



Report prepared for: Colin Franzmann

For the Site of: 1 Wheatfield Road, Harpenden, Herts, AL5 2NY

Version:	Written by:	Checked by:	Final:
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2023 Survey Report	Elijah Bird 19/09/2023	Jo Gregory 19/09/2023	Elijah Bird 22/09/2023
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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 (2023) 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 1 Wheatfield Road, Harpenden, Herts, AL5 2NY.

The client commissioned Cherryfield Ecology to undertake an EBS as the proposals include for the construction of a four bedroom house and double garage following demolition of existing house and garage, associated parking and landscaping.

0.2 Results and Findings

Following a Stage 1 Ecological Assessment undertaken on 07/08/2023 (Amphibian, Reptile & Mammal Conservation Limited, 2023), further surveys were recommended. This included for three dusk emergence surveys. After the first two surveys were undertaken in 2023, the LPA suggested that two more emergence surveys must follow in 2024.

As these surveys started late into the available bat season, only two could be carried out in the year of 2023, of which one has been in the sub-optimal season, this allows the planning ecologist to be confident that a bat license is required and that the three tests will be met.

The first dusk survey showed no bats emerging from the building, but the presence of commuting and foraging activity in the surrounds.

The second dusk survey showed three Common Pipistrelle emerge from between the mortar and tiles from the southwestern extension.

The third dusk survey showed no bats emerging from the building, but the presence of commuting and foraging activity in the surrounds.

The fourth dusk survey showed a Common Pipistrelle emerge from under the western soffit box.

All the surveys show that the surrounding grounds are being used for foraging and commuting bats.

0.3 Impact Assessment and Recommendations

A bat roost for Common Pipistrelle 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, Colin Franzmann, has commissioned Cherryfield Ecology to undertake an EBS for the site of 1 Wheatfield Road, Harpenden, Herts, AL5 2NY. Planning permission is being sought to construct a four bedroom house and double garage following demolition of existing house and garage, associated parking and landscaping.

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 31/08/2023, 14/09/2023, 14/05/2024 and 04/06/2024.

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 (2023) 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, narrower field of view 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: Roosting features (likelihood) of bat presence assessed against Collins (2023) guidelines *Source: Adapted from Collins (2023) pp 44, Table 4.1.*

Likelihood of bat presence (Habitat Value)	Features that bats can 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.

<p>Moderate and Lower likelihood of bat presence.</p>	<p>Modern, well-maintained buildings or built structures that provide few opportunities for access by bats.</p> <p>Small, cluttered roof space.</p> <p>Buildings and built structures comprised primarily of prefabricated steel and sheet materials.</p> <p>Cool, shaded, light or draughty roof voids.</p> <p>Roof voids with a dense cover of cobwebs and no sections of clean ridge board.</p> <p>High level of regular disturbance.</p> <p>Highly urbanised location with few or no mature trees, parkland, woodland or wetland.</p> <p>High levels of external lighting.</p>
<p>Negligible likelihood of bat presence.</p>	<p>No obvious features suitable for roosting, minor foraging or commuting.</p>
<p>None</p>	<p>No features suitable for roosting.</p>

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 - TL131119 and Postcode - AL5 2NY.

Table 2: Weather Records

Date	Survey	Time: from/to	Weather: Start	Weather: Finish
31/08/2023	Dusk Emergence	19:36 to 21:22 SS: 19:52	Temp: 14° C Humidity: 91% Cloud: 100% Wind: 0/12 Precip: None	Temp: 14° C Humidity: 92% Cloud: 100% Wind: 0/12 Precip: None
14/09/2023	Dusk Emergence	19:04 to 20:52 SS: 19:19	Temp: 20° C Humidity: 57% Cloud: 70% Wind: 0/12 Precip: None	Temp: 17° C Humidity: 76% Cloud: 10% Wind: 0/12 Precip: None
14/05/2024	Dusk Emergence	20:33 to 22:33 SS: 20:48	Temp: 16° C Humidity: 66% Cloud: 40% Wind: 0/12 Precip: None	Temp: 14° C Humidity: 88% Cloud: 30% Wind: 0/12 Precip: None
04/06/2024	Dusk Emergence	21:00 to 23:00 SS: 21:15	Temp: 14° C Humidity: 90% Cloud: 100% Wind: 0/12	Temp: 13° C Humidity: 85% Cloud: 100% Wind: 0/12

			Precip: Light	Precip: None
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3.2 MAGIC

