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Report prepared for: James Gran

For the Site of: Hexton Manor, Hexton, Hitchin, Hertfordshire SG5 3JH

Version:	Written by:	Checked by:	Final:
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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, e.g. May 2024 to May 2025 for bats. 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 the 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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Contents

0.0 Non-Technical Summary	3
0.1 Background	3
0.2 Results and Findings	3
0.3 Impact Assessment and Recommendations	3
1.0 Introduction	5
1.1 Aim	5
1.2 Background Information	5
2.0 Methods	8
2.1 Limitations	9
3.0 Results	11
3.1 Desk Study	11
3.2 MAGIC	11
3.3 Biological Records Data	12
3.4 Site Location and Surrounds	13
3.5 Building, Tree or Other Structure	14
3.6 Observations	14
4.0 Conclusions, Discussion, Impacts and Recommendations	20
4.1 Conclusion and Discussion	20
4.2 Potential Impact	20
4.3 Recommendations	21
5.0 References	25

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 Hexton Manor, Hexton, Hitchin, Hertfordshire SG5 3JH (Kennels).

The client commissioned Cherryfield Ecology to undertake an EBS as the proposals include for conversion of The Kennels (B1) to a detached dwelling with associated features.

0.2 Results and Findings

The site consists of a detached single storey building previously used as a kennel with hardstanding and vegetated garden. Following a Stage 1 Ecological Assessment undertaken on 05/01/2024 (Cherryfield Ecology, 2024), the building was identified as having high potential for roosting bats due to a number of gaps within the roofing and crevices internally. Therefore, three dusk emergence surveys were recommended.

The surveys have shown a single common pipistrelle *Pipistrellus pipistrellus* emergence from the north-western roofing.

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 (day) for Common Pipistrelle (*Pipistrellus pipistrellus*) 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 conversion to proceed lawfully. (Please refer to **Section 4.3** of this report for further details).

As swallow nests were identified during the survey, it is recommended the development is undertaken outside of the bird nesting season (March to August).

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, James Gran, has commissioned Cherryfield Ecology to undertake an EBS for the site of Hexton Manor, Hexton, Hitchin, Hertfordshire SG5 3JH. Planning permission is being sought to conversion of The Kennels (B1) to a detached dwelling with associated features.

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 01/05/2024, 22/05/2024 and 12/06/2024.

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 surrounding area. 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.

1.3 Roost definitions

Roost definitions from Natural England’s licensing documents (NE, 2024).

Day roost - a place where individual bats, small groups of males, rest or shelter in the day but are rarely found by night in the summer.

Night roost - a place where bats rest or shelter in the night but are rarely found in the day. May be used by a single individual on occasion or it could be regularly by the whole colony.

Feeding Roost - a place where individual bats or a few individuals rest or feed during the night but are rarely present in the day.

Transitional/occasional roost - used by a few individuals or occasionally small groups for generally short periods of time on waking from hibernation or in the period prior to hibernation.

Swarming site - where large numbers of males and females gather during late summer to autumn. Appear to be important mating sites.

Mating sites - sites where mating takes place from late summer and can continue through winter.

Maternity roost - where female bats give birth and raise their young to independence.

Hibernation roost - where bats may be found individually or together during winter. They have a constant cool temperature and high humidity.

Satellite roost - an alternative roost found in close proximity to the main nursery colony used by a few individual breeding females to small groups of breeding females throughout the breeding season.

Other - roosts not meeting the above definitions.

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 or Nightfox whisker.

Night Vision Aids (NVAs) 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 a 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 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, pp44, 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.

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 obvious features suitable for roosting, minor foraging or commuting.
None	No features suitable 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 - TL 10733 30442 and Postcode - SG5 3JH.

