



Preliminary Roost Assessment

39 Harcourt Drive, Earley

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0. Executive Summary

0.1 This report was commissioned by Mr. Charanjit Singh to assess the likelihood of the presence of bats at the proposed redevelopment site located at 39 Harcourt Drive, Earley RG6 5TL. To complete this task, Eco 360 carried out a desktop study and a field survey.

0.2 The current proposals are for a loft conversion with rear dormer.

0.3 Due to the amount of potential ingress/egress points and suitable roosting features, the building was deemed as having **negligible** potential for bats to roost and **negligible** potential for birds to nest. Therefore, no further activity surveys are required during the bat survey season (May to September, inclusive).

0.4 Summary

Bat presence/absence

From the survey visit undertaken on the site, it can be concluded that the surveyed structure contains **negligible** bat roost potential. Therefore, no further activity surveys are required. However, foraging and commuting bats are anticipated within the local landscape and their presence within the vicinity of the building can be assumed.

Bird presence/absence

From the survey visit undertaken on the site, it can be concluded that the surveyed structure contains no birds' nests. However, the surrounding landscape provides all of the necessary habitat elements that birds require, and their presence can be assumed.

Ecological value of building units

The ecological value of the buildings has been deemed as **negligible** to bats.
The ecological value of the buildings to birds has been deemed **negligible** due to the absence of bird nests.

0.5 Recommendations

The recommendations for the surveyed building can be summarised as follows (please refer to section '5 – Recommendations' for a more in-depth description):

- No compulsory recommendations are apparent.
- Artificial lighting should be avoided where possible. If this is not possible, this should be screened for large bodies only and pointed downwards.
- **Optional Enhancement:** Enhance the site for bats by installing Eco Bat Boxes, Integrated Eco Bat Boxes or Bat Access Tiles on appropriate elevations (southern, eastern and/or western) – these must avoid artificial lighting.
- **Optional Enhancement:** Incorporate a bat friendly planting scheme post development.
- **Optional Enhancement:** Install a variety of bird boxes around the site post development to enhance the site for the local bird populations.

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1 Introduction

1.1 Report rationale

This report was commissioned by Mr. Charanjit Singh to assess the likelihood of the presence of bats and birds at the proposed redevelopment site located at 39 Harcourt Drive, Earley RG6 5TL (OS Grid Reference: SU 73587 70969). To complete this task, Eco 360 carried out a desktop study and a field survey. The survey was undertaken by licensed bat ecologist/s and members of the Chartered Institute of Ecology & Environmental Management (CIEEM). The survey was carried out by Mr Matthew Kirby, BSc (Hons), Ecologist, Class 2 Bat Survey License 2020-49774-CLS-CLS on the 27th June.

