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Report prepared for: James Gran

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

Version:	Written by:	Checked by:	Final:
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Final	Sarah Kennard 28/05/2024	Tanya O'Connor 29/05/2024	Sarah Kennard 30/05/2024

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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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 The Generator Building, Hexton Manor, Hexton, Hitchin, Hertfordshire SG5 3JH.

The client commissioned Cherryfield Ecology to undertake an EBS as the proposals include for the extension and conversion into a three-bedroom dwelling.

0.2 Results and Findings

Following a Stage 1 Ecological Assessment undertaken on 05/01/2024 (Cherryfield Ecology, 2024), further survey was recommended. This included for one dusk emergence survey.

The survey has shown no emergences were recorded from within B1 with the surrounding grounds being used for foraging and commuting bats.

0.3 Impact Assessment and Recommendations

No impacts are foreseen; however, if bats are found during the development, all works must stop, and advice sought.

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 The Generator Building, Hexton Manor, Hexton, Hitchin, Hertfordshire SG5 3JH. Planning permission is being sought for the extension and conversion into a three-bedroom 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 survey was conducted on 22/05/2024.

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 droppings 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 10819 30491 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

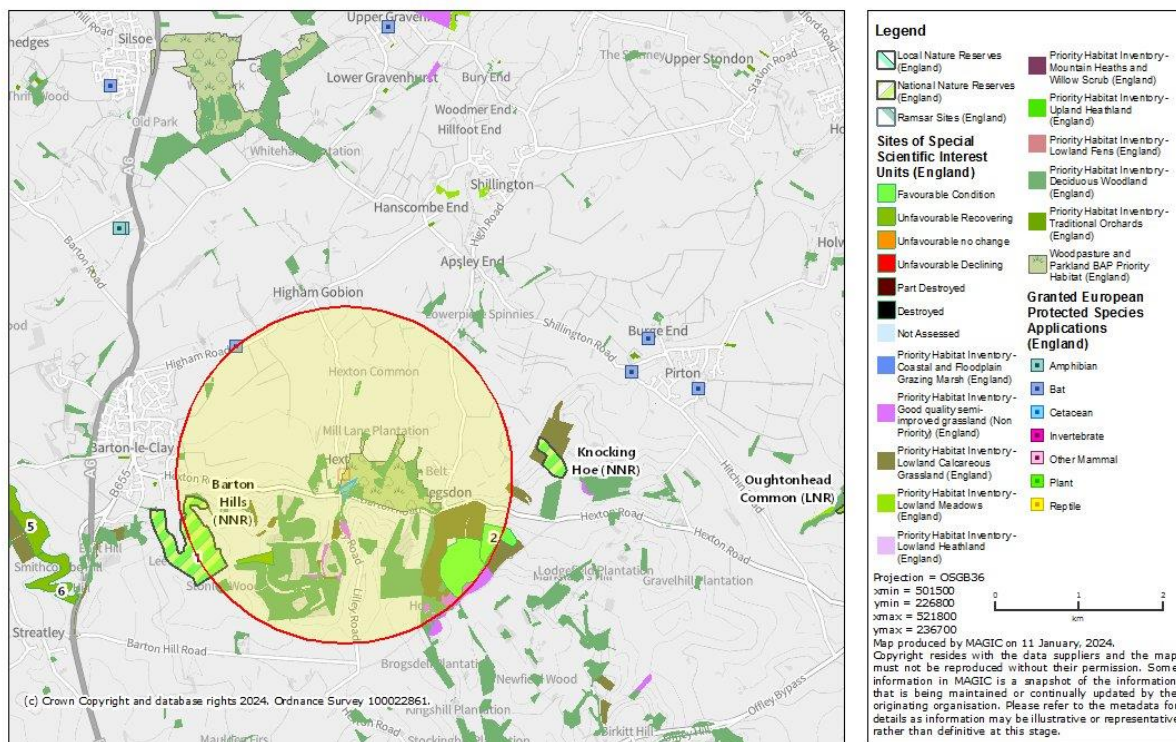


Figure 1: Magic Map Search

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.