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

Table 3: Magic search results

Receptor	Distance and Direction (m/Km)	Description
Statutory sites	n/a	n/a
Granted protected species licenses (bats)	~836m northeast	Brown Long-Eared <i>Plectous auritus</i> , Common Pipistrelle <i>Pipistrellus pipistrellus</i> , and Soprano Pipistrelle <i>Pipistrellus pygmaeus</i> (licence 2018-37001)
	~1591m southeast	Common pipistrelle (licence 2019-39267)
Priority habitat	~1551m southwest	Coastal and Floodplain Grazing Marsh
	~685m northwest	Good quality semi-improved grassland
	~1542m northeast	Lowland Meadows
	~752m northeast	Lowland Heathland
	~600m west	Deciduous Woodland
	~1318m northeast	Traditional Orchards
	~985m northwest	Woodpasture and Parkland

MAGiC

Magic Map

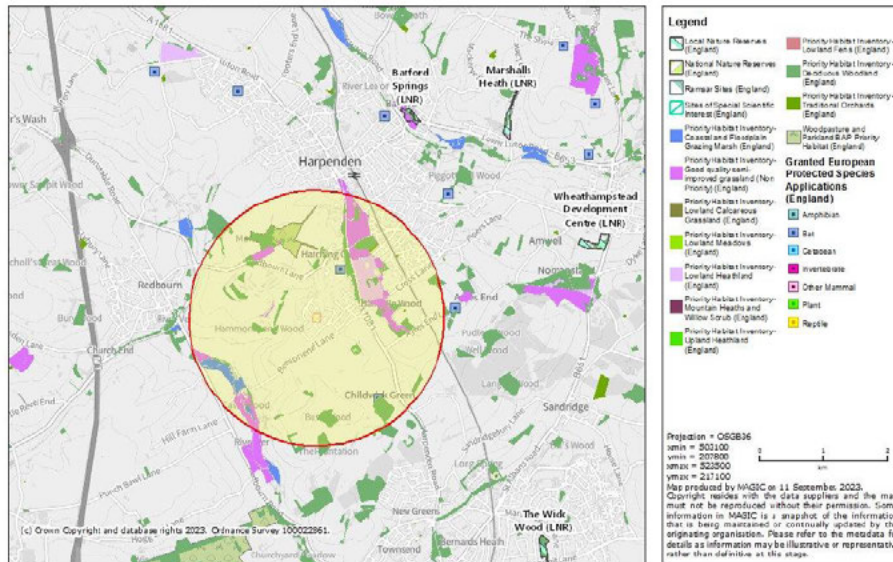


Figure 1: Magic Map Search

3.3 Biological Records Data

Under CIEEM guidelines data is not always needed, should a bat license be required data will have to be obtained for this application.

3.4 Site Location and Surrounds

The site is located in Harpenden, Hertfordshire and is surrounded by housing and arable fields in the immediate local area. Table 5 details the commuting, feeding and habitat features in a 1km radius of the site.

Table 5: Habitat features suitable for bat use.

Feature	Description
Watercourses	There are no significant watercourses within the search area.
Waterbodies	There is a water hazard located within Harpenden Common Golf Club approximately 930m northeast of the site.
Woodland	A large area of woodland is located approximately 667m northeast and extends along the A1081. Smaller areas of woodland are located approximately 766m north, and 813m west of the site.

Linear e.g. hedgerows	Field margin and garden hedgerows are found throughout the search area.
Pasture/arable/grassland	Arable fields dominate the search area, as well as pasture fields to a lesser extent.
Other	Harpenden Golf Club is located approximately 483m northwest, and Harpenden Common Golf Club is located approximately 719m northeast of the site.

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 8 for Site Plan).


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

3.6 Observations

Table 6: Results and observations of the building, tree or structure.

Surveyor	Building, Tree or Structure	Dates, Times and Survey Type	Bat Activity Observed
ZH	B1	31/08/2023 19:36 to 21:22 Dusk	Common Pipistrelle: Three passing across the garden going east and one going over the roof to the northeast from 20:00 to 20:02. Two distant passes occurred at 20:12 and 20:23. Soprano Pipistrelle: One spotted foraging around the back garden at 20:14. Brown Long Eared: One near pass at 20:28.
TH	B1	31/08/2023 19:36 to 21:22 Dusk	Common Pipistrelle: Feeding from south to north, to the side of the house at 20:05. Distant passes heard from 20:33 to 20:51. Unidentified Pipistrelle: Two feeding at 20:15 and 20:21, going south to north.

