



## Preliminary Bat Roost Assessment & Emergence Survey

**16 Darkwood Crescent, Chatburn, BB7 4AL**

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## Summary

This report presents the results of a daylight and nocturnal bat survey, undertaken on 23<sup>rd</sup> June 2020, for a residential property at 16 Darkwood Crescent, Chatburn, BB7 4AL

The work has been commissioned in connection with a proposed planning application for a two-storey extension to the northwest gable of the building.

The scope of the survey has primarily considered roosting and/or hibernating bats, breeding birds and Barn owl.

In summary, the survey outcome has given no evidence of roosting bats, but has identified that there are features of potential habitat value for crevice-dwelling bats such as pipistrelles and myotis species, which indicates that precautionary measures will be necessary. Similarly, although there is no evidence of nesting birds, there is scope for future colonisation and minor precautions will be required. However, there is no evidence of barn owls being present on the Site.

**Recommendations - This is work you will need to commission (if any) to obtain planning permission or comply with legislation for other consent.**

| Recommendations  |
|--|
| <ul style="list-style-type: none"><li>• Precautionary approach to commencement of building works (see 4.2 Impacts on Bats)</li><li>• Environmental enhancement (see 4.3 Enhancement)</li></ul> |

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## **1.0 Introduction and Context**

### **1.1 Background**

The existing property is a semi-detached residential dwelling, with driveway and garden area to the side and rear.

A proposed planning application entails construction of a two-storey extension to the northern gable-end of the property.

The proposed site plan is included in Appendix 2 (where available).

Hereafter within this report, the land encompassed by the red-line boundary of the planning application is termed '**the Site**' or '**the Application Site**'.

### **1.2 Site Context**

A potential bat roosting and emergence survey has been deemed necessary due to the nature of the proposed works and location of the site. In addition, the presence or absence of Barn owl and nesting birds has been taken into consideration, along with other local wildlife.

### **1.3 Scope of the report**

This report provides a description of all features suitable for roosting bats, and evaluates those features in the context of the site and wider environment. It further documents any physical evidence collected or recorded during the site survey that establishes the presence of roosting bats. It provides information on constraints to the proposals as a result of roosting bats, and summarises the requirements for any further surveys, to inform subsequent mitigation proposals, achieve Planning or other statutory consent, and to comply with current wildlife legislation.

The aim of the assessment was to determine the presence or evaluate the likelihood of the presence of roosting bats, and to gain an understanding of how they could use the site. Due to the transient nature of bats, this report is not able to definitively ascertain the absence of bats, rather the absence of *evidence* of use by bats either prior to or at the time of the survey.

To achieve this, the following steps have been taken:

- A desk study has been carried out, including information from local wildlife groups, MAGIC and NBN Atlas websites.
- A field survey has been undertaken, including an external survey and internal inspection where possible.
- An outline of likely impacts on any known roosts has been provided, based on current development proposals
- A nocturnal bat activity survey has been carried out to determine the presence of roosting bats.
- Recommendations for further survey and assessment have been made, along with advice on European Protected Species Mitigation Licensing if appropriate

A survey plan is presented in Appendix 1, the proposed Project Plan is included in Appendix 2 (where available), desk study results are provided in the Appendix 3 and a summary of relevant legislation can be found in Appendix 4.

The assessment is informed by the Bat Conservation Trust publication *Bat Surveys for Professional Ecologists – Good Practice Guidelines* (Collins, J. (Ed) 2016).

## **2.0 Methodology**

### **2.1 Desk Study methodology**

Prior to attending the Site, desk and internet-based resources were used to obtain background information about known bat records and activity in an approx. 2km surrounding radius.

The resources used for the desk study were as follows:

- Google Earth 8 (<http://earth.google.co.uk>) for aerial photographs
- Multi-Agency Geographic Information for the Countryside (MAGIC) collaborative database website (<http://magic.defra.gov.uk/MagicMap.aspx>), for information on statutory designations.
- National Biodiversity Network (NBN) Gateway ([www.nbn.org.uk](http://www.nbn.org.uk)), for collated low-resolution records of protected and priority species occurrence.
- Bing Maps ([www.bing.com/maps](http://www.bing.com/maps)) for a 1:25,000 Ordnance Survey map extract.
- Local bat care group for local knowledge on known roosts.