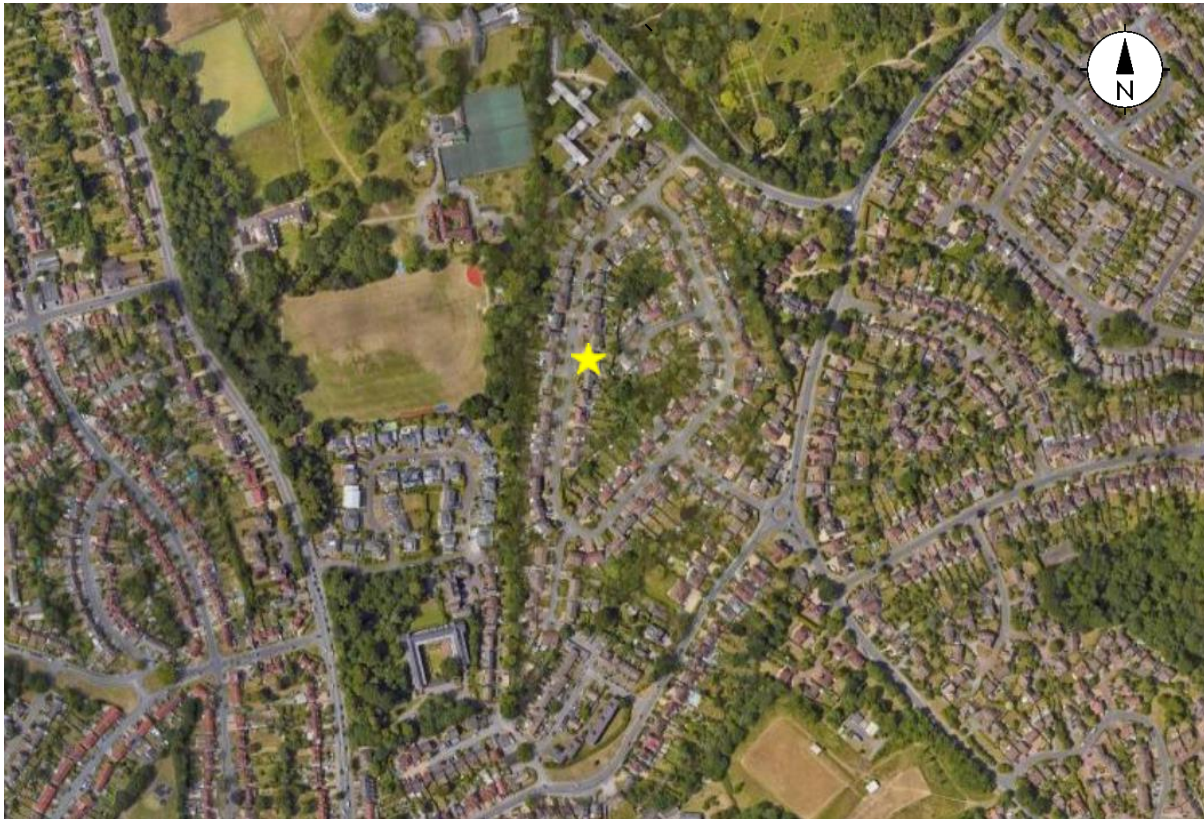
1.2 Site description

The surveyed building is a two-storey residential dwelling situated in a suburban setting. In the immediate surroundings of the surveyed building, there are residential dwellings and other outbuildings, amenity grassland, scattered trees and hard standing ground. These habitats are also present within the wider landscape. Given its location and surroundings, the site has the potential to support local bat and bird populations through providing commuting and foraging opportunities.

Figure 1: An aerial photograph of the surveyed site (as shown by the red outline).



Figure 2: An aerial photograph of the surveyed site (yellow star) and some of the nearby habitats



1.3 **Description of Proposed works**

The current proposals are for a loft conversion with rear dormer.

1.4 **Purpose of surveys**

The purpose of the surveys was to determine if any bats or birds were present at the site, and if so, to understand how they were using the building(s), vegetation, and surrounding area. The surveys were carried out following Bat Conservation Trust 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 proposed works at the site will be evaluated using the gathered information and current knowledge in order to determine if further survey efforts are necessary, assess the potential impacts of the proposed scheme, and determine if a Natural England Development Licence is required for the protection of any protected species on site. This is done in order to maintain a favourable conservation status for these species.

2 Legislation

2.1 Legislation

All species of bat are fully protected under The Conservation of Habitats and Species Regulations 2017 (as amended).

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.

2.2 National Planning Policy Framework 2021

National Planning Policy Framework 2021 The National Planning Policy Framework promotes sustainable development. The Framework specifies the need for protection of designated sites and priority habitats and species. An emphasis is also made on the need for ecological infrastructure through protection, restoration and re-creation. The protection and recovery of priority species (considered likely to be those listed as species of principal importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006) is also listed as a requirement of planning policy

In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; measurable gains in biodiversity in and around developments are incorporated; and planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

3 Survey Methodology

3.1 Desktop Survey Methodology

3.1.1 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.

3.1.2 The local records centre was contacted to provide data on all bat and bird species within 2km of the proposed development site at this point.

3.2 Field Survey Methodology

3.2.1 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 birds' 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.

3.2.2 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, endoscope, 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).

3.2.3 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, endoscope, 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.

3.2.4 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.

3.2.5 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.

