



Elite Ecology

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**The Britannia,
Cleaton**



Preliminary Roost Assessment

July 2025



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0. Executive Summary

- 0.1** This report has been prepared at the request of ABA Architecture and Interiors. It relates to the potential presence of bats and birds at the proposed re-development site located at The Britannia, Shields Road, Cleadon Village, South Tyneside, Tyne and Wear, SR6 7PG (OS Grid Reference: NZ 38410 62411). To fulfil this brief, Elite Ecology undertook both a desktop study and a field survey.
- 0.2** Under the current proposals, the plans are to install new lighting on the building and surrounding trees. 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 presence of suitable roosting features, **B1** was deemed as having **low** potential to support roosting bats.

0.4 Summary

Bat Presence/Absence

From the site survey, it has been established that **B1** has a **low** potential to support roosting bats. Therefore, further survey action is required for this building. In addition to this, 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

B1 was deemed to be of **low** potential to support nesting birds. However, no physical bird nests were found in these buildings during these surveys. Additionally, 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 **B1** has been deemed as **unknown** to bats as further survey effort is required.

The ecological value of **B1** to birds has been deemed as **negligible** due to the absence of any nesting birds within these buildings.

0.5 Recommendations

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

- A minimum of one bat emergence survey is required on **B1** in the optimal survey season of May to August (inclusive).
- **Optional:** A variety of bat boxes can be installed on site.
- **Optional:** A bat friendly planting scheme can be implemented around the site.
- **Optional:** A variety of bird boxes can be installed on site.

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1. Introduction

1.1 Report Rationale

This report has been prepared at the request of ABA Architecture and Interiors. It relates to the potential presence of bats and birds at the proposed re-development site located at The Britannia, Shields Road, Cleadon Village, South Tyneside, Tyne and Wear, SR6 7PG (OS Grid Reference: NZ 38410 62411). To fulfil this brief, Elite Ecology undertook both a desktop study and a field survey.

1.2 Site Description

The site is located in an urban setting within the centre of the village of Cleadon, itself situated approximately 1.5km from the Tyne and Wear town of South Shields. The site contains a number of habitats. These include buildings, developed land, and introduced shrub. The building of interest measures a total of approximately 762m². Therefore, due to the habitats present, the site is considered to contain potential to support the local bat and bird populations by offering roosting/nesting, commuting, and foraging opportunities.

Figure 1: Aerial photograph showing the outline of the surveyed building (red outline) at The Britannia, Cleadon.



1.3 Proposed Works

Under the current proposals, the plans are to install new lighting around the building and on the trees located on site, add additional hard landscaping areas, and add decoration to the building as well as carrying out maintenance work. 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. Environmental Records Information Centre North East (ERICNE) 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:

- **None/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).
- 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) from 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). 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, members of the Chartered Institute of Ecology & Environmental Management (CIEEM) and/or Elite Ecology staff members:

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

Miss. Katherine Ward: MSc, Assistant Ecologist.

2.4 Field Surveys

2.4.1 Site Surveys

Elite Ecology have not been made aware of any previous surveys on the surveyed building.

2.4.2 Roost Surveys

The buildings at The Britannia, Cleadon 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. The survey was conducted on the 4th of July 2025. The following are the environmental variables during the survey.

Environmental variables	PRA Survey of the Building – 4 th of July 2025 Daytime
Temp Start:	17°C
Temp Finish:	17°C
Humidity Start:	82%
Humidity Finish:	82%
Cloud Cover Start:	70%
Cloud Cover Finish:	70%
Wind Speed Average:	18mph Westerly
Precipitation:	None

3. Results

3.1 Desktop Survey Results

The ecological data search provided by ERICNE revealed multiple bat and bird species within the 2km search radius of the buildings at The Britannia, Cleadon.

3.1.1 Bats

Within the ecological data search provided by ERICNE, eight bat species were recorded within 2km of the site.

The only UKBAP species recorded were noctule (*Nyctalus noctula*) and soprano pipistrelle (*Pipistrellus pygmaeus*) bats.

The non UKBAP species recorded were common pipistrelle (*Pipistrellus pipistrellus*) and Nathusius's pipistrelle (*Pipistrellus nathusii*) bats.

In addition to this, some indeterminate records of bat (Chiroptera indet.), bat (Vespertilionidae indet.), myotis (*Myotis* sp.), pipistrelle (*Pipistrellus* sp.) bats were also revealed.