### **2.2 Site Survey methodology**

All features that will be impacted by the project proposals were assessed for their bat roosting and/or commuting habitat. The surveyor systematically surveyed all features suitable for-bats and signs of bat activity.

#### For any surveyed buildings:

A non-intrusive visual appraisal from the ground using binoculars, inspecting the external features of the building(s) for potential access/egress points, and for signs of bat use. The surveyor paid particular attention to the floor and flat surfaces, window shutters and frames, lintels above doors and windows.

### **2.3 Breeding birds and other incidental observations**

The surveyor also made note of any other ecological constraints observed during the survey, notably the likelihood of presence or signs of breeding birds, and the suitability of the site for barn owls *Tyto alba*.

### **2.4 Suitability Assessment**

All affected survey features on site were categorised according to the likelihood of bats being present, in line with best practice guidelines (Collins, J. (ed) 2016). The features that dictate the likelihood of roosting bats are summarised in Tables 1 and 2 below. Roost suitability is classified as high, moderate, low and negligible and dictates any further surveys required before works can proceed.

Table 1: Features of a building that are correlated with use by bats

| Likelihood of bats being present | Feature of building and its context  |
|----------------------------------|--|
| Higher                           | <p>Buildings/structures with features of particular significance for roosting bats e.g. mines, caves, tunnels, icehouses and cellars.</p> <p>Habitat on site and surrounding landscape of high quality for foraging bats e.g. broadleaved woodland, tree-lined watercourses and grazed parkland.</p> <p>Site is connected with the wider landscape by strong linear features that would be used by commuting bats e.g. river and or stream valleys and hedgerows.</p> <p>Site is proximate to known or likely roosts (based on historical data).</p> |
| Lower                            | <p>A small number of possible roost sites/features, used sporadically by more widespread species.</p> <p>Habitat suitable for foraging in close proximity, but isolated in the landscape. Or an isolated site not connected by prominent linear features.</p> <p>Few features suitable for roosting, minor foraging or commuting.</p>  |

### 2.5 Limitations – evaluation of the methodology

It should be noted that whilst every effort has been made to describe the features on site in the context of their suitability for roosting bats, this does not provide a complete characterisation of the site. This survey provides a preliminary view of the likelihood of bats being present. This is based on suitability of the habitats on the site and in the local area, the ecology and biology of bats as currently understood, and the known distribution of bats as recovered during the desk study.

- **The internal building inspection was not possible, due to current Covid-19 pandemic restrictions. This report is therefore based on external survey results only.**

### 2.6 Emergence Survey Methodology

The surveys involved surveyors positioned around the buildings ensuring that all elevations and roof sections could be clearly observed. Particular attention was paid to the areas of the building identified as providing suitable access points to bat roosts. The location of each surveyor during the emergence survey is shown in Appendix 1. Each surveyor was assigned an area of the building to observe for the duration of the survey. Surveyors used Batbox Duet, Peersonic RPA3 (with full spectrum recording) bat detectors, and an Echo Meter Touch 2 pro detector connected to an iPad. Bat echolocation calls recorded during the surveys were analysed using Wildlife Acoustics sound analysis software Kaleidoscope V3.1.7. That is, the Echo Meter Touch includes an Auto ID bat species, however this is not 100% accurate and further post-survey sound analysis is often required to confirm species misidentified by the Auto ID software during the survey. Surveyors also used survey record sheets, pens/pencils, head torches for recording all activity observed during the surveys including foraging and commuting behaviour as well as emergence/re-entries by

bats. All surveyors had hand held radios for communication between surveyors, to assist with confirming obscure bat activity e.g. a bat emergence or a bat passing over the building.

In accordance with the latest bat survey guidelines (Collins, J. 2016) dusk emergence surveys commenced 15 minutes before sunset and continued for 1½ - 2 hours after sunset depending upon bat activity and surveyor visibility.

Surveys were completed during optimal weather conditions i.e. when temperatures were above 8°C, with no rain or strong winds, as these environmental variables can impact upon bat emergence and foraging behaviour.

