



Elite Ecology

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**Louma Cottage,
Wokingham**



Bat Activity Survey

November 2024



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0. Executive Summary

0.1 This report has been prepared at the request of Ms. Rosemary Smart (proprietor). It relates to the potential presence of bats and birds at the proposed re-development works at Louma Cottage, Hollybush Ride, Wokingham, Berkshire, RG40 3QR (OS Grid Reference: SU 81293 64611). This survey effort involved both a desktop study and field survey being undertaken.

0.2 Under the current proposals, the old cottage to the west of the site is to be demolished and a new dwelling is to be constructed with associated access and garden areas. This will result in both the permanent and temporary loss and/or alteration of some of the habitats located on the proposed re-development site.

0.3 Due to the amount of potential ingress/egress points and suitable roosting features, the buildings were deemed to be of the following bat roosting potential:

- **B1 = High**
- **B2 = Negligible**
- **B3 = Negligible**

Therefore, three further bat activity surveys were required during the bat survey season (May to September, inclusive). These activity surveys were carried out on **B1** on the 2nd and 23rd of July, and the 14th of August 2024. **B1** was **confirmed** to support nesting birds.

0.4 Summary

Bat Presence/Absence

From the site surveys it has been deemed that **B1** at Louma Cottage, Wokingham, contains a day roost of common pipistrelle (*Pipistrellus pipistrellus*) bats and a day roost of brown long-eared (*Plecotus auritus*) bats. In addition to this, brown long-eared, common pipistrelle, Daubenton's (*Myotis daubentonii*), Nathusius's pipistrelle (*Pipistrellus nathusii*), noctule (*Nyctalus noctula*), and soprano pipistrelle (*Pipistrellus pygmaeus*) bats were all identified to be using the site for commuting, foraging, and socialising purposes.

Bird Presence/Absence

From the survey visit **B1** was found to support nesting birds due to the presence of a wrens (*Troglodytes troglodytes*) nest found within the structure. Additionally, the surrounding landscape provides all of the necessary habitat elements that birds require, and their presence can be assumed. The building was also deemed to be of **high** potential to support nesting birds due to the presence of suitable nesting features.

Ecological Value of Building Units

The ecological value of the building has been deemed as **High** for bats, due to the potential several day roosts of bats within the buildings.

The ecological value of the building to birds has been deemed **High** due to the presence of suitable nesting features and nest.

0.5 Recommendations

The recommendations for Louma Cottage, Wokingham can be summarised as follows (please refer to **Section 5 – Recommendations** for a more in-depth description):

- Apply for a Natural England Development Licence to legally carry out the works.
- No re-development works can proceed on the structure until October when the bats have gone to their hibernation roosts.
- At the start of works, site supervision by a licenced bat ecologist in accordance with the Natural England Development Licence will be required.
- Install bat compensatory features on the site in accordance with **Section 5 Recommendations**
- Artificial lighting should be avoided around compensatory roosting features.
- No works can be undertaken during the bird breeding season of March to August (inclusive), unless the structure has been inspected by a suitably qualified ecologist no more than twenty-four hours prior to the commencement of works.
- Install one Robin and Wren FSC Nest Boxes
- **Optional:** Install a variety of bird boxes around the site post development to enhance the site for the local bird populations. Some suitable examples are shown in **Section 5**.

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1. Introduction

1.1 Report Rationale

This report has been prepared at the request of Ms. Rosemary Smart (proprietor). It relates to the potential presence of bats and birds at the proposed re-development works at Louma Cottage, Hollybush Ride, Wokingham, Berkshire, RG40 3QR (Central OS Grid Reference: SU 81293 64611). This survey effort involved both a desktop study and field survey being undertaken.

1.2 Site Description

The site is located in a rural setting, within the village of Finchampstead, Wokingham, Berkshire. The habitats surrounding the surveyed structure consists of buildings, fences, hard standing ground, improved grassland, scattered scrub, scattered trees, semi-improved grassland, short ephemeral plants, species-poor hedgerow, tall ruderal plants, and walls. This report relates to one structure located on site, measuring approximately 100m². The habitats on site are considered to contain potential to support the local bat and bird populations by offering roosting/nesting, commuting, and foraging opportunities.

Figure 1: An aerial photograph of the survey site at Louma Cottage, Wokingham (as shown by the red outline). The arbitrary building numbers referred to throughout this report are also illustrated.



1.3 Proposed Works

Under the current proposals, the old cottage to the west of the site is to be demolished and a new dwelling is to be constructed with associated access and garden areas. This will result in both the permanent and temporary loss and/or alteration of some of the habitats located on the proposed re-development site.

1.4 **Aims of Surveys**

The aims of the surveys were to undertake an assessment of the building(s), vegetation and surrounding area to establish whether any bats may be present and, if so, in what way they are using the site. The actions of the surveyors on the site and during the production of this report were conducted in accordance with Bat Conservation Trust (BCT) guidelines (4th edition).

1.4.1 This survey effort considered the potential for all **bat and bird species (including barn owls)** onsite:

- To establish the possibility of bat roosts and bird nests being present at the proposed development site.
- To assess any roost/nest status (i.e. what type and numbers of individuals).
- To assess suitable food, resources, and habitat requirements on site and in the local landscape.

1.4.2 The information will subsequently be used in conjunction with the knowledge of the proposed works at the site to determine the potential need for further survey effort, the impacts of the proposed scheme of works, to establish whether a Natural England Development Licence is required along with species-specific mitigation and compensation. This is done in order to keep any protected species at a favourable conservation status on site.

2. Survey Methodology

2.1 Desktop Survey Methodology

- 2.1.1 A variety of resources were independently consulted to assess the known local records within the nearby area and the importance of the site within the local landscape from an ecological perspective. The resources used were the Local Records Centre, www.naturalengland.org.uk, www.ordnancesurvey.co.uk, Google Maps, Google Earth, and Bing Maps. A search of other relevant nature conservation information was made through the use of the Multi-Agency Geographic Information for the Countryside (MAGIC) database.
- 2.1.2 The local records centre was contacted to provide data on all bat and bird species within 2km of the proposed development site. Thames Valley Environmental Records Centre (TVERC) were the relevant local record centre for this project.

2.2 Field Survey Methodology

2.2.1 Initial Site Survey

This is done by assessing the site by visually inspecting all building/s/structures and any trees/vegetation to be impacted by the proposed works. This is done to assess the resource availability for protected species on site and in the immediate area. Particular reference is made to:

- The presence or absence of bats and birds onsite.
- Any evidence of potential bat roosts and bird nests onsite.
- Whether any additional survey effort will be required.

During the initial survey, an internal and external inspection of the building(s) is undertaken to look for signs of bat activity. This is done in accordance with BCT guidelines for the assessment of building(s) and built structures.