3.2.6 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 15 minutes before sunset (dusk survey) and 2 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 15 minutes after sunrise (dawn). This will cover the emergence and re-entry of the bats at the potential roost site, for some bat species.

3.2.7 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.

4 Results

4.1 Desktop Survey Results

The ecological data search provided by Thames Valley Environmental Records Centre (TVERC) revealed multiple bat and bird species within the 2km search radius of the structure(s).

4.1.1 Bats:

The ecological data search revealed several bat records within the 2km search radius. The UKBAP species recorded in the search were noctule (*Nyctalus noctula*) bats. The non-BAP species recorded in the search were common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle (*Pipistrellus pygmaeus*) bats. In addition to these, there were a few records of unidentified myotis (*Myotis* sp.) and unidentified pipistrelle (*Pipistrellus* sp.) specimens within the search radius.

4.1.2 Birds:

No bird data has been ordered by Eco 360 for this project. All UK birds can be split into three categories of conservation importance (red, amber and green – please see RSPB for more information). Eco 360 feels that this survey effort accurately represents the birds that may be present on the survey site.

4.1.3 Designated sites

As the current proposals remain within the site boundary, it was not necessary to obtain any further information regarding both Statutory and Non-Statutory Nature Conservation Designations. This is due to the proposed works not altering any of the landscape surrounding the site.

4.2 Field surveys

4.2.1 Site Surveys

Eco 360 were not made aware of any previous site surveys.

4.2.2 Roost Surveys

The structure was externally and internally inspected for the presence of bats and birds with the use of various types of equipment (including binoculars, torches, endoscope and ladders) in full daylight. Subsequent activity surveys use a variety of bat detectors that include Infrared Cameras, Echo Meter Touch, Bat Box Duet, SSF Bat2 and the EcoObs Batcorder.

4.2.3 Building survey

External Inspection:

The surveyed structure at 39 Harcourt Drive is a two-storey, semi-detached residential dwelling constructed with brick walls and a pitched, tiled roof. The external inspection revealed no roosting features suitable for bats. The roof tiles are in very good condition with no lifted, dislodged or missing tiles. The windows and doors are intact, providing no potential ingress points for bats. The soffits and external walls are in good condition with no visible cracks or crevices. No gaps around the chimney are apparent and the lead flashing around the chimney is well sealed. Additionally, no evidence of nesting birds was found externally.

Internal Inspection:

The loft space was inspected for any evidence of bats and birds. All sections of the loft were accessible during the visit. There were no signs of bat droppings within the loft area. The roof is supported by timber beams and there is a bitumen felt underlay underneath the roof tiles. The felt was in good condition with no obvious gaps apparent. No crack in the internal walls are evident. Some cobwebbing was also evident within the loft space. No evidence of nesting birds was identified internally.

Table 1: Bat Conservation Trust Good Practice Survey Guidelines.

Bat Conservation Trust

Table 7.3 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	Moderate roost suitability	High roost suitability
One survey visit. One dusk emergence or dawn re-entry survey ^a (structures). No further surveys required (trees).	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey. ^b	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn. ^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 Section 5.2.9). If there is a possibility that quiet calling, late-emerging species are present then a dawn survey may be more appropriate, providing weather conditions are suitable. 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 two weeks apart, preferably more. A dawn survey immediately after a dusk one is considered only one visit.

4.2.4 DNA Results

No DNA Results were obtained for the site as no bat droppings were found.

4.2.5 Activity surveys

No activity surveys were undertaken on the structure as Eco 360 were only commissioned to undertake a Preliminary Roost Assessment (PRA) of the buildings.

5 Impact Assessment

5.1 Survey Limitations

There were no constraints to carrying out the survey.

5.2 Potential Impacts of the re-development

5.2.1 Designated sites

As the proposed works are due to remain within the site boundary, the presence of any designated sites nearby is not applicable to this project. This, therefore, means that any building works would be of no detriment to the surrounding habitats and landscape.

5.2.2 Bat Roosts

No bat roosts are located within the surveyed structure. The proposed scheme of works will not alter the wider landscape and will not disturb foraging or commuting bats.