3.2 MAGIC

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

Table 2: Magic search results

Receptor	Distance and Direction to Nearest (m/km)	Description
Statutory sites	~1,893.2m, SW	Barton Hills (NNR, SSSI)
	~1,322.0m, SE	Deacon Hill (SSSI)
Granted protected species licenses	N/A	N/A
Priority habitat	~595.2m, S & SE	Good quality semi-improved grassland
	~620.4m, S & SE	Lowland calcareous grassland
	On site	Deciduous woodland
	~272.3m	Traditional orchards
	On site	Woodpasture and parkland BAP priority habitat

MAGiC

Magic Map

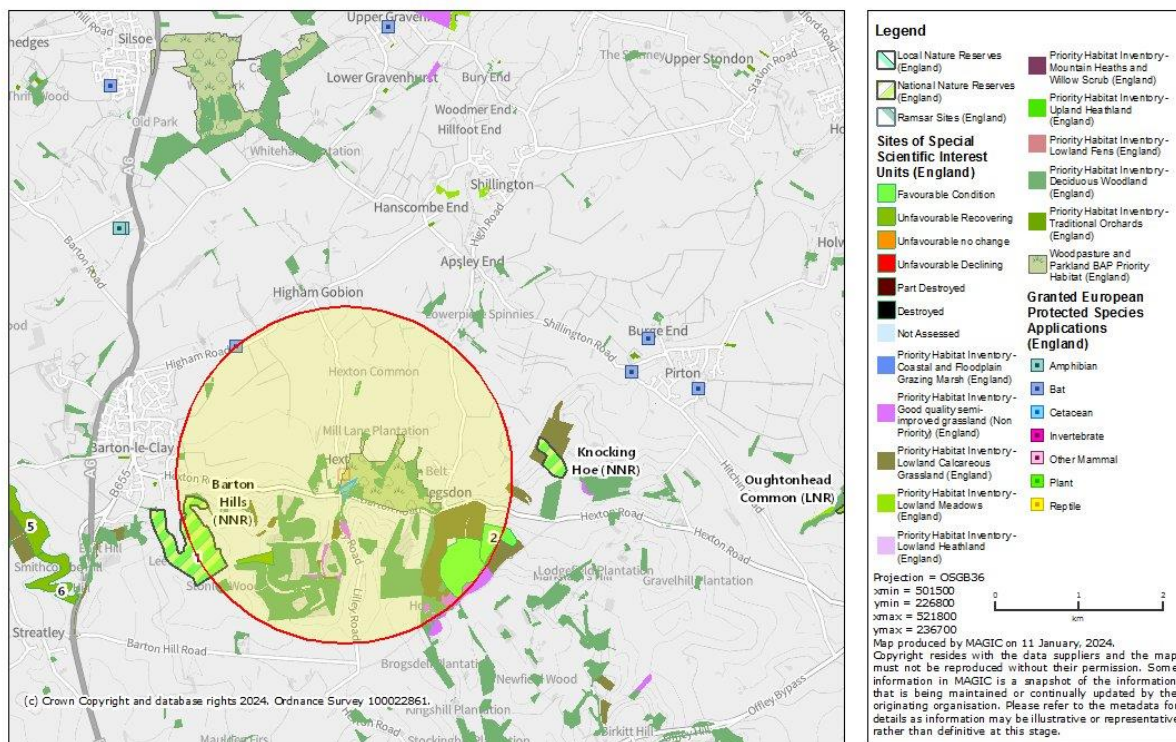


Figure 1: Magic Map Search

3.3 Biological Records Data

A standard search of existing records for protected species and nature reserves has been commissioned, below details the results and site context. *Data over 10 years old is not included.*

Biological records were obtained from Hertfordshire Environmental Records Centre (2024).

Table 3: Biological Records

Species	Number of Records	Closest record (accuracy)	Most recent record (year)
Barbastelle <i>Barbastella barbastellus</i>	-	-	-
Brown Long-Eared <i>Plecotus auritus</i>	5	0m (1km)	N/A
Common Pipistrelle <i>Pipistrellus pipistrellus</i>	9	450m (100m)	2013
Daubenton's <i>Myotis daubentonii</i>	28	0m (1km)	N/A

Leisler's <i>Nyctalus leisleri</i>	-	-	-
Nathusius' Pipistrelle <i>Pipistrellus nathusii</i>	-	-	-
Natterer's <i>Myotis nattereri</i>	34	0m (1km)	N/A
Noctule <i>Nyctalus noctula</i>	2	0m (1km)	N/A
Serotine <i>Eptesicus serotinus</i>	2	0m (1km)	N/A
Soprano Pipistrelle <i>Pipistrellus pygmaeus</i>	5	0m (1km)	N/A
Unidentified Bat <i>Chiroptera</i>	8	0m (1km)	N/A
Unidentified Long-Eared <i>Plecotus sp.</i>	1	0m (1km)	N/A
Unidentified <i>Myotis Myotis sp.</i>	4	250m (1km)	N/A
Unidentified Pipistrelle <i>Pipistrellus sp.</i>	4	0m (1km)	N/A
Unidentified Vesper <i>Vespertilionidae</i>	-	-	-
Whiskered <i>Myotis mystacinus</i>	-	-	-
Whiskered/Brandt's <i>Myotis mystacinus/brandtii</i>	-	-	-

3.4 Site Location and Surrounds

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

Table 4: Habitat features suitable for bat use.