2.2.2 External Inspection

This survey method is used to locate potential ingress and egress points around the structures that both bats and birds could use to gain access into the building. It also aims to identify any areas where cracks and crevices are present to be used as roosting/nesting features. This visual inspection is carried out in full daylight using binoculars, endoscopes, torches, and ladders. This will allow for the determination of the following information:

- The type of building(s) surveyed.
- The approximate age of building(s) surveyed.
- The construction type and materials used.
- The presence of potential roost features (e.g. missing roof tiles, raised ridge tiles, air vents, cracks, and crevices within the mortar).
- The presence of suitable ingress and egress points (e.g. missing windows and doors, missing mortar, lifted tiles).

- The location of any anecdotal evidence for the presence of protected species (e.g. nests, droppings, or food remains).

2.2.3 Internal Inspection

This survey method aims to locate and examine areas which potentially provide suitable environmental conditions for bats. This visual inspection was undertaken by using binoculars, endoscopes, torches, ladders, and bat detectors to inspect internal features of the building(s).

This will allow for the determination of the following information:

- The presence of warm areas, dark areas, joints, crevices, beams, and cavities that could be used for roosting and nesting purposes by bats and birds.
- To locate possible bat roost and bird nest sites.
- To listen for social calling bats.
- To locate any evidence of bat and bird presence through the identification of live or dead specimens, grease marks, droppings, food remnants, urine stains, and/or the characteristic smell of bats.

2.2.4 Building/Vegetation Classification

A building/vegetation classification will be assigned to each surveyed feature that is proposed to be impacted by the scheme of works. This classification is based on the features potential to support roosting bats. The rating is also influenced by the location of the structure(s) in the local landscape, along with the number of suitable alternative roosting features, the type of features present in the landscape and the surveyor's experience. For example:

A structure that has a high level of anthropogenic disturbance with limited opportunities for access by bats, that is also situated within an urbanised area with few, or no mature trees, parkland, woodland, or wetland would generally equate to having **negligible/low** potential.

Conversely, an older structure (e.g. pre 20th century or early 20th century) with multiple features suitable for use by bats that is close to optimal foraging habitat would equate to having **high** potential.

The amount of additional survey effort required for each feature will depend on its rating:

- **Negligible** – No further survey effort is required.
- **Low** – One further activity survey is required (structures only).
- **Moderate** – Two further activity surveys are required.
- **High** – Three further activity surveys are required.

2.2.5 Roost Categories

Any structures with evidence of bats will be further evaluated to assess which of the following roost categories may be present onsite:

➤ **Day Roost:**

A place where individual bats, or small groups of males, rest or shelter during the daytime. These bats are rarely found at night at these sites.

➤ **Feeding Roost:**

A place where individual bats rest or feed during the night but are rarely present in the day.

➤ **Hibernation Roost:**

A place where bats may be found either individually or together during the winter months. These roosts often have a constant cool temperature and high humidity.

➤ **Maternity Roost:**

A place where female bats give birth and raise their young to independence.

➤ **Mating Roost:**

A place where mating/copulation takes place between male and female bats. These can continue through the winter months.

➤ **Night Roost:**

A place where bats rest and/or shelter during the night but will rarely be found here during the day. These can be used colonially or individually by the bats.

➤ **Satellite Roost:**

These are alternative roosting sites that are found within close proximity to the main nursery colony within the maternity roost. These are used throughout the breeding season by individual or small groups of female bats.

➤ **Swarming Site:**

A place where large numbers of bats come together during the latter summer months through until autumn. These sites are classed as being important mating areas.

➤ **Transitional/Occasional Roost:**

A place that is used by individuals or small groups of bats for a small period of time. These are used by the bats prior to hibernation and/or shortly after hibernation.

2.2.6 Bat Detector Survey (presence/absence survey)

If required, the object for this survey method is to detect any bats leaving or returning to their roost sites within the surveyed features. This is achieved by undertaking dusk and dawn activity surveys under the following protocol:

- Commencing the survey fifteen minutes before sunset (dusk survey) and two hours before sunrise (dawn survey).
- Listening for any social calls at potential roost sites using bat detectors.
- Standing at different survey points around the building(s) and/or vegetation using bat detectors to hear the bat echolocation.
- The survey will attempt to witness the first bats emerging (dusk) and the bats returning (dawn) to their roosts.
- Standing at different transect points at foraging/commuting areas around the site.
- Carrying out this survey methodology for up to two hours after sunset (dusk) and up to fifteen minutes after sunrise (dawn). This will cover the emergence and re-entry of the bats at the potential roost site, for some bat species.

- 2.2.7 In order to comply with the required legislation, the results from the surveys will be collated to establish whether a European Protected Species (EPS) development licence will be required. If required, project appropriate species-specific compensation and mitigation measures will be devised to ensure the species remains at a favourable conservation status at the impacted site.

2.3 Surveyors Information

- 2.3.1 The survey was undertaken by licensed bat ecologist/s and members of the Chartered Institute of Ecology & Environmental Management (CIEEM) and Elite Ecology staff members:

Mr. Connor Wild: MSc, Senior Ecologist, Natural England Bat Licence Number: 2022-10201-CL17-BAT Bat Survey Level 1.

Mr. Lewis Simpson: BSc (Hons), Ecologist, Natural England Bat Licence Number: 2024-12189-CL17-BAT Bat Survey Level 1.

Mr. Mathew Nixon: BSc (Hons), Assistant Ecologist

Mr. William Harrington: BSc (Hons), Assistant Ecologist

Miss. Katherine Ward: MSc, Assistant Ecologist

Miss. Rebecca Kay: FdSc, Assistant Ecologist

2.4 Field Surveys

2.4.1 Site Surveys

Elite Ecology were also commissioned to undertake a Preliminary Ecological Appraisal of the site. This survey deemed **B1** to be of **high** potential to support roosting bats, and **B2** to be of **negligible** potential to support roosting bats. In addition, **B1** was **confirmed** to support nesting birds with **B2** being of **high** potential to support nesting birds.

2.4.2 Roost Surveys

The buildings at Louma Cottage, Wokingham were externally and internally inspected for the presence of bats with the use of various types of equipment (including binoculars, torches, endoscopes, and ladders) in full daylight. Subsequent activity surveys use a variety of bat detectors that include Bat Box Duet, SSF Bat2, EchoMeter Touch, ODRO Night Vision Camcorder and the EcoObs Batcorder. The following table outlines the environmental variables from the survey visits:

Environmental variables	Preliminary Ecological Appraisal – 25 th April 2024	Activity Survey of B1 – 2 nd of July 2024. Dusk	Activity Survey of B1 – 23 rd of July 2024. Dusk	Activity Survey of B1 – 14 th of August 2024. Dusk
Temp Start:	12°C	17°C	21°C	19°C
Temp Finish:	12°C	13°C	18°C	17°C
Humidity Start:	68%	54%	71%	74%
Humidity Finish:	68%	73%	76%	92%
Cloud Cover Start:	25%	50%	40%	77%
Cloud Cover Finish:	25%	50%	70%	90%
Wind Speed Average:	9km/h	6km/h	2km/h	14km/h
Precipitation:	None	None	None	Light

3. Results

3.1 Desktop Survey Results

The ecological data search provided by TVERC revealed multiple bat and bird species within the 2km search radius of the structure at Louma Cottage, Wokingham.

