unobstructed flying spaces. Large (>20 cm) roof timbers with mortice joints, cracks and holes. Entrances for bats to fly through. Poorly maintained fabric providing ready access points for bats into roofs, walls, bridges, but at the same time not too draughty and cool. Roof warmed by the sun, in particular south facing roofs. Weatherboarding and/or hanging tiles with gaps. Low level of disturbance by humans. Bridge structures, follies, aqueducts and viaducts over water and/or wet ground.
Moderate and Lower likelihood of bat presence.	Modern, well-maintained buildings or built structures that provide few opportunities for access by bats. Small, cluttered roof space. Buildings and built structures comprised primarily of prefabricated steel and sheet materials. Cool, shaded, light or draughty roof voids. Roof voids with a dense cover of cobwebs and no sections of clean ridge board. High level of regular disturbance. Highly urbanised location with few or no mature trees, parkland, woodland or wetland.



	High levels of external lighting.
Negligible likelihood of bat presence.	No features suitable for roosting, minor foraging or commuting.

Notes on using this table

1 The features listed here may not be indicative of use of the site by bats during winter or spring.

2 Pre-1914 buildings may present the greatest likelihood of providing roost space for bats due to their design, materials used and age. Pre-1990 buildings, especially when close to good foraging habitat, and with favoured features such as cavity walls and soffits, also have a high likelihood of providing roost sites for some bat species.

3 Post-1990 buildings are generally less likely than older buildings to house roosts; however, some modern designs provide access to suitable roosting spaces for bats. Pipistrelles in particular occupy modern buildings and built structures providing that there are suitable access gaps (> 8mm) and provided the structure has appropriate characteristics for roosting.

### 3.0 Results

The following section details the results of the desk study, inspection and survey; it includes MAGIC information, biological records data and map/aerial photo information. The results detail the building, structure or tree (numbered for reference) description of any evidence found and habitat value if no evidence has been located.

#### 3.1 Desk Study

The desk study is centred on Grid Reference - TL014012 and Postcode - HP3 0QB.

Table 2: Weather Records

Date	Survey	Time: from/to	Weather: Start	Weather: Finish
02/08/2022	Dusk Emergence	20.37 to 22.37 SS: 20.52	Temp: 24 °C Humidity: 55% Cloudy: 30% Wind: 0/12 Rain: None	Temp: 23 °C Humidity: 74% Cloudy: 40% Wind: 0/12 Rain: None
16/08/2022	Dusk Emergence	20.10 to 22.10 SS: 20.26	Temp: 23 °C Humidity: 53% Cloudy: 100% Wind: 0/12 Rain: None	Temp: 19 °C Humidity: 74% Cloudy: 100% Wind: 0/12 Rain: heavy at the very end of the survey.
31/08/2022	Pre-Dawn	04.45 to 06.30 SR: 06.12	Temp: 15 °C Humidity: 80% Cloudy: 20% Wind: 0/12 Rain: None	Temp: 15 °C Humidity: 80% Cloudy: 20% Wind: 0/12 Rain: None

### 3.2 MAGIC

The following statutory sites and Natural England Protected Species (NEPS) have been located within the 2km search area (Figure 1):

There are 0 statutory sites located within the search area.

There are 2 NEPS licences granted for bats within the search area:

Brown Long-Eared Plecotus auratus, approx. 1500m south of the site (Licence 2011-3347)

Common Pipistrelle Pipistrellus pipistrellus, approx. 1500m Northwest of the site (Licence 2018-36672).