Feature	Description
Watercourses	There is a small flowing brook connecting Spring head 396.04m north-west and another pond is located ~540.33m north. There is a network of brooks ~904.08m northwest. There is a small waterway connect Spring Head to another large pond ~756.31 north-west. There is another brook ~254.74m, north, leading off of a pond.
Waterbodies	Spring Head is ~321.04m north-west. A small waterbody is located ~1km north-west.
Woodland	There is a copse ~228.84m north of the site. To the west there is a woodland ~254.57m away. There is a copse ~227.45m south. There is a large woodland ~981.69m west.
Linear e.g. hedgerows	Field margin hedgerows dominate the search area.
Pasture/arable/grassland	Arable land and, to a lesser extent, pasture dominate the search area.
Other	n/a

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 X for Site Plan).

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

Table 5: Weather Records

Date	Survey	Time: from/to	Weather: Start	Weather: Finish
01/05/2024	Dusk	20:12 to 22:00 SS: 20:27	Temp: 18°C Humidity: 76% Cloud: 30% Wind: 2/12 Precip: None	Temp: 15°C Humidity: 86% Cloud: 30% Wind: 2/12 Precip: None
22/05/2024	Dusk	20:45 to 22:30 SS: 21:00	Temp: 14°C Humidity: 93% Cloud: 90% Wind: 2/12 Precip: None	Temp: 13°C Humidity: 93% Cloud: 98% Wind: 3/12 Precip: None
12/06/2024	Dusk	21:06 to 22:55 SS: 21:21	Temp: 13°C Humidity: 65% Cloud: 35% Wind: 1/12 Precip: None	Temp: 11°C Humidity: 70% Cloud: 35% Wind: 1/12 Precip: None

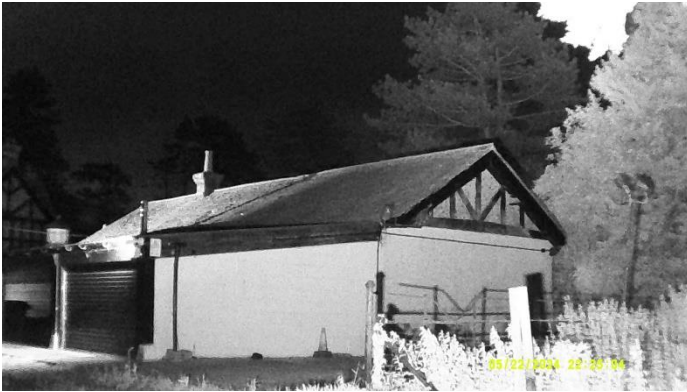
3.6 Observations

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

Surveyor	Building, Tree or Structure	Dates, Times and Survey Type	Bat Activity Observed
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JW	B1	01/05/2024 20:12 to 22:00 SS: 20:27	A common pipistrelle <i>Pipistrellus pipistrellus</i> (CP) was heard but not seen from 20:42 to 21:15. A Noctule <i>Nyctalus noctula</i> (N) was heard but not seen at 21:16. A soprano pipistrelle <i>Pipistrellus pygmaeus</i> (SP) was heard but not seen at 21:27. Distant CP passes were recorded every couple of minutes from 21:30 to 21:38.
ES	B1	As above	A CP was observed passing and feeding at 21:10. A noctule was heard but not seen at 21:16. Constant CP foraging activity was identified from 21:10 until 21:20. CP passes were recorded every couple of minutes from 21:23 to 21:58.
JP	B1	As above	A CP was heard but not seen every couple of minutes from 20:43 to 20:47. A CP and SP was seen foraging in front of the kennel at 20:53 and 21:03. A CP was then heard but not seen every couple of minutes from 21:12 until 22:00. 
	B1	22/05/2024 20:45 to 22:30 SS: 21:00	Figure 2: Still from southern elevation. A CP was heard but not seen at 21:37. CPs were then observed foraging at 21:43 and 21:48 over the building. Continuous foraging was heard but not seen from 21:49