3.1.1 Bats

Within the ecological data search provided by TVERC, eleven species of bat were revealed within the 2km search radius.

The UKBAP species recorded in the search were brown long-eared (*Plecotus auritus*), noctule (*Nyctalus noctula*), soprano pipistrelle (*Pipistrellus pygmaeus*), and western barbastelle (*Barbastella barbastellus*) bats.

The non-BAP species recorded in the search were common pipistrelle (*Pipistrellus pipistrellus*), Daubenton's (*Myotis daubentonii*), Leisler's (*Nyctalus leisleri*), Nathusius's' pipistrelle (*Pipistrellus nathusii*), Natterer's (*Myotis nattereri*), serotine (*Eptesicus serotinus*), and whiskered (*Myotis mystacinus*) bats.

In addition to these, some records of unidentified bat (*Chiroptera* sp. and *Vespertilinidae* sp.), unidentified long-eared (*Plecotus* sp.), unidentified myotis (*Myotis* sp.), unidentified pipistrelle (*Pipistrellus* sp.), and indeterminate whiskered/Brandt's (*Myotis mystacinus/brandtii* agg) specimens were revealed.

The closest record to the survey site was of brown long-eared bat found on site. This record is from 2015 and pertains to droppings and one individual emerging from a roost in the adjacent Brooklands residential dwelling. In addition, a 2015 record of two roosting soprano pipistrelle bats is present off site in the adjacent property to the immediate south of the site.

3.1.2 Birds

Within the ecological data set received by TVERC, 123 bird species were revealed. The closest record to the proposed works site is of shoveler (*Spatula clypeata*) located approximately 515m to the north-east of the site.

A table with the collated bird species recorded can be found within **Appendix B**.

3.1.3 Designated Sites

There is a biodiversity opportunity area located within the site boundary. However, the site will not be affected by the works.

3.2 Field Surveys

3.2.1 Habitat Description

The site is located in a rural setting, within the village of Louma Cottage, Wokingham, Berkshire. The habitats surrounding the surveyed structure consists of buildings, fences, hard standing ground, improved grassland, scattered scrub, scattered trees, semi- improved grassland, short ephemeral plants, species-poor hedgerow, tall ruderal plants, and walls. The wider landscape includes buildings (and their associated gardens/yards), hedgerows, standing water, and woodland. Therefore, the habitats that are present in and around the site contains all of the elements that are considered to be critical in both bat and bird life cycles.

Figure 2: An aerial photograph of the surveyed site (yellow star) and some of the nearby habitats to Louma Cottage, Wokingham.



3.2.2 Building Survey

Four structures are present on the site. These include a derelict cottage (Old Louma Cottage, designated **B1**), and a ruined playhouse (**B2**).

B1 – Old Louma Cottage

External Inspection

The external walls of the building are constructed of wood and plasterboard, with wooden window frames and wooden doors. The building features a gable roof with plasterboard tiling, and a small flat roof section at the north of the building made from roofing felt. A single brick chimney is also present at the eastern elevation of the building. Wooden fasciae and bargeboards are also present.

The building is highly dilapidated which provides plenty of flight access opportunities to the interior of the building. Several gaps are present underneath the fibreboard tiles which may provide external roosting opportunities for bats. No visible or anecdotal evidence of bat presence (e.g. droppings, feeding remains, urine stains, etc.) was found during the external inspection. No active or historical bird nests were found externally.

Internal Inspection

The interior of the building is also highly dilapidated. There are roosting opportunities within the interior of the building, including in and around the brick chimney flue, gaps in the dilapidated plasterboard, and likely in the roof void area. Due to lack of safe access, no physical access was available inside the roof void during the survey visit. No visible or anecdotal evidence of bat presence (e.g. droppings, feeding remains, urine stains, etc.) was found during the internal inspection.

One wren (*Troglodytes troglodytes*) nest was found internally, in a gap in the plasterboard at the east of the building.

B2 – Ruined playhouse

A small, ruined playhouse is present on site and contains no potential roosting features considered to be of significant potential to support roosting bats, internally or externally. The interior of the shed may provide suitable bird nesting habitat for species which like to nest close to the ground, such as wrens, although no nests were identified within the ruined shed at the time of inspection.

3.2.3 Summary of the Building Inspection

Due to the amount of potential ingress/egress points and suitable roosting features, the structures of **B1** and **B2** at Louma Cottage, Wokingham were deemed as having the following bat and bird potentials.

Building Reference	Bat Potential	Bird Potential	Number of bat activity surveys required	Number of surveyors required
B1	High	Confirmed	3	3
B2	Negligible	High	0	N/A

Table 1: Low/Moderate/High potential building(s) survey recommendations. The full guidance can be found in the Bat Conservation Trust Good Practice Survey Guidelines. These guidelines are what all local authorities abide by.

Table 7.2. Recommended minimum number of survey visits for presence/absence surveys to give confidence in a negative result for structures (also recommended for trees but unlikely to give confidence in a negative result).		
Low roost suitability or PRF-I	Moderate roost suitability	High roost suitability or PRF-M
One survey visit. One dusk emergence survey ^a (structures). No further surveys required (trees).	Two separate dusk emergence survey visits ^b .	Three separate dusk emergence survey visits ^b .
a Structures that have been categorised as low potential can be problematic and the number of surveys required should be judged on a case-by-case basis (see para 5.2.44). In some cases, more than one survey may be needed, particularly where there are several buildings in this category. b Multiple survey visits should be spread out to sample as much of the recommended survey period (see Table 7.1) as possible; it is recommended that surveys are spaced at least three weeks apart, preferably more.		

3.2.4 DNA Results

No eDNA was carried out for this site as no bat droppings were identified.

3.2.5 Activity Surveys

Three activity surveys were carried out on **B1** on the 2nd and 23rd of July, and the 14th of August 2024.

Activity Survey 1 (2nd of July 2024)

The activity survey was undertaken at dusk with sunset being recorded at 21:23.

During this survey one brown long-eared (*Plecotus auritus*) bat was seen to emerge from the open window on the west elevation. In addition to this, common pipistrelle (*Pipistrellus pipistrellus*) bats were identified to be using the site for commuting, foraging, and socialising.

Figure 3: An aerial photograph of the surveyed buildings (yellow outline), the surveyor locations (yellow stars), the emergence points (blue stars), and the common bat flight paths (dotted blue lines).