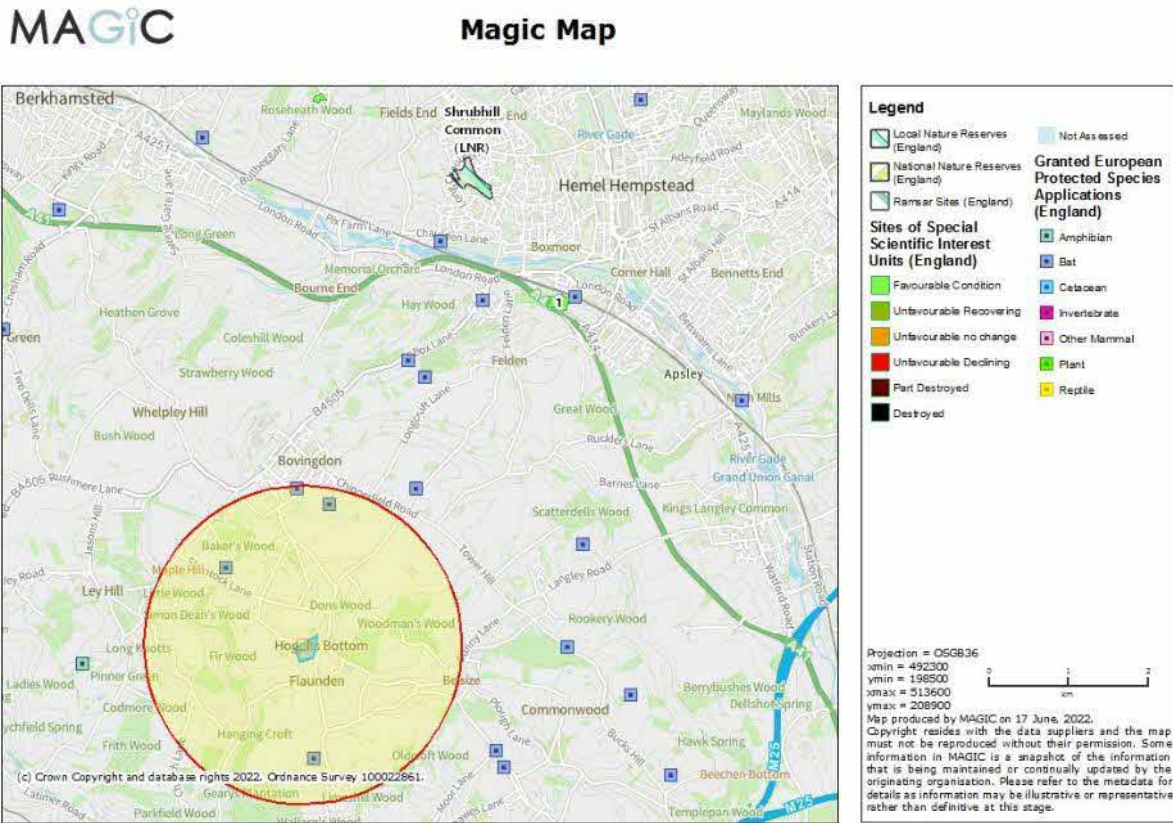


Figure 1: Magic Map Search

### 3.3 Biological Records Data

A 1km data search of existing records for protected species and nature reserves has been commissioned, below details the results and site context.

Biological records were obtained from Hertfordshire Environmental Records Centre (2022).

Table 3: Biological Records

Species	Number of Records	Closest record (accuracy)	Most recent record (year)
Barbastelle <i>Barbastella barbastellus</i>	1	>1km (1km)	1999
Brown Long-Eared Plecotus <i>auritus</i>	25	621m (1m)	2012
Common Pipistrelle <i>Pipistrellus pipistrellus</i>	12	>1km (1m)	2020
Daubenton's Myotis <i>daubentonii</i>	7	>1km (1km)	2005
Leisler's Nyctalus <i>leislerii</i>	2	>1km (10m)	2005
Nathusius' Pipistrelle <i>Pipistrellus nathusii</i>	0	n/a	n/a
Natterer's Myotis <i>nattererii</i>	28	619m (1m)	2005
Noctule Nyctalus <i>noctula</i>	4	>1km (1m)	2020
Serotine <i>Eptesicus serotinus</i>	1	604m (10m)	1999
Soprano Pipistrelle <i>Pipistrellus pygmaeus</i>	3	>1km (10m)	2014
Unidentified Bat Chiroptera	1	>1km (10m)	1998
Unidentified Long-Eared Plecotus sp.	3	>1km (10m)	2014
Unidentified Myotis <i>Myotis</i> sp.	3	>1km (10m)	2005
Unidentified Pipistrelle <i>Pipistrellus</i> sp.	13	614m (10m)	2008
Unidentified Vesper <i>Vespertilionidae</i>	0	n/a	n/a
Whiskered Myotis <i>mystacinus</i>	0	n/a	n/a
Whiskered/Brandt's Myotis <i>mystacinus/brandtii</i>	0	n/a	n/a