			<p>Brown Long-Eared: Passed at 20:53. One distant pass at 21:05.</p> <p>Noctule: Two distant passes at 20:11 and 20:18.</p>
JN	B1	<p>14/09/2023 19:04 to 20:52 Dusk</p>	<p>Common Pipistrelle: One passed from back garden towards the front road at 19:36. Two flew over the garden at 20:01 and 20:03. Feeding occurred from 19:39 until 19:51 in the back garden. Three distant passes occurred from 19:53 to 20:00 and continued from 20:09 until 20:39.</p> <p>Brown Long-Eared: One distant pass at 20:01.</p> <p>Noctule: Four distant passes at 20:02, 20:08, 20:09 and 20:23.</p>
EB	B1	<p>14/09/2023 19:04 to 20:52 Dusk</p>	<p>Common Pipistrelle: Three emergences were seen from the gaps between the mortar and roof tiles to the southwestern elevation at 19:52, 19:53 and 20:00.</p>  <p>Figure 2: CP emergence locations, leftmost at 20:00 and rightmost at 19:52 and 19:53.</p>

			<p>One common pipistrelle pass from the northeast to southwest at 19:48.</p> <p>Distant passes at 19:50, 19:59, 20:01, 20:06, 20:07, 20:09 and from 20:23 until 20:35.</p> <p>Feeding activity occurred at 19:50 in the front garden, 20:01 and 20:02 over the roof from the back garden.</p>
SD	B1	<p>14/05/2024</p> <p>20:33 to 22:33</p> <p>Dusk</p>	<p>Common Pipistrelle:</p> <p>Feeding occurred at the trees, hedges and front garden around the front of B1 at 21:12, 21:15, 21:16, 21:17, 21:20, 21:22, 21:25 and 21:31.</p>
EB	B1	<p>14/05/2024</p> <p>20:33 to 22:33</p> <p>Dusk</p>	<p>Common Pipistrelle:</p> <p>Feeding occurred in the back garden from 21:05 until 21:18.</p> <p>A passing occurred at 21:31 from the southwest to the northeast, at the southeast of B1.</p>
PH	B1	<p>04/06/2024</p> <p>21:00 to 23:00</p> <p>Dusk</p>	<p>Common Pipistrelle:</p> <p>One emergence from under the soffit box on the eastern side of B1's front elevation at 21:42.</p>  <p>Figure 3: CP emergence location at 21:42</p> <p>One Common Pipistrelle was seen commuting from the western corner of B1 at 21:44.</p> <p>Feeding occurred at 21:45, 21:47, 21:49, 21:50, 21:52, 21:53 and at 21:55.</p>
EB	B1	<p>04/06/2024</p> <p>21:00 to 23:00</p> <p>Dusk</p>	<p>Common Pipistrelle:</p> <p>Distant passes occurred at 21:31, 21:42, 21:43 and 21:49.</p> <p>Feeding occurred in the back garden at 21:45, 21:51, 21:53 and 21:55.</p>

			<p>A pass occurred adjacent to the south to the north of B1's western elevation at 21:48. Another pass through the garden happened at 21:54.</p>
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Summary of surveys and supplementary observations:

31/08/2023 - No bats were seen emerging from B1 during the survey. Activity was recorded in the surrounding gardens.

14/09/2023 - Three emergences in total:

3 x CP from between the mortar and roof tiles on the building's southwestern elevation.

14/05/2024 - No bats were seen emerging from B1 during the survey. Activity was recorded in the surrounding gardens.

04/06/2024 - 1 CP emergence from the eastern section of the soffit box.

IR at the darkest point:



Figure 3: IR at darkest point on 14/09/2023 at 20:52.