Activity Survey 2 (23rd of July 2024)

The activity survey was undertaken at dusk with sunset being recorded at 21:04.

During this survey, two brown long-eared bats were seen to emerge from the open window on the northwestern elevation. One common pipistrelle bat was seen to re enter the structure and was not seen to emerge.

Brown long-ear, common pipistrelle, Daubenton's (*Myotis daubentonii*), Nathusius's pipistrelle (*Pipistrellus nathusii*), noctule (*Nyctalus noctule*), and soprano pipistrelle (*Pipistrellus pygmaeus*) bats were all identified utilising the site for foraging and commuting purposes.

Figure 4: An aerial photograph of the surveyed buildings (yellow outline), the surveyor locations (yellow stars), the emergence points (blue stars), and the common bat flight paths (dotted blue lines).



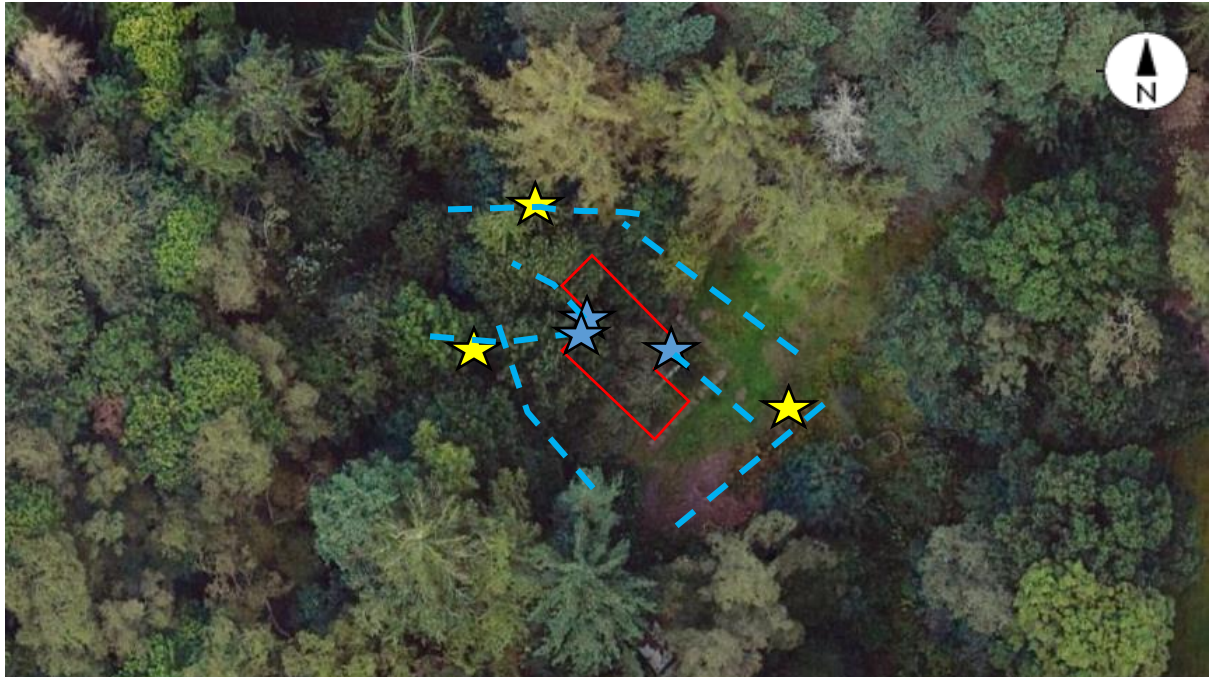
Activity Survey 3 (14th of August 2024)

The activity survey was undertaken at dusk with sunset being recorded at 20:27.

During this survey, one common pipistrelle bat was identified emerging from the structure from a gap in the wall on the northern elevation with a second common pipistrelle bat seen emerging from under the eaves on the northeast elevation. One brown long-eared bat was seen to emerge from the open window on the north elevation.

In addition to this, brown long-eared, common pipistrelle, Daubenton's, Nathusius's pipistrelle, noctule, and soprano pipistrelle bats were identified utilising the site for foraging and commuting.

Figure 5: An aerial photograph of the surveyed buildings (yellow outline), the surveyor locations (yellow stars), the emergence points (blue stars), and the common bat flight paths (dotted blue lines).



Summary

In summary, it has been deemed that **B1** at Louma Cottage, Wokingham, contains a day roost of common pipistrelle bats and a day roost of brown long-eared bats.

In addition to this, brown long-eared, common pipistrelle, Daubenton's, Nathusius's pipistrelle, noctule, and soprano pipistrelle bats were all identified to be using the site for commuting, foraging, and socialising purposes.

4. Impact Assessment

4.1 Constraints

Constraints on:	Survey Information	Equipment Used
Constraint (Yes or No):	No	No
Explanation of Constraints:	N/A	N/A
Action Taken:	N/A	N/A

4.2 Potential Impacts of the Re-development

Under the current proposals, the old cottage to the west of the site is to be demolished and a new dwelling is to be constructed with associated access and garden areas. This will result in both the permanent and temporary loss and/or alteration of some of the habitats located on the proposed re-development site. The potential impacts of these works have been identified as follows:

4.2.1 Designated Sites

There is a biodiversity opportunity area located within the site boundary. However, the site will not be affected by the works.

4.2.2 Bat Roosts

	Short-term Impacts: Disturbance	Long-term Impacts: Roost Modification	Long-term Impacts: Roost Loss
Classification:	High	High	High
Justification:	B1 at Louma Cottage, Wokingham, contains a day roost of common pipistrelle (<i>Pipistrellus pipistrellus</i>) bats and a day roost of brown long-eared (<i>Plecotus auritus</i>) bats.	B1 at Louma Cottage, Wokingham, contains a day roost of common pipistrelle (<i>Pipistrellus pipistrellus</i>) bats and a day roost of brown long-eared (<i>Plecotus auritus</i>) bats.	B1 at Louma Cottage, Wokingham, contains a day roost of common pipistrelle (<i>Pipistrellus pipistrellus</i>) bats and a day roost of brown long-eared (<i>Plecotus auritus</i>) bats.
Any further action:	Species-specific mitigation measures are required (please see Section 5 for more information).	Species-specific mitigation measures are required (please see Section 5 for more information).	Species-specific mitigation measures are required (please see Section 5 for more information).

4.2.3 Bird Nests

Due to the presence of bird nests in relation to the surveyed structure, the proposed scheme of works will be of a **high** effect to the local bird populations due to the presence of a wrens (*Troglodytes troglodytes*) nest found within the structure. Please see **Section 5.2** for further recommendations.