### 3.4 Site Location and Surrounds

The site is located in Flaunden, Hertfordshire and is surrounded by arable fields and medium density housing in the immediate local. Table 4 details the commuting, feeding and habitat features in a 1km radius of the site.

Table 4: Habitat features suitable for bat use in the general area.

Feature	Description
Water course	There are no significant water courses within the search area.
Water bodies	There are no significant water bodies within the search area.
Woodland	Lower Plantation is found approximately 400m to the East. Fir Wood is found approximately 853m to the Southwest. Copses found throughout the vicinity of the site.
Linear e.g. hedgerows	Field boundary hedgerows dominate the surroundings.
Pasture/arable/grassland	Arable fields dominate the surroundings.
Other	St Mary Magdalene Church and church yard is found approximately 565m to the South.

### 3.5 Building, Tree or Other Structure

The following section details the structure(s) reference, bats located, evidence located and observed emergence/re-entry (see Figure 3 for Site Plan).

Building/tree/structure reference - B1 (Main Building)

### 3.6 Observations

Table 5: Results and observations of the building, tree or structure.

Surveyor	Building, Tree or Structure	Dates, Times and Survey Type	Bat Activity Observed
LB	B1	02/08/2022 20.37 to 22.37 SS: 20.52	Common pipistrelle (CP) <i>Pipistrellus pipistrellus</i> heard from 21.05 until the end of the survey, with bats passing through regularly. Brown long eared bat (BLEB) <i>Plecotus auritus</i> heard twice at 21.54 and 22.08.
DR	B1	As above	CP heard from 21.10 until the end of the survey, with bats passing through and feeding occasionally. BLEB seen from 21.55 until 22.07 passing. The bat was close to the building on several occasions.
MOC	B1	16/08/2022 20.10 to 22.10 SS: 20.26	CP emerged at 20.37 from near the gable end, thereafter CP heard until the end of the survey. Serotine (ES) <i>Eptesicus serotinus</i> seen and heard at 20.49 passing through.
JOC	B1	As above	CP heard from 20.7 until the end of the survey. ES heard at 20.49 passing over.
DR	B1	31/08/2022 04.45 to 06.30 SR: 06.12	CP heard from 05.03 until 05.46 passing through.
JP	B1	As above	CP heard from 04.58 at 05.50 a CP dawn swarmed around the gable end and then entered the building (see Figure 2)

			 <p>Figure 2: Entry location</p>
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Summary of surveys and supplementary observations:

02/08/2022 - General activity, no days emerging.

16/08/2022 - A single CP emerged from the building, general activity.

31/08/2022 - A single CP entered the building at the gable end.

Any other protected species that would be affected by the development:

N/A

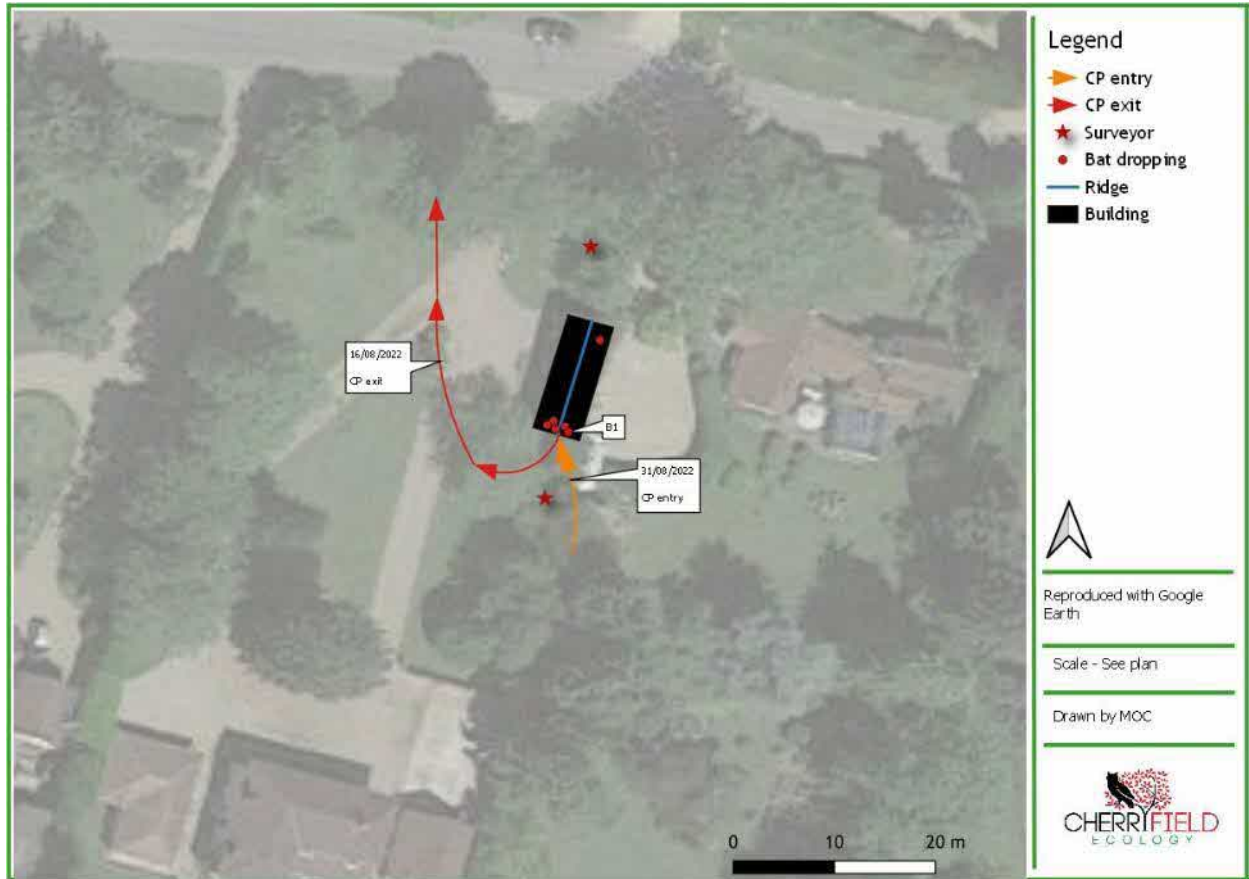


Figure 3: Site Plan



## 4.0 Conclusions, Discussion, Impacts and Recommendations

The following section details the conclusions, discussion and recommendations in the context of the proposed works.

Building/tree/structure reference - B1 (Main Building)

### 4.1 Conclusion and Discussion

The proposals include for conversion of the existing structure to a dwelling.

Following a Stage 1 Ecological Assessment undertaken on 22/06/2022 (Cherryfield Ecology, 2021), further surveys were recommended.

The surveys have shown a single common pipistrelle using the building as a day roost.

All the surveys show that the surrounding garden are used by foraging and commuting bats.

### 4.2 Potential Impact

Impact assessments must be proportionate to the scale of the development (CIEEM, 2018) and the following details a proportionate impact assessment based on current information.

Table 6: Impact Assessment.

Impact	A day bat roost will be lost in the development.
Characterisation of unmitigated impact on the feature	A bat roost will be destroyed when works are carried out resulting in a low-level loss/impact at a local level.
Effect without mitigation	Without mitigation individual bats could be killed, injured or trapped during the works.
Mitigation	See Table 7
Significance of effects of residual impacts (after mitigation)	If lost roosts are replaced by bat boxes, the effects would be negligible.

### 4.3 Recommendations

The following table details the recommended mitigation and compensation required; it also recommends for a Natural England Protected Species Licence (NEPSL) to be applied for.