5.2.3 Bird Nests

Due to the absence of bird nests in relation to the surveyed structure, the proposed scheme of works will be of a **negligible** effect to the local bird populations. Please see section 5 for more details.

5.2.4 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 and birds to use. Post development, all foraging and commuting habitats will be maintained, thus not negatively affecting the local landscape.

6 Recommendations

6.1 Bats

The surveyed structure has been deemed to be absent of roosting bats. Therefore, the proposed scheme of works will not impact upon any bats or their roosts.

However, it is recommended that optional site enhancement measures could be included into the scheme of works. This could include the installation of Eco Bat Boxes, Integrated Eco Bat Boxes or Bat Access Tiles on the redeveloped structure. These features should avoid any artificial lighting, with **no modern breathable felt** to be used around any bat access tiles.

It is recommended that artificial lighting at the site is kept to a minimum. If this is required, it will be necessary to have this pointing downwards and/or sensorised to large bodies only.

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

6.2 Birds

From the site survey, it has been established that there are no bird nests present within the surveyed structure currently, nor is there any evidence of historic nesting. Due to this, no further compulsory measures are required for this species.

To enhance the site for nesting birds, a variety of bird boxes could be installed around the site to enhance the nesting opportunities within the local landscape. These should be targeted for species within the area and ideally encapsulate as many species as feasibly possible.