4.2.4 Foraging and Commuting Habitat

It is considered that the re-development of the site would have a **negligible** effect on potential foraging and commuting habitat. The site itself offers little foraging habitat, with the adjacent land containing better opportunities for bats to use. Post development, all foraging and commuting habitats will be maintained, thus not negatively affecting the local landscape.

5. Recommendations

5.1 Bats

From the site surveys it has been deemed that **B1** at Louma Cottage, Wokingham, contains a day roost of common pipistrelle (*Pipistrellus pipistrellus*) bats and a day roost of brown long-eared (*Plecotus auritus*) bats.

In addition to this, brown long-eared, common pipistrelle, Daubenton's (*Myotis daubentonii*), Nathusius's pipistrelle (*Pipistrellus nathusii*), noctule (*Nyctalus noctula*), and soprano pipistrelle (*Pipistrellus pygmaeus*) bats were all identified to be using the site for commuting, foraging, and socialising purposes.

Prior to any works, a Natural England Mitigation Licence is necessary to legally close or disturb the bat roost. Natural England licences take thirty working days once all the paperwork has been completed and submitted. As part of the licence, post-monitoring surveys will be required in subsequent years to assess whether any bats are using the compensatory measures installed around the site.

All works on the structure must wait until October/November when the bats typically move to their hibernation roosts. It is possible, however, that some bats may remain within their summer roost over the winter months for hibernation purposes. Due to this, at the beginning of the demolition works, a licenced ecologist is required to undertake soft demolition by accompanying building contractors in inspecting the structure by hand. This will ensure that no hibernating bats are harmed by the works.

One [1FS Schwegler Large Colony Bat Box](#) or similar (one per species) will be required to be installed on the morning of the commencement of the bat inspection. This will need to be situated on a nearby tree (facing north) so that any bats found can be translocated to this feature and enable the works to commence without impacting upon the bats.

Works on the structure should only take place in conditions that are deemed suitable for bat activity (temperature above 7°C and avoiding heavy rain). This will reduce any impacts on bats should they be found during the work.

To compensate for the loss of the brown long-eared bat day roost the project is to incorporate one eco bat box (cavity roosting chamber) will be required. To compensate for the loss of the common pipistrelle bat day roost the project is to incorporate one eco bat box (crevice roosting chamber) will be required.

Both boxes are to be facing east, west, south-east or south-west. These features also need to avoid any artificial lighting effects. These can be purchased by contacting admin@eliteecology.co.uk, and should be placed as close to the existing bat access points as possible.

Due to the presence of suitable bat foraging/commuting habitats on site, and to limit the potential impacts of artificial light on commuting/foraging bats on site and within the wider landscape, an Artificial Lighting Plan is required to be submitted to and approved by a licensed bat ecologist. This lighting plan must be in accordance with the provisions set out by the Institute of Lighting Professionals and Bat Conservation Trust: Guidance Note 08/18: Bats and Artificial Lighting in the UK and must comply

Bat Activity Survey

with the following general guidance: Any artificial lighting installed on site during construction and post-development must face downwards to limit the spill of artificial light onto the wider landscape. It is also recommended that all external artificial lighting post-development is sensorised (such as PIR sensorised) and is only triggered by large bodies (so that moths or other small objects do not cause the lights to turn on). It is also recommended that this lighting plan incorporates 'dark zones' around bat foraging/commuting habitats on site, namely the bordering hedgerow and scattered trees.

These measures will minimise the negative impacts artificial light could have upon foraging and commuting bats in the area. More information regarding bats and artificial light can be found in **Appendix C**.

As an optional enhancement, the site can be improved by introducing a bat friendly planting scheme in the soft landscaping plan. The table below outlines species recommended by the Bat Conservation Trust, all of which could be incorporated into the site post development.

Flowers for borders	Trees, shrubs & climbers
Aubretia	Bramble
Candytuft	Common alder
Cherry pie	Dogrose
Corncockle	Elder
Corn marigold	English oak
Corn poppy	Gorse
Echniacea	Guelder rose
English bluebell	Hawthorn
Evening primrose	Hazel
Field poppies	Honeysuckle (native)
Honesty	Hornbeam
Ice plant 'pink lady'	Ivy
Knapweed	Jasmine
Mallow	Pussy willow
Mexican aster	Rowan
Michaelmas daisy	Silver birch
Night-scented stock	Herbs
Ox-eye daisy	Angelica
Phacelia	Bergamot
Poached egg plant	Borage
Primrose	Coriander
Red campion	English marigolds
Red valerian	Fennel
Scabious	Feverfew
St. John's Wort	Hyssop
Sweet William	Lavenders
Tobacco plant	Lemon balm
Verbena	Marjoram
Wallflowers	Rosemary
Wood forget-me-not	Sweet Cicely
Yarrow	Thyme

5.2 **Birds**

From the survey visit **B1** was found to support nesting birds due to the presence of a wrens (*Troglodytes troglodytes*) nest found within the structure.

All works on the structures must be undertaken outside of the bird breeding season (March to August, inclusive). If these features are required to be altered during the bird breeding season, then a further inspection by a suitably qualified ecologist is required no more than twenty-four hours before this process commences. This is to ensure that no active nest site is illegally destroyed, due to the protection afforded to **all** active bird nests under the Wildlife and Countryside Act 1981. If an active nest is found by a site inspection, an exclusion zone around the nest will be necessary to preserve this feature until the chicks have fledged the nest.

To compensate for the loss of nesting opportunities at the site, it is necessary to include the following bird boxes on site:

- One [Robin and Wren FSC Nest Boxes](#)

In addition to this, a variety of bird boxes can be installed around the site to enhance the nesting opportunities for a variety of species within the local landscape. It should incorporate at least one of each of the following options:

- Apex Bird Box.
- Apex Robin Box.
- House Sparrow/Great Tit Bird Boxes.

Bird boxes installed on buildings should face between north and east to avoid the strong sunlight and wet winds. Boxes installed on trees can face any direction as the trees will provide shelter however the entrance must be kept clear of branches and vegetation. All bird enhancements must be situated in a way that prevents access to predators such as cats.

6. Summary

6.1 Bat Presence/Absence

From the site surveys it has been deemed that **B1** at Louma Cottage, Wokingham, contains a day roost of common pipistrelle (*Pipistrellus pipistrellus*) bats and a day roost of brown long-eared (*Plecotus auritus*) bats.

In addition to this, brown long-eared, common pipistrelle, Daubenton's (*Myotis daubentonii*), Nathusius's pipistrelle (*Pipistrellus nathusii*), noctule (*Nyctalus noctula*), and soprano pipistrelle (*Pipistrellus pygmaeus*) bats were all identified to be using the site for commuting, foraging, and socialising purposes.

6.2 Bird Presence/Absence

From the survey visit **B1** was found to support nesting birds due to the presence of a wrens (*Troglodytes troglodytes*) nest found within the structure. Additionally, the surrounding landscape provides all of the necessary habitat elements that birds require, and their presence can be assumed. The building was also deemed to be of **high** potential to support nesting birds due to the presence of suitable nesting features.