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 Myotis <i>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, pasture, and to a lesser extent woodland, in the immediate local area. Table 4 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 and another pond is located ~29.37m southeast. There is a network of brooks ~206.06m northwest. There is a small waterway connect Spring Head to another large pond ~388.84m east. There is another brook ~814.23m, northeast, leading off of a pond.
Waterbodies	Spring Head is ~206.96m east. There are two ponds ~305.54m and ~372.70m west. There is a small waterbody ~424.49m South. There is another pond ~954.57m northeast.
Woodland	There is a copse ~158.34m southeast. To the east there is a woodland ~355.02m away. There is a copse ~249.09m west. There is a large woodland ~570.61m southwest. There is a copse ~761.29m south. A large woodland is ~783.68m southeast.

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	A graveyard forming part of St Faith's Church is located ~323.59m southwest.

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 4 for Site Plan).

Building/tree/structure reference - B1 (The Generator Building)

Table 5: Weather Records

Date	Survey	Time: from/to	Weather: Start	Weather: Finish
22/05/2024	Dusk	20:40 to 22:30 SS: 21:00	Temp: 14°C Humidity: 94% Cloud: 60% Wind: 2/12 Precip: 10%	Temp: 13°C Humidity: 93% Cloud: 60% Wind: 2/12 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
JW	B1	22/05/2024 20:40 to 22:30 SS: 21:00	A Common Pipistrelle (<i>Pipistrellus pipistrellus</i>) was heard but not seen at 21:22. Foraging activity was then recorded at 21:30 with continuous foraging activity until 21:44. All bat calls were heard but not seen during the survey. No bats were observed emerging.

			 Figure 2: Surveyor IR image of elevation.
ES	B1	As above	A Common Pipistrelle was recorded passing at 21:38. A Myotis species was heard but not seen at 21:47.  Figure 3: Surveyor IR image.
Summary of surveys and supplementary observations: 22/05/2024 - Foraging activity was recorded in the surrounds near the building. No emergencies were recorded. Any other protected species that would be affected by the development: Nesting Birds- The building offers suitable habitat for nesting birds such as swallows. barn owls- Barn Owl pellets were identified during the ecological appraisal and the building provides suitable habitat.			



Figure 4: 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 (The Generator Building)

4.1 Conclusion and Discussion

The proposals include for the extension and conversion into a three-bedroom dwelling. The surveys have shown no emergences recorded within B1 with the surrounds being used by occasional foraging and commuting bats. A Barn Owl (*Tyto alba*) and breeding bird mitigation plan is required.

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	Bats- n/a Breeding Birds- Active nests may be lost. Barn Owl- Active nests may be lost.
Characterisation of unmitigated impact on the feature	Bats-n/a Breeding Birds - A low-level loss/impact at a local level.
Effect without mitigation	Bats- n/a Breeding Birds- Individual birds and barn owl may be killed, injured or trapped during works.
Mitigation and or enhancement	See Table 8 and 9
Significance of effects of residual impacts (after mitigation)	Bats-n/a Breeding Birds - If lost habitat is replaced by bird boxes and mitigation is followed, the effects would be negligible. Barn Owl - If mitigation is followed, the effects would be negligible.

4.3 Recommendations

The following table details the recommended mitigation and compensation required.

Table 8: Mitigation and Compensation

Work	Specification
Mitigation and Compensation recommendations	No roost found: As no roost was confirmed during the survey, works to the building can be undertaken with no impacts foreseen. If at any time bats are found during works, works must stop, and further advice sought from a licensed bat worker. Commuting bats were using the grounds and surrounds, therefore, any tree, hedges or linear feature should be retained where possible.
Lighting	Any lighting near or shining onto any trees 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	A minimum of one Chillon Woodstone bat boxes or similar boxes (Figure 5) 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.

the LPA's duty.	Figure 5: Chillon Woodstone Bat Box (British-made) Bat tubes can also be built into the building (Figure 6); these require no maintenance and can be hidden by facing the tube with the cladding/brick etc. for aesthetics. Figure 6: Example of bat tube
Barn Owl	Due to the building providing suitable habitat with evidence of owl, Barn Owl boxes should be placed in suitable locations within the site if possible. Figure 7: Example of Barn Owl box.

5.0 References

Cherryfield Ecology (2024), Ecological Appraisal Report 2024

CIEEM (2018), Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, September 2018. Chartered Institute of Ecology and Environmental Management, Winchester, online at <https://www.cieem.net/data/files/ECIA%20Guidelines.pdf>

Collins, J. (ed.) (2023), Bat Surveys for Professional Ecologists: Good Practice Guidelines 4th Edition, BCT, London

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