7 References

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8 Appendices

Appendix A: Site Plans

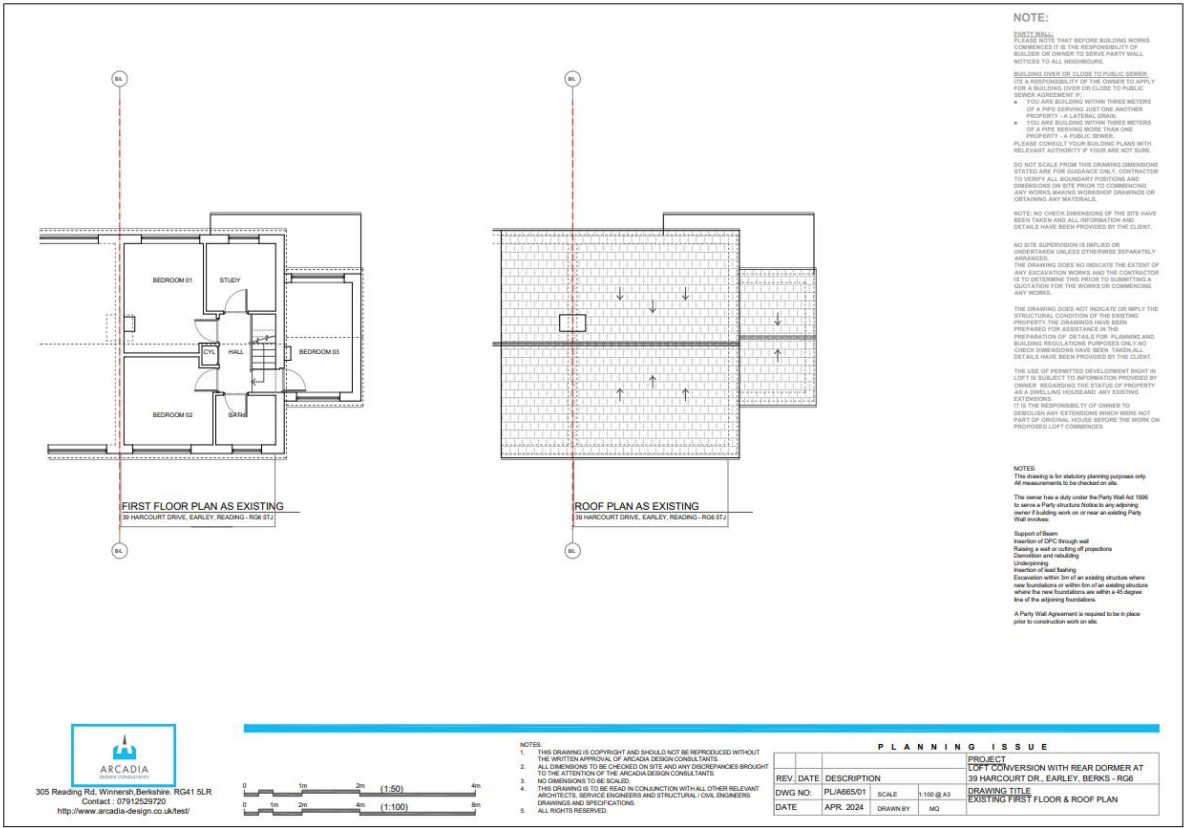