6.3 Ecological Value of Building Units

The ecological value of the building has been deemed as **High** for bats, due to the potential several day roosts of bats within the buildings.

The ecological value of the building to birds has been deemed **High** due to the presence of suitable nesting features and nest.

6.4 Recommendations

The recommendations for Louma Cottage, Wokingham can be summarised as follows (please refer to **Section 5 – Recommendations** for a more in-depth description):

- Apply for a Natural England Development Licence to legally carry out the works.
- No re-development works can proceed on the structure until October when the bats have gone to their hibernation roosts.
- At the start of works, site supervision by a licenced bat ecologist in accordance with the Natural England Development Licence will be required.
- Install bat compensatory features on the site in accordance with **Section 5 Recommendations**
- Artificial lighting should be avoided around compensatory roosting features.
- No works can be undertaken during the bird breeding season of March to August (inclusive), unless the structure has been inspected by a suitably qualified ecologist no more than twenty-four hours prior to the commencement of works.
- Install one Robin and Wren FSC Nest Boxes
- **Optional:** Install a variety of bird boxes around the site post development to enhance the site for the local bird populations. Some suitable examples are shown in **Section 5**.

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8. Appendices

Appendix A: Site Plans

Appendix B: Eco Data Map and Table

Appendix C: Artificial Light and Bats

Appendix D: Photographic Records

Appendix E: The Annual Bat Year (BCT)

Appendix F: Legislation

Appendix G: Darkest Point of The Survey Images

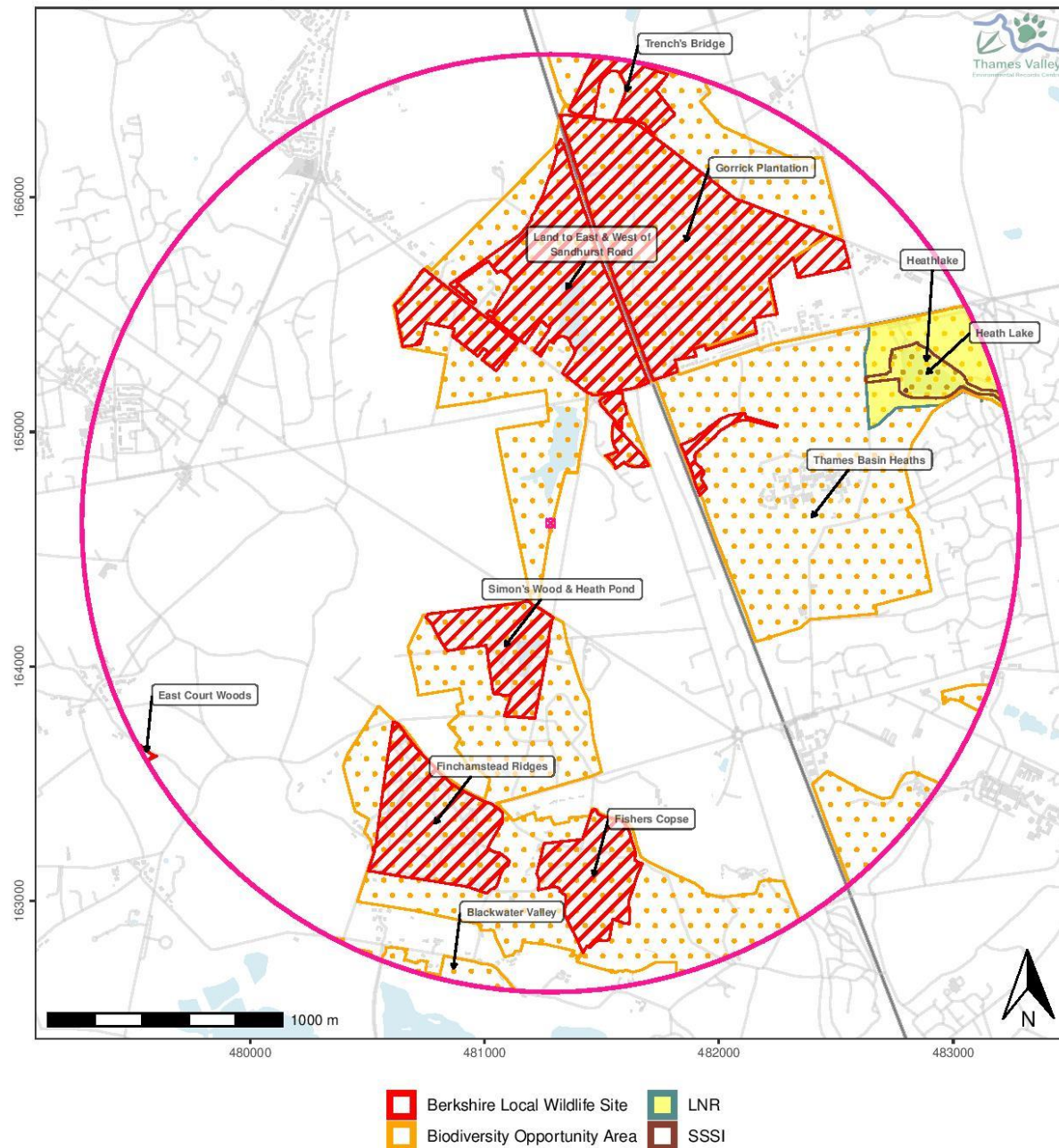
Appendix A: Site Plans



Appendix B: The Ecological Data Search Maps and Table

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Brooklands, Hollybush Ride, Wokingham Designated Sites Map