The closest occurrence to the site was of a common pipistrelle bat, recorded feeding on site.

3.1.2 Birds

No ecological data was requested pertaining to bird species.

3.1.3 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.

3.2 Field Surveys

3.2.1 Habitat Description

The site is located in an urban setting within the centre of the village of Cleadon, itself situated approximately 1.5km from the Tyne and Wear town of South Shields. The site contains a number of habitats. These include buildings, developed land, and introduced shrub. The building of interest measures a total of approximately 762m². Therefore, due to the habitats present, the site is considered to contain potential to support the local bat and bird populations by offering roosting/nesting, commuting, and foraging opportunities.

The wider landscape is dominated by arable land and developed land, with further habitats present being amenity grassland, hedgerows, and scattered trees. Therefore, the site itself is considered to contain potential to support the local bat and bird populations by offering roosting/nesting, commuting and foraging opportunities, as well as being connected to further habitats in the local landscape.

Figure 2: An aerial map showing the site at The Britannia, Cleadon (as shown by the yellow star) in relation to some of the local landscape.



3.2.2 Building Surveys

There is one building on site the restaurant building (**B1**).

Building 1 (B1)

External Inspection

B1 is a large public house and restaurant building located to the south of the car park on the site. The building consists of a newer addition to the north and the older building to the south-east. The majority of the roof is flat towards the centre of the building and is constructed of clay tiles. A sloped roof borders the northern and western aspects of the roof gabled on the eastern and southern elevation and constructed of clay tiles and ridge tiles. On the older part of the building to the south-east the roof is cross gabled. The roof tiles are made from slate with the ridge tiles made from clay. There are a number of gaps under tiles, lifted tiles and missing tiles on the south-eastern elevation on the building which could be used as access points by protected species. The sloped roof to the northern part of the building provides an overhang from the wall leading to alcoves which could be utilised by roosting bats. Netting has been used to deter birds from nesting however this would not prevent bats from accessing. Chimneys are present on the older part of the building.

The walls in the newer part of the building to the north are cavity walls constructed of brick and mortar. The walls in the older part of the building are solid and constructed of stone. A vent is present on the southern elevation of the building. The gaps in the vents could be utilised as ingress/egress points by protected species. Intact wooden doors and windows are also present across the building allowing natural light to enter the building. Lead flashing is also present at various points across the roof, and there are gaps underneath this on the south-eastern elevation that could further be utilised as access points by protected species. Other features identified on the external of the building were drainpipes, and guttering. Furthermore, artificial lighting in the form of wall lighting and flood lighting is present at multiple points across the building and on all elevations. There was no physical evidence of externally nesting birds or roosting bats on **B1**.

Internal Inspection

There is only a roof void within the older part of the building to the south-east of the site. The flat roof to the north does not have an internal roof void. The internal roof in **B1** is supported by timber beams with the slate roof tiles covering the internal roof. There are gaps in the roof due to missing and lifted tiles which allow some natural light to enter, however, the roof space has low light levels. Wooden beams provide support from the roof floor. Insulation material is present on the floor of the internal roof with wooden flooring installed. The roof void has been used to store materials used in the pub such as chairs and mattresses which leaves little room for flight in areas. The internal walls are constructed of brick and mortar. Cobwebs are present in the roof space which may suggest that flight is not taking place in the roof void due to the lack of disturbance. There was no physical evidence of internally nesting birds or roosting bats within the building.

3.2.3 Summary of the Building Inspections

Due to the amount of potential ingress/egress points and suitable roosting features, the structure of **B1** The Britannia, Cleadon was deemed as having the following bat and bird potentials, and will need further surveys as detailed:

Table 1: The potentials of the buildings **B1** to support roosting bats and nesting birds, at The Britannia, Cleadon.

Building	Nesting Bird Potential	Bat Roost Potential	Number of bat emergence surveys required	Number of survey positions required for bat activity survey
B1	Low	Low	1	4

Table 2: 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 DNA analysis was carried out for this site due to no bat droppings being found.

3.2.5 Emergence Surveys

No emergence surveys were undertaken on the structure as Elite Ecology were only commissioned to undertake a Preliminary Roost Assessment (PRA) of the building.

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 plans are to install new lighting around the building and on the trees located on site, add additional hard landscaping areas, and add decoration to the building as well as carry out maintenance work. The potential impacts of these works have been identified as follows:

4.2.1 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.