Appendix B: Eco Data Map

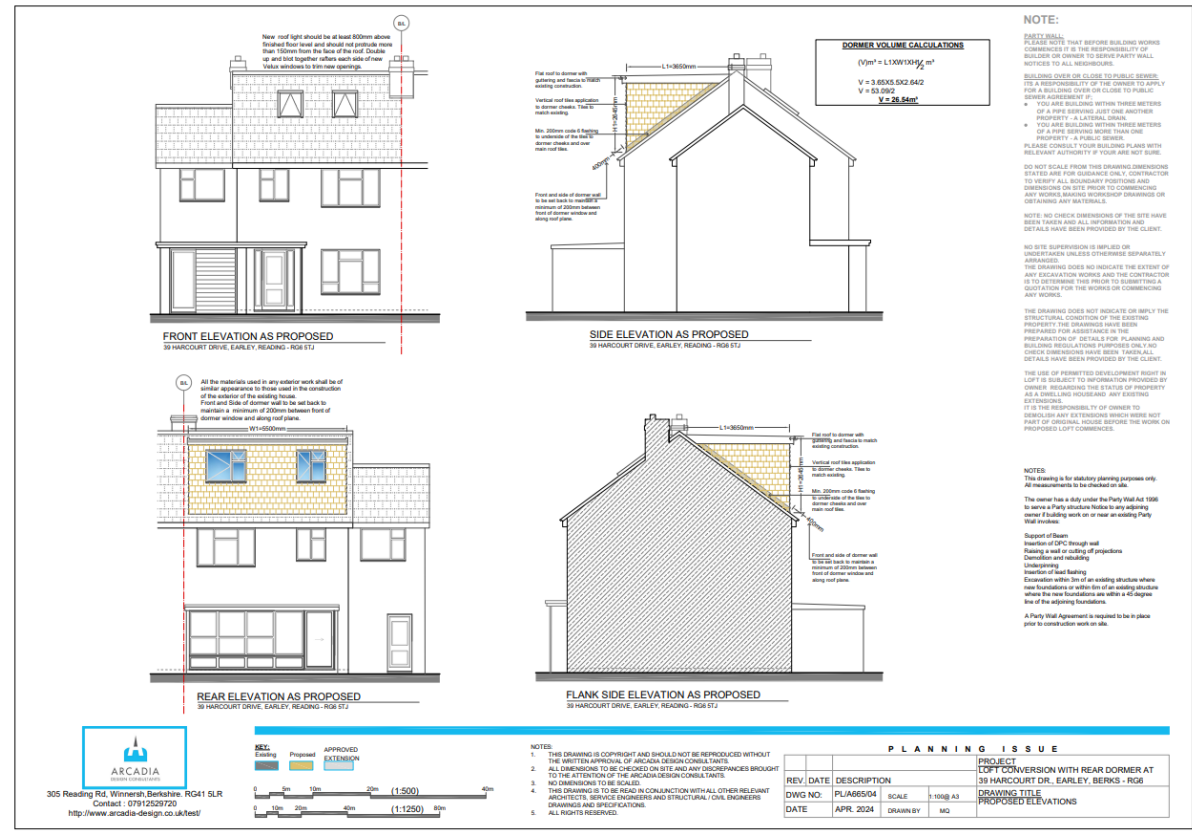
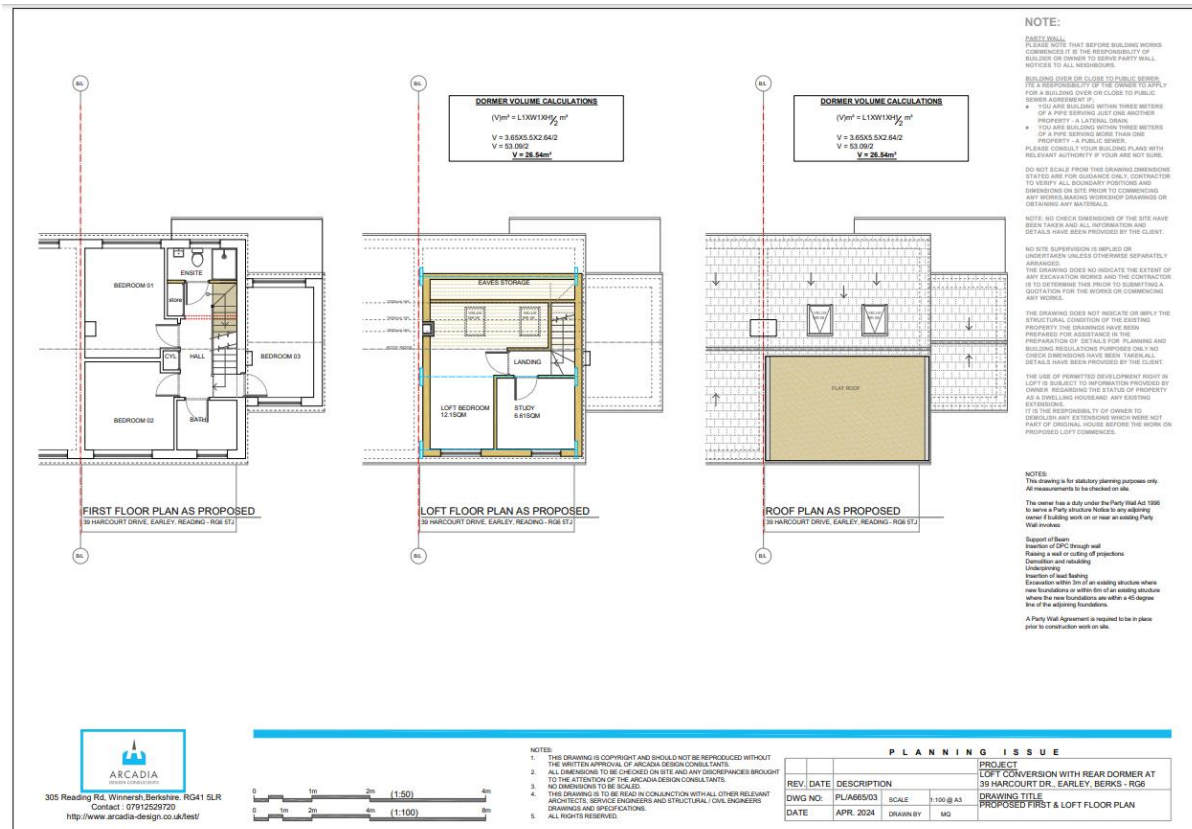
Appendix C: Artificial Light and Bats