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Bat Activity Survey

Birds	
Common Name	Latin Name
Arctic Tern	<i>Sterna paradisaea</i>
Barn Owl	<i>Tyto alba</i>
Barnacle Goose	<i>Branta leucopsis</i>
Bar-tailed Godwit	<i>Limosa lapponica</i>
Bearded Tit	<i>Panurus biarmicus</i>
Bittern	<i>Botaurus stellaris</i>
Black Redstart	<i>Phoenicurus ochruros</i>
Black Tern	<i>Chlidonias niger</i>
Black-headed Gull	<i>Chroicocephalus ridibundus</i>
Black-necked Grebe	<i>Podiceps nigricollis</i>
Black-winged Stilt	<i>Himantopus himantopus</i>
Brambling	<i>Fringilla montifringilla</i>
Brent Goose	<i>Branta bernicla</i>
Bullfinch	<i>Pyrrhula pyrrhula</i>
Cattle Egret	<i>Bubulcus ibis</i>
Cetti's Warbler	<i>Cettia cetti</i>
Common Gull	<i>Larus canus</i>
Common Redpoll	<i>Acanthis flammea</i>
Common Sandpiper	<i>Actitis hypoleucos</i>
Common Scoter	<i>Melanitta nigra</i>
Common Tern	<i>Sterna hirundo</i>
Crossbill	<i>Loxia curvirostra</i>
Cuckoo	<i>Cuculus canorus</i>
Curlew	<i>Numenius arquata</i>
Curlew Sandpiper	<i>Calidris ferruginea</i>
Dartford Warbler	<i>Curruca undata</i>
Dunlin	<i>Calidris alpina</i>
Dunnock	<i>Prunella modularis</i>
Fieldfare	<i>Turdus pilaris</i>
Firecrest	<i>Regulus ignicapilla</i>
Gadwall	<i>Mareca strepera</i>
Garganey	<i>Spatula querquedula</i>
Golden Plover	<i>Pluvialis apricaria</i>
Goldeneye	<i>Bucephala clangula</i>
Grasshopper Warbler	<i>Locustella naevia</i>
Great White Egret	<i>Ardea alba</i>
Green Sandpiper	<i>Tringa ochropus</i>
Greenfinch	<i>Chloris chloris</i>
Greenshank	<i>Tringa nebularia</i>
Grey Plover	<i>Pluvialis squatarola</i>

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Grey Wagtail	<i>Motacilla cinerea</i>
Greylag Goose	<i>Anser anser</i>
Hawfinch	<i>Coccothraustes coccothraustes</i>
Herring Gull	<i>Larus argentatus</i>
Hobby	<i>Falco subbuteo</i>
House Martin	<i>Delichon urbicum</i>
House Sparrow	<i>Passer domesticus</i>
Kestrel	<i>Falco tinnunculus</i>
Kingfisher	<i>Alcedo atthis</i>
Kittiwake	<i>Rissa tridactyla</i>
Lapwing	<i>Vanellus vanellus</i>
Lesser Black-backed Gull	<i>Larus fuscus</i>
Lesser Redpoll	<i>Acanthis cabaret</i>
Lesser Spotted Woodpecker	<i>Dryobates minor</i>
Linnet	<i>Linaria cannabina</i>
Little Egret	<i>Egretta garzetta</i>
Little Gull	<i>Hydrocoloeus minutus</i>
Little Ringed Plover	<i>Charadrius dubius</i>
Long-tailed Duck	<i>Clangula hyemalis</i>
Mallard	<i>Anas platyrhynchos</i>
Marsh Harrier	<i>Circus aeruginosus</i>
Meadow Pipit	<i>Anthus pratensis</i>
Mediterranean Gull	<i>Ichthyaetus melanocephalus</i>
Merlin	<i>Falco columbarius</i>
Mistle Thrush	<i>Turdus viscivorus</i>
Moorhen	<i>Gallinula chloropus</i>
Nightjar	<i>Caprimulgus europaeus</i>
Osprey	<i>Pandion haliaetus</i>
Oystercatcher	<i>Haematopus ostralegus</i>
Peregrine	<i>Falco peregrinus</i>
Pied Flycatcher	<i>Ficedula hypoleuca</i>
Pintail	<i>Anas acuta</i>
Pochard	<i>Aythya ferina</i>
Red Kite	<i>Milvus milvus</i>
Redshank	<i>Tringa totanus</i>
Redwing	<i>Turdus iliacus</i>
Reed Bunting	<i>Emberiza schoeniclus</i>
Ring Ouzel	<i>Turdus torquatus</i>
Ringed Plover	<i>Charadrius hiaticula</i>
Rook	<i>Corvus frugilegus</i>
Ruddy Duck	<i>Oxyura jamaicensis</i>
Ruddy Shelduck	<i>Tadorna ferruginea</i>
Ruff	<i>Calidris pugnax</i>
Sanderling	<i>Calidris alba</i>
Scaup	<i>Aythya marila</i>

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Sedge Warbler	<i>Acrocephalus schoenobaenus</i>
Shelduck	<i>Tadorna tadorna</i>
Shoveler	<i>Spatula clypeata</i>
Skylark	<i>Alauda arvensis</i>
Smew	<i>Mergellus albellus</i>
Snipe	<i>Gallinago gallinago</i>
Song Thrush	<i>Turdus philomelos</i>
Sparrowhawk	<i>Accipiter nisus</i>
Spoonbill	<i>Platalea leucorodia</i>
Spotted Flycatcher	<i>Muscicapa striata</i>
Spotted Redshank	<i>Tringa erythropus</i>
Starling	<i>Sturnus vulgaris</i>
Stock Dove	<i>Columba oenas</i>
Swift	<i>Apus apus</i>
Tawny Owl	<i>Strix aluco</i>
Teal	<i>Anas crecca</i>
Tree Pipit	<i>Anthus trivialis</i>
Tundra Swan	<i>Cygnus columbianus</i>
Turnstone	<i>Arenaria interpres</i>
Water Pipit	<i>Anthus spinoletta</i>
Wheatear	<i>Oenanthe oenanthe</i>
Whimbrel	<i>Numenius phaeopus</i>
Whinchat	<i>Saxicola rubetra</i>
White Stork	<i>Ciconia ciconia</i>
Whitethroat	<i>Curruca communis</i>
Whooper Swan	<i>Cygnus cygnus</i>
Wigeon	<i>Mareca penelope</i>
Willow Warbler	<i>Phylloscopus trochilus</i>
Wood Sandpiper	<i>Tringa glareola</i>
Wood Warbler	<i>Phylloscopus sibilatrix</i>
Woodcock	<i>Scolopax rusticola</i>
Woodlark	<i>Lullula arborea</i>
Woodpigeon	<i>Columba palumbus</i>
Wren	<i>Troglodytes troglodytes</i>
Yellow Wagtail	<i>Motacilla flava</i>
Yellow-browed Warbler	<i>Phylloscopus inornatus</i>
Yellowhammer	<i>Emberiza citrinella</i>
Yellow-legged Gull	<i>Larus michahellis</i>

Appendix C: Artificial Lighting and Bats

Artificial lighting is known to affect bat's roosting and foraging behaviour, with lighting resulting in a range of impacts that includes roost desertion (BCT, 2009), delayed emergence of roosting bats (Downs et al., 2003), increased activity of some bat species and decreased activity by others (Stone et al., 2012).

An experimental approach using LED units, demonstrated that relatively fast-flying bat species, including the common pipistrelle, showed no significant impacts as a result of new artificial lighting, even when lighting was set at relatively high levels close to 50 lux.

In contrast, slow flying bats such as the myotis bats (*Myotis* spp.) showed sharp reductions in presence, even at low light levels of 3.6 lux (Stone et al., 2012).

Current recommendations for all bat species specifies that no bat roost should be directly illuminated.