4.2.2 Bat Roosts

B1	Short-term Impacts: Disturbance	Long-term Impacts: Roost Modification	Long-term Impacts: Roost Loss
Classification:	Unknown.	Unknown.	Unknown
Justification:	B1 was of low potential to support roosting bats.	B1 was of low potential to support roosting bats.	B1 was of low potential to support roosting bats.
Any further action:	A minimum of one bat emergence survey is required on the building during the optimum bat survey season of mid-May to August (inclusive).	A minimum of one bat emergence survey is required on the building during the optimum bat survey season of mid-May to August (inclusive).	A minimum of one bat emergence survey is required on the building during the optimum bat survey season of mid-May to August (inclusive).

4.2.3 Bird Nests

B1 was deemed to have a **low** potential to support nesting birds due to the nesting features identified on the building. It is therefore deemed that the uncompensated and unmitigated works will have a **low** impact upon nesting birds in the local area due to the loss of suitable nesting habitat for birds in the local area.

4.2.4 **Bat Foraging and Commuting Habitat**

It is considered that the re-development of the site would have a **low** effect on potential foraging and commuting habitat. The site itself offers little quality 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 survey, it has been established that **B1** has a **low** potential to support roosting bats. As such, a minimum of one bat emergence survey is required on the building in the optimal survey season of mid-May to August (inclusive). A total of four surveyors is deemed sufficient to cover all elevations of the building. If a bat is found emerging from the building during this survey, then two further surveys will be required on the building during the bat activity survey season of May to September (inclusive), with at least one of these taking place in the optimal bat activity survey season.

Further recommendations, mitigatory, and compensatory measures will be devised following the additional survey effort.

Bat Site Enhancements

In order to improve the roosting opportunities on site, a variety of Bat Boxes can be installed around the site. These can be purchased by contacting admin@eliteecology.co.uk.

The site can further be enhanced 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**

B1 was deemed to be of **low** potential to support nesting birds. However, no physical bird nests were found on the building during this survey. As such, no further action is required.

Bird Site Enhancements

As an optional site enhancement, additional bird boxes can be installed on site to enhance nesting opportunities for birds in the local area. The following models are recommended but similar alternatives are also acceptable.

The site could be enhanced for birds by installing a variety of bird boxes on site, such as a [Large Bird Box](#) and a [House Sparrow Nest Box](#). Boxes can be ordered by contacting Elite Ecology at: admin@eliteecology.co.uk.

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 survey, it has been established that **B1** has a **low** potential to support roosting bats. Therefore, further survey action is required for this building. In addition to this, foraging and commuting bats are anticipated within the local landscape and their presence within the vicinity of the building can be assumed.

6.2 Bird Presence/Absence

B1 was deemed to be of **low** potential to support nesting birds. However, no physical bird nests were found in these buildings during these surveys. Additionally, the surrounding landscape provides all of the necessary habitat elements that birds require, and their presence in the local area can be assumed.

6.3 Ecological Value of Building Units

The ecological value of **B1** has been deemed as **unknown** to bats as further survey effort is required.

The ecological value of **B1** to birds has been deemed as **negligible** due to the absence of any nesting birds within these buildings.

6.4 Recommendations

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

- A minimum of one bat activity survey is required on **B1** in the optimal survey season of May to August (inclusive).
- **Optional:** A variety of bat boxes can be installed on site.
- **Optional:** A bat friendly planting scheme can be implemented around the site.
- **Optional:** A variety of bird boxes can be installed on site.