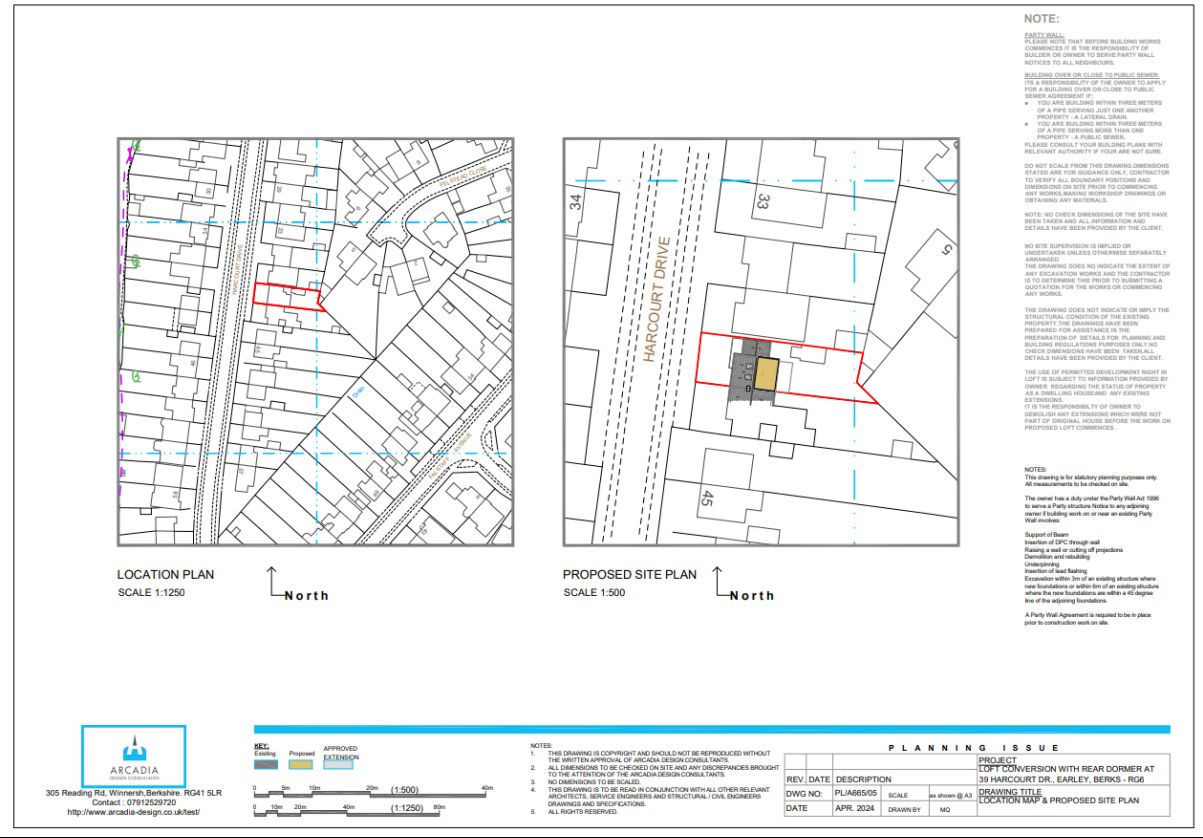
Appendix D: Photographic Records

Appendix E: DNA Analysis

Appendix A: Site Plans







Appendix B: Data Search Maps

No data search maps were provided.

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: View of the soffit which was found to be in good condition



Plate 2: View of the rear elevation



Plate 3: View of the roof tiles at the rear of the property.



Plate 4: View of the side extension.



Plate 5: View of the interior loft space



Plate 6: View of the roofing felt and timber beams.



Plate 7: View of the front of the property.



Plate 8: View of the roof tiles at the front of the property.



Plate 9: No gaps or missing mortar are apparent on the side elevation.

Appendix E: DNA Analysis

No bat droppings were found.

9 Notice to Readers: Conditions of this Report

All reports are certified products and cannot be shown, copied or distributed to third parties without the written permission of Eco 360. No liability is accepted for the contents of the report, other than to that of the client(s). If any part of this report is altered without the written permission of Eco 360, then the whole report becomes invalid.

Eco 360 agrees to supply ecological consulting services and advice of a preliminary or thorough nature as advised or commissioned. Upon commissioning Eco 360 to undertake the work, the client(s) grant access to the site upon the agreed date. If no site access is available upon this date, Eco 360 holds the right to charge the client(s) for lost staffing time and additional travel costs.

Eco 360 undertake all site surveys with reasonable skill, care and diligence, within the terms of the contract that has been agreed with the client and abiding by the Eco 360 Terms and Conditions. The actions of the surveyors on site, and during the production of the report, were undertaken in accordance with the Code of Professional Conduct for the Chartered Institute of Ecology and Environmental Management.

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 Eco 360. If any of these guidelines are adapted between the date(s) of the surveys being undertaken and the submission of this report, then Eco 360 takes no responsibility for this.

Should any equipment be damaged or lost on site at the fault of the client(s), then Eco 360 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.

Eco 360 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 Eco 360, 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.