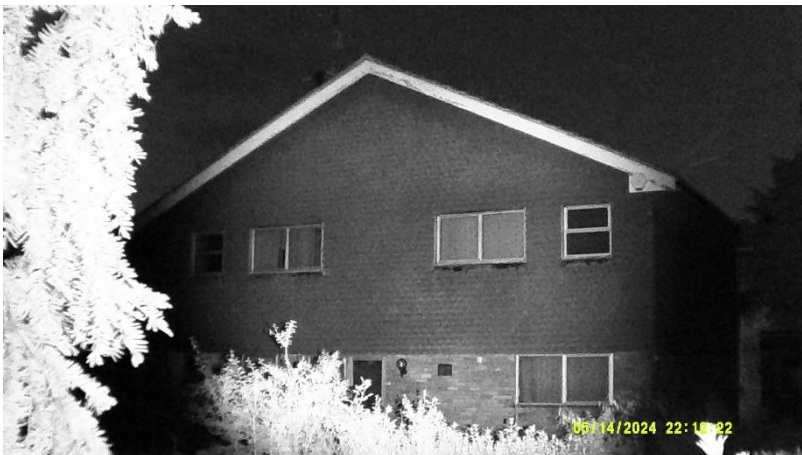


Figure 4: IR at darkest point on 14/05/2024



Figure 5: IR at darkest point on 14/05/2024



Figure 6: IR at darkest point on 04/06/2024

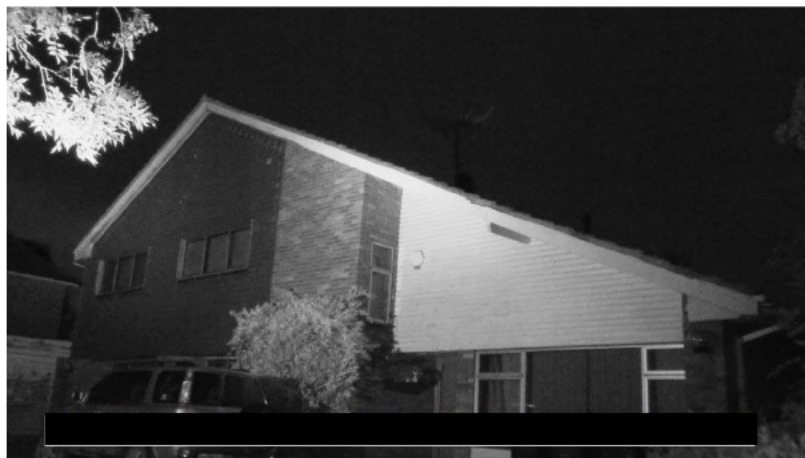


Figure 7: IR at darkest point on 04/06/2024



Figure 8: 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 the construction of a four bedroom house and double garage following the demolition of the existing house and garage, associated parking and landscaping.

Following a Stage 1 Ecological Assessment undertaken on 07/08/2023 (Amphibian, Reptile & Mammal Conservation Limited, 2023), further surveys were recommended. This included for three dusk emergence surveys.

The first dusk survey showed no bats emerging from the building, but the presence of commuting and foraging activity in the surrounds.

The second dusk survey showed three Common Pipistrelle emerge from between the mortar and tiles from the southwestern extension.

The third dusk survey showed no bats emerging from the building, but the presence of commuting and foraging activity in the surrounds.

The fourth dusk survey showed a Common Pipistrelle emerge from under the western soffit box.

All the surveys show that the surrounding grounds are being used for 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 7: 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 and or enhancement	See Table 8 and 9
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 8: 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 and completion of the further survey in the 2024 survey season.</p> <p>The Three Tests to be answered before planning can be granted (NE, 2017):</p> <p><i>Test 1:</i> 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><i>Test 2:</i> 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>
<p>Roof and tile linings</p>	<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 <i>et al</i> (2020) and a certificate must be provided as proof of this.’ Natural England will accept an MRM being used in a roost of any type with evidence of the MRM having passed the propensity snagging test.</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 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 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; it is currently understood that there are trees to the front and rear of the dwelling (within the garden of the main house) that can be used for this purpose.</p> <div data-bbox="787 373 1047 772" data-label="Image">  </div> <p style="text-align: center;">Figure 9: Chillon Woodstone Bat Box (British-made)</p> <p>A minimum of three 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.</p> <p>No further mitigation or compensation is required under this licence.</p> <p>Commuting bats were using the grounds and surrounds; therefore, any tree, hedges or linear feature should be retained if possible.</p>
<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) [REDACTED]) [REDACTED]</p> <p>This lighting where 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>

	This will ensure that the roosting and commuting resources that the bats are likely to be using is maintained.
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The local planning authority has a duty to impose enhancements. The following table details the affordable and simple enhancements suitable for the site (Table 9).

Table 9: Enhancements to allow a net gain for protected species.

Work	Specification
Enhancements to provide a net gain as per the LPA's duty.	An additional bat box can be hung on the building after works have completed, or, should the development allow for it, a couple of bat slates can be built into the new build. This would require no maintenance and can be hidden by facing the tube with the cladding/brick etc. for aesthetics.

5.0 References

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