7. References

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8. Appendices

Appendix A: Site Plans

Appendix B: Eco Data Map

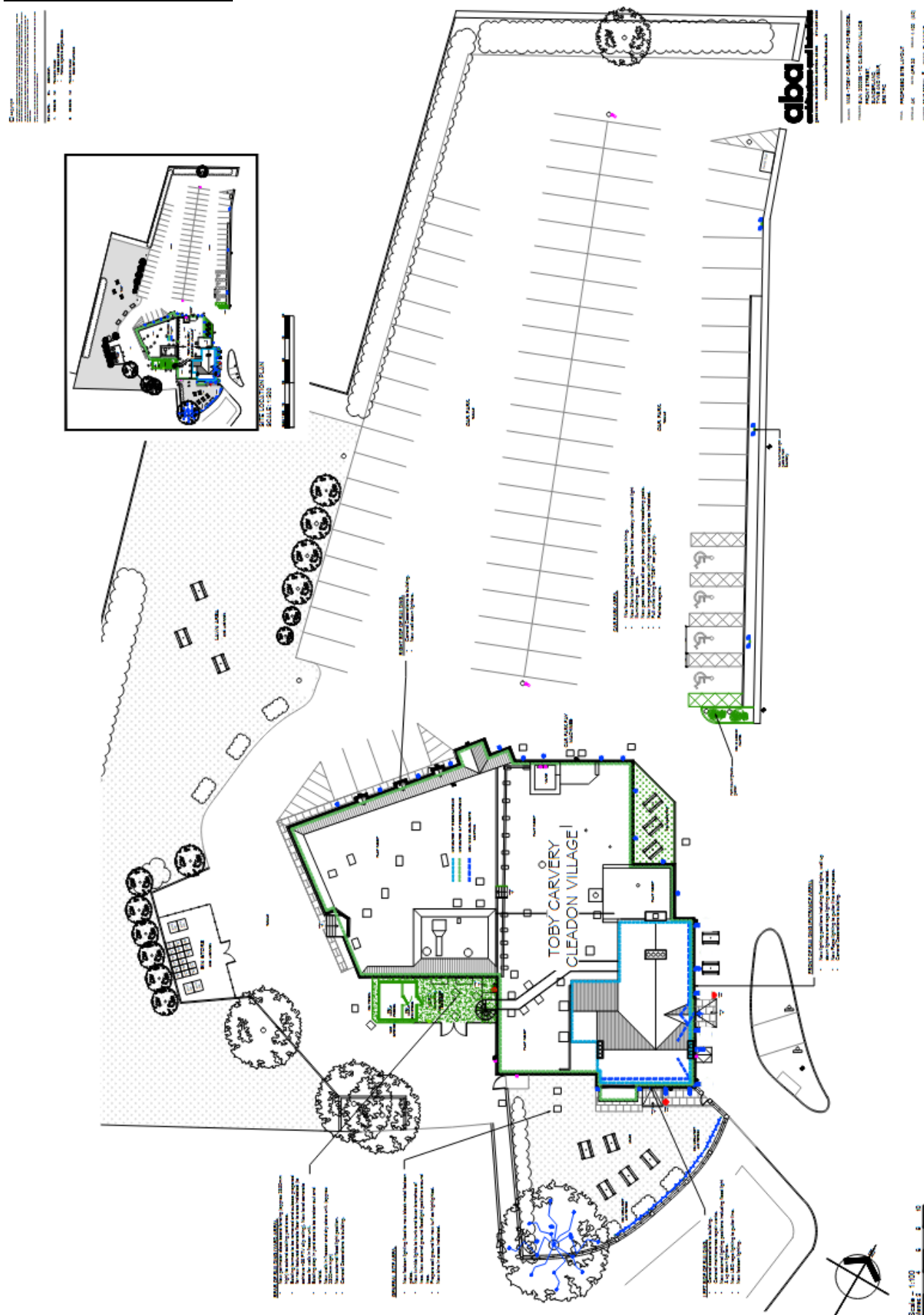
Appendix C: Artificial Light and Bats

Appendix D: Photographic Records

Appendix E: The Annual Bat Year (BCT)

Appendix F: Legislation

Appendix A: Site Plans



Appendix B: The Ecological Data Tables

Bats	
Common Name	Latin Name
Bat	Chiroptera
Bat	Vespertilionidae
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>
Myotis Bat species	<i>Myotis</i> sp.
Nathusius's Pipistrelle	<i>Pipistrellus nathusii</i>
Noctule	<i>Nyctalus noctula</i>
Pipistrelle Bat species	<i>Pipistrellus</i> sp.
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</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 of the netting covering the internal sloping roof to the north of **B1**.



Plate 2: Image of the flat roof and sloping roof at the north of **B1**.



Plate 3: Image of the gaps under the ridge tiles in the southern elevation of the roof.



Plate 4: Image showing the vent present on the southern elevation of **B1**.



Plate 5: Image showing the internal roof space within **B1** including cobwebs.



Plate 6: Image showing the gaps in the internal roof of **B1**.



Plate 7: Image of the stored items within the roof void of **B1**.



Plate 8: Image of the gaps in the internal tiles in **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
- Conservation of Habitats and Species Regulations 2017
- 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.

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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.