			to 21:55. A SP was seen foraging south-east to east at 22:06.  Kennels Hexton Manor SG5 3JH 05/02/2024 22:25:25 Figure 3: IR still from north-eastern elevation.
PH	B1	As Above	A CP was first observed foraging in front of the kennel at 21:11 until 21:31. A CP passed over the roof heading west at 21:43. Foraging CP was recorded at 21:54 and 22:08. A Brown long eared bat <i>Plecotus auritus</i> (BLEB) was seen but not heard passing north over the kennel roof at 22:13.  THE KENNELS, HEXTON MANOR, HEXTON, HERTS SG5 3JH 22-5-24 IR IMAGE Figure 4: IR still from southern elevation.
ZH	B1	As Above	A CP distant pass was heard but not seen at 21:31. A CP emergence was observed emerging from, the north-western elevation at 21:36. CP was then observed foraging west to east around the trees from 21:38 until 21:40 and 21:47. A BLEB was heard but not seen at 22:08.

			 05/22/2024 21:36:21 Figure 5: CP emergence at 21:36.  05/22/2024 22:20:00 Figure 6: IR still from north-western elevation.
JW	B1	12/06/2024 21:06 to 22:55 SS: 21:21	A CP was heard but not seen at 21:39 and 21:45. A CP was then observed foraging around trees at 21:47 and 21:58 and 22:14. A BLEB passed at 22:23. No further activity was recorded.  06/12/2024 22:33:29 Figure 7: IR still from north-western.
DB	B1	As Above	A CP was first seen passing into trees west of the building at 21:36 and was seen every couple of minutes foraging

			from 21:39 until 21:45. A BLEB was observed passing at 21:59. A SP pass was recorded at 22:03. A CP was observed flying south over the building at 22:08.  Figure 8 : IR still from southern elevation.
ES	B1	As Above	A CP was observed passing from behind the kennels towards the driveway at 21:40. A myotis species was recorded passing at 22:21. No further activity was recorded.  Figure 9: IR still from north-eastern elevation.
Summary of surveys and supplementary observations: 01/05/2024 –Foraging and commuting bats were identified throughout the survey. 22/05/2024 – A singular Common Pipistrelle was observed emerging from the north-western elevation. Foraging and commuting bats were identified throughout the survey. 12/06/2024 – Foraging and commuting bats were identified throughout the survey. Any other protected species that would be affected by the development: n/a			