Due to the impacts of lighting, mitigation and sensitive lighting design schemes are required for projects where bats are present. These should include bat friendly lighting plans that should aim to avoid lighting wherever possible. If this is not possible, then the minimisation of any lighting impacts is required by adopting the following measures:

➤ **To introduce lighting curfews or use of PIR sensors.**

Lighting curfews can be an effective way of avoiding impacts on bats. These curfews may involve either turning off lighting or dimming light units at specific times of the night, dimming units at key times of the year, providing the luminaire allows for this option via a control unit. Lighting to be triggered by PIR sensors can be expected to be illuminated only when required and for a low proportion of time.

➤ **To consider no lighting solutions where possible.**

Options such as white lining, good signage and LED cat's eyes should be considered as preferable. Reflective fittings may help make use of headlights to provide any necessary illumination in some areas.

➤ **To use only high pressure sodium or warm white LED lamps where possible.**

High pressure sodium and warm white LED lamps emit lower proportions of insect attracting UV light than mercury, metal halide lamps and white LED lighting. Generally, lamps should have a lower proportion of white or blue wavelengths, with a colour temperature <4200 kelvin recommended (BCT, 2014).

➤ **To minimise the spread of light.**

The light spread should be kept at or near horizontal to ensure that only the task area is lit. Flat cut-off lanterns or accessories should be used to shield or direct light to where it is required. Baffles, hoods, louvres and shields should be used where necessary to reduce light spill.

➤ **To consider the height of the lighting column.**

While downward facing bollard lighting is often preferable, it should be noted that a lower mounting height does not automatically reduce impacts to bats as bollard lighting can often be designed to provide up-lighting. Where bollard lighting is considered to be the most appropriate system, bollard spacing or unit density should be kept to a minimum and units should be fitted with the appropriate hoods/deflectors to reduce any up-lighting.

➤ **To avoid reflective surfaces below lights.**

The polarisation of light by shiny surfaces attracts insects increasing bat activity (BCT, 2012). Consequently, surface materials around lighting require consideration.

Appendix D: Photographic Records

Plate 1: Image showing the south-west elevation of **B1**.



Plate 2: Image showing the eastern elevation of **B1**.



Plate 3: Image showing the north-west elevation of **B1**.



Plate 4: Image showing the interior of **B1**.



Appendix E: The Annual Bat Year (BCT)

A Year in the Life of a Bat			
January		February	
	Hibernating; using up fat reserves.		Still hibernating; few fat reserves left.
March		April	
	Some activity; occasional bat seen feeding.		Awake and feeding at night.
May		June	
	Females looking for nursery sites.		Young born, usually only one.
July		August	
	Young still suckling.		Young start catching insects; females leave nursery to find males.
September		October	
	Mating season begins; start building fat reserves for hibernation.		Search for suitable hibernation site.
November		December	
	Hibernation begins although still some activity in warm weather.		Hibernating.

Appendix F: Legislation and Policy

All species of bat are fully protected under a variety of domestic, European and international legislation and conventions. These include:

- Bern Convention (Appendix II)
- Bonn Convention (Appendix II)
- Conservation Regulations (Northern Ireland) 1995
- The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019
- Countryside Rights of Way Act 2000
- Eurobats Agreement
- Habitats Directive (Annexes IV and II)
- Habitats Regulations 1994 (as amended) Scotland
- NERC Act 2006
- Wildlife and Countryside Act 1981 (as amended)
- Wild Mammals Protection Act

In addition to this, some species have additional protection by being listed on the UK Biodiversity Action Plan (UKBAP).

The legislation afforded to bats makes it illegal to possess or control any live or dead specimens, to damage, destroy or obstruct access to any structure or place used for shelter, protection or breeding, and to intentionally disturb a bat while it is occupying a structure or place which it uses for that purpose.

All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended), which protects birds, nests, eggs and nestlings from harm. In addition to this, some rarer species, such as barn owls are afforded extra protection.

National Planning Policy Framework, Section 15:

In early 2012, the National Planning Policy Framework (NPPF) replaced much previous planning policy guidance, including Planning Policy Statement 9: Biological and Geological Conservation. The government circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact within the Planning System, which accompanied PPS9, still remains valid. A presumption towards sustainable development is at the heart of the NPPF. This presumption does not apply however where developments require appropriate assessment under the Birds or Habitats Directives. The latest National Planning Policy Framework was updated in February 2019, with the section in relation to conserving the natural environment being located within section 15.

Section 15, on conserving and enhancing the natural environment, sets out how the planning system should contribute to and enhance the natural and local environment by minimising impacts on biodiversity and, where possible, provide net gains in biodiversity. Opportunities to incorporate biodiversity gains into a development should be encouraged.

Biodiversity 2020:

This sets out to halt overall biodiversity loss and support healthy well-functioning ecosystems by establishing coherent ecological networks, with more and better places for nature, to the benefit of wildlife and people. The government's policy is aimed at individuals, communities, local authorities, charities, business and government, which all have a role to play in delivering Biodiversity 2020.

Appendix G: Darkest Point of The Survey Images

Plate 1: Camera facing the northeast and south elevation on the first survey



Plate 2: Camera facing the north on the first survey



Plate 3: Camera facing the southwest elevation on the first survey.



Plate 4: Camera facing the northeast and south elevation on the second survey



Plate 5: Camera facing the north on the second survey



Plate 6: Camera facing the southwest elevation on the second survey.



Plate 7: Camera facing the northeast and south elevation on the third survey



Plate 8: Camera facing the north on the third survey



Plate 9: Camera facing the southwest elevation on the third survey.



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The latest good practice guidelines put in place by Natural England or the relevant statutory conservation bodies have been followed by the surveyors on site. If those methodologies fail to identify a protected species during the survey efforts, no responsibility can be attributed to Elite Ecology. If any of these guidelines are adapted between the date(s) of the surveys being undertaken and the submission of this report, then Elite Ecology takes no responsibility for this.

Should any equipment be damaged or lost on site at the fault of the client(s), then Elite Ecology withholds the right to charge 100% above the current market value for that exact product or the nearest similar product.

The survey results purport the current status of the site and its potential for protected species utilisation at the time of surveying. It should not be viewed as a complete list of the possible flora and fauna species that could be using the site at different times of the year.

Elite Ecology has been provided with full payment for this report and thus the product has been released to the client(s) for the purpose of their planning application. If any part of the report is lost or altered without the written permission of Elite Ecology, then the entire report becomes invalid. Due to the potential for continual change within the natural world, this report is valid for **2 years only** from the date of the last survey visit. If this report is submitted after the 2 year deadline, then a further updated inspection will be required to ascertain whether the site remains in the same condition as it was when initially inspected.

No reliance should be made on any such comments in relation to the structural integrity of the features located on the surveyed site. All information within the report is based solely on evidence that has been found on site during the service provided. No individual opinion or inference will be made other than that of the suitably qualified ecologist appointed to the project.