License type required: Bat Mitigation Class

Roost type: Day

Table 7: Mitigation and Compensation.

Work	Specification
General Information	<p>A Natural England Protected Species Licence must be applied for in order to allow the works to proceed, post-grant of planning.</p> <p>The Three Tests to be answered before planning can be granted (NE, 2017):</p> <p>Test 1: Regulation 53(2)(e) states: a licence can be granted for the purposes of “preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment”.</p> <p>Test 1 can be achieved via the ‘imperative reasons of overriding public interest’. Although not for the ecologist to determine the planning officer will on grant of consent.</p> <p>Test 2: Regulation 53(9)(a) states: the appropriate authority shall not grant a licence unless they are satisfied “that there is no satisfactory alternative”.</p> <p>Test 2 would be achieved on the grant of consent as no other sites have been considered for the development.</p> <p>Test 3: Regulation 53(9) (b) states: the appropriate authority shall not grant a licence unless they are satisfied “that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.”</p> <p>Test 3 will be achieved once full mitigation appropriate to species and population has been designed and implemented via an NEPS licence issued from the statutory authority (Natural England).</p>
Roof and tile linings	<p>‘When a bat roost is present and being mitigated/compensated we advise that the type of linear for the tiles/roof used is a bitumen type 1 traditional felt.</p>

	<p>The reasoning for this is twofold; firstly, bats can damage the Modern Roofing Membrane (MRM), meaning that the MRM will become useless allowing water to pass through from above and, secondly, bats will become trapped in the fibres and die from dehydration and starvation.</p> <p>There is no reason that building regulations will not allow a traditional ‘cold roof’ and, therefore, this should be designed into any project where bats will be able to access the roof/loft or hung tile/weather boarding etc. etc.</p> <p>However, Natural England will accept an MRM being used in a bat roost under the following circumstances -</p> <p>The MRM must have passed the testing regime set out in Essah et al (2020) and a certificate must be provided as proof of this.’</p>
<p>Mitigation and compensation to be installed via a Bat Mitigation Class or Standard Licence application</p>	<p>The following is recommended:</p> <p>Bat Mitigation Class Licence:</p> <p>Works can occur at any time under a Bat Mitigation Class Licence (BMCL) once granted from Natural England.</p> <p>Any re-roofing/demolition/repairs to walls etc. will require the supervision of a bat licensed ecologist. The suitable roosting features will be stripped by hand only. All areas within the roof/wall tops/gable ends etc will be checked for bats i.e. endoscope (were possible). If bats are found, these will be removed by hand and placed in bat boxes that will be in place before works begin.</p> <p>Bat boxes will be installed on retained trees or buildings; it is currently understood that there are trees to the rear of the dwelling (within the garden of the main house) that can be used for this purpose.</p>



Figure 4: Chillon Woodstone Bat Box (British-made)

A minimum of two Chillon Woodstone bat boxes will be hung on the trees or the building at a minimum of 3m from ground level and face south/southwesterly. These boxes are known to be used by Brown Long-Eared bats (BLEB) and crevice-dwelling species.

No further mitigation or compensation is required under this licence.

Commuting bats were using the grounds and surrounds; therefore, any tree, hedges or linear feature should be retained if possible.

<p>Lighting</p>	<p>Any lighting near or shining onto any trees, especially those with bat boxes in or commuting routes shown to be present at further survey stage, will be designed to minimise the impact it has on potential bat roosting and commuting.</p> <p>Lighting will be in line with the BCT lighting guidelines (Bats and Lighting in the UK (Bat Conservation Trust, 2018) <a href="https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/">https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/</a>)</p> <p>This lighting were possible will be of low level, be on downward deflectors and be on PIR sensors. Using LED directional lighting can also be a way of minimizing the light spill affecting the habitat. No up-lighting should be used. Light spill must be minimized to 0.5lux.</p> <p>This will ensure that the roosting and commuting resources that the bats are likely to be using is maintained.</p>
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## 5.0 References

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