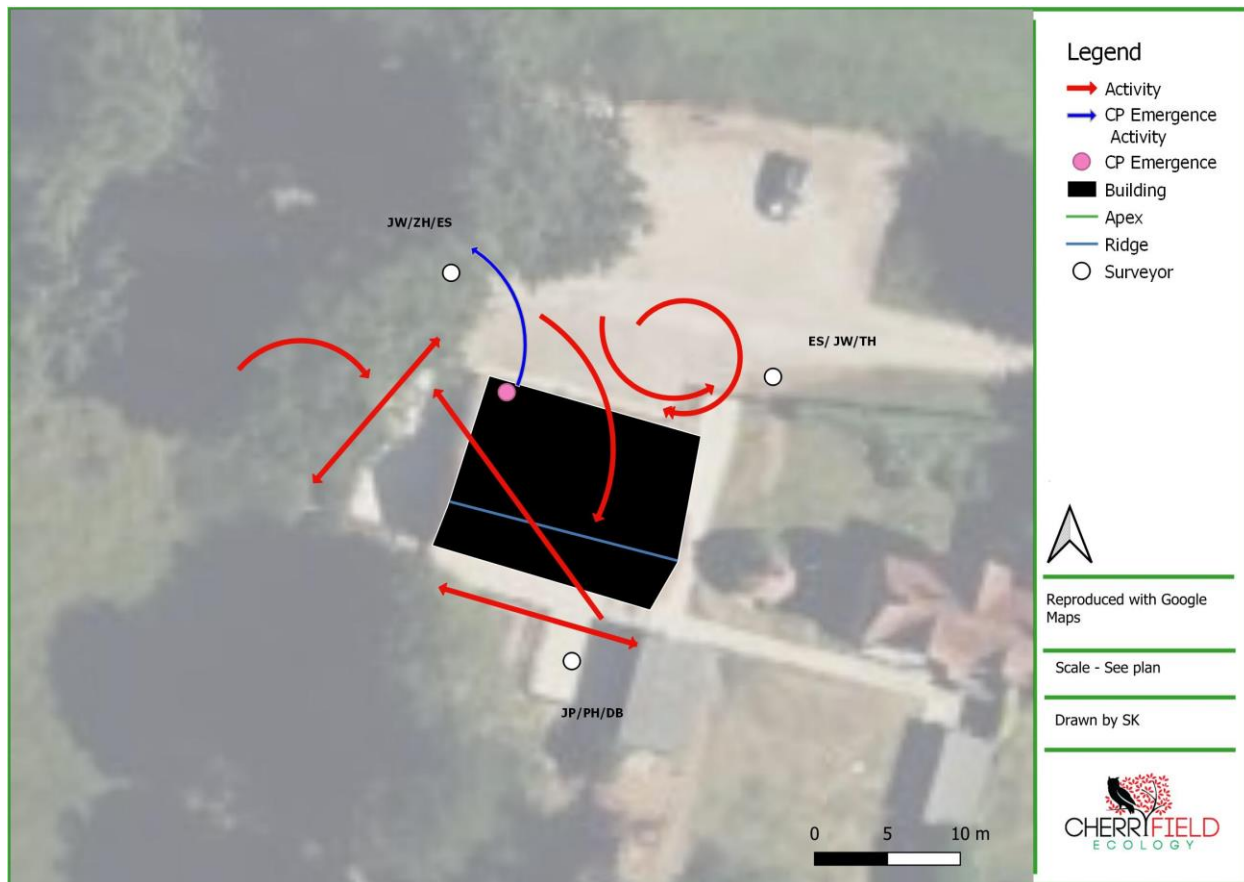


Figure 10: Site Plan

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 the conversion of The Kennels (B1) to a dwelling. The site consists of a detached single storey building previously used as a kennel with hardstanding and vegetated garden. Following a Stage 1 Ecological Assessment undertaken on 05/01/2024 (Cherryfield Ecology, 2024), the building was identified as having high potential for roosting bats due to a number of gaps within the roofing and crevices internally. Therefore, three dusk emergence surveys were recommended.

The surveys have shown a single Common pipistrelle *Pipistrellus pipistrellus* emergence from the north-western roofing.

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 (CP).
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	A Natural England Protected Species Licence must be applied for in order to allow the works to proceed, post-grant of planning. The Three Tests to be answered before planning can be granted (NE, 2017): <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”. 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. <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”. Test 2 would be achieved on the grant of consent as no other sites have been considered for the development. <i>Test 3:</i> 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.” Test 3 will be achieved once full mitigation appropriate to species and population has been designed and implemented via a NEPS licence issued from the statutory authority (Natural England).
Roof and tile linings	‘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.

	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. 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/weatherboarding etc. However, Natural England will accept an MRM being used in a bat roost under the following circumstances - 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.
Mitigation and compensation to be installed via a Bat Mitigation Class or Standard Licence application	The following is recommended: Bat Mitigation Class Licence: Works can occur at any time under a Bat Mitigation Class Licence (BMCL) once granted by Natural England. 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 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. Bat boxes will be installed on retained trees or buildings;



Figure 11: Chillon Woodstone Bat Box (British-made)

A minimum of one Chillon Woodstone bat boxes will be hung on 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.

Lighting

Any lighting near or shining onto any trees/buildings will be designed to minimise the impact it has on potential bat roosting and commuting.

Lighting will be in line with the BCT lighting guidelines (Bats and Lighting in the UK (Bat Conservation Trust, 2023) <https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/>

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.

This will ensure that the roosting and commuting resources that the bats are likely to be using are maintained.

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.	A minimum of one Chillon Woodstone bat boxes or similar boxes (Figure 12) will be hung on the trees at a minimum of 3m from ground level and face south/southwesterly. These boxes are known to be used by crevice and void-dwelling species.  Figure 12: Chillon Woodstone Bat Box (British-made) Bat tubes can also be built into the building (Figure 13); these require no maintenance and can be hidden by facing the tube with the cladding/brick etc. for aesthetics.  Figure 13: Example of bat tube

5.0 References

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