The survey was conducted within the optimal bat activity period (mid-May to mid-September).

### **3.0 Results and Evaluation**

#### **3.1 Location**

The site is located at National Grid Reference SD 76508 44312.

#### **3.2 Designated sites**

The Site is located within 2km of the Forest of Bowland AONB boundary, and the Clitheroe Knoll Reef & quarry Sites of Special Scientific Interest (SSSI).

The proposed works are not significant enough to have an impact on any nearby designated areas.

#### **3.3 Landscape**

A review of the designated sites, aerial photographs (Figure 1), the Magic database and OS maps has been undertaken. Collated together, the site's local bat habitat is described as:

The Site is on the outskirts of Chatburn, set in a rural landscape. The property backs onto open fields with hedge boundaries, woodland and a limestone quarry beyond; all important bat foraging habitat. There are small, scattered woodland copses, tree lines and hedgerows all around the area, with the potential for use by foraging and commuting bats.

#### **Priority habitats:**

Ancient woodland is located within 1km of the Site, in addition to large areas of native deciduous woodland within 150m to the south.

Full details are included in Appendix 4.





Figure 1: Aerial photo of site, showing landscape structure (Google Earth, 2020)



Figure 2: OS location map (Bing, 2020)

### 3.4 Historical records

The NBN & MAGIC records of a 2km site radius show that there are roosts of common crevice dwelling and void dwelling bat species present within the study area, including maternity roosts of common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*. In addition there are frequent records of the presence of myotis species: whiskered, Brandts and Daubentons bat, noctule bat *Nyctalus noctule*, and Brown long eared bat *Plecotus auratus*.

A search of the magic database shows five sites that have been granted European Protected Species Mitigation Licences (EPSMLs) to destroy a breeding place for bats within a 2km radius within the 2km survey area.

These results indicate that there are frequent numbers of multiple species of bat in the vicinity of the Site, indicating it is an area of important foraging and breeding habitat for the bat population in this locality.

### 3.5 Field Survey Results

#### Personnel:

- Carol Edmondson (Natural England bat licence number: 2015-12195 CLS-CLS), principle ecologist with 7 years survey experience.
- Catherine Wood (Natural England Bat Licence Number: 2015-11257-CLS-CLS) with 10+ years survey experience and East Lancashire bat care co-ordinator.

Table 2: Environmental variables during the survey

| Date: 23/06/2020 | Start – 20:30 | Finish – 23:20 |
|------------------|---------------|----------------|
| Temperature      | 21°C          | 19°C           |
| Humidity         | 60            | 70%            |
| Cloud Cover      | 0%            | 0%             |
| Wind             | 0.1km/h       | 0              |
| Rain             | 0             | 0              |

### 3.6 Site Feature descriptions and photos

The location of the survey building is illustrated below at figure 3 and in the map in Appendix 1.



Fig. 3: Aerial view of the Site (marked at ☆) showing building layout and immediate landscape

#### Building Description

The property is a two-storey semi-detached house that is pebble dash rendered on all elevations. The roof is comprised of cement tiles with the ridge running from southeast to northwest. Windows and doors are uPVC framed and tight fitting. The brick chimney has leadwork to the base. The uPVC soffits are well sealed, with no visible gaps behind the guttering on the building.



Photo 1: East facing elevation of the survey building.



There is a single-storey flat roofed extension on the northwest gable end, with uPVC door and window.

The soffits and guttering were close fitting with no visible gaps.



Photo 2: Single-storey extension to the gable end.

**Potential bat roosting features:**

There was a gap in the lintel above the ground floor window to the south of the front door.



Photo 3: Gap along the lintel above the ground floor window

There was missing mortar to the end of the ridge tile on the gable end, possibly allowing access to the air gap along the ridge for bats.



Photo 4: The gable end ridge tile with mortar gap at the uppermost point.

The majority of the roof tiles were heavily moss covered. Gaps were observed under a raised tile on the west facing roof pitch (arrow shows position) and above a dropped tile on the Southwestern edge

All of the gaps referred to above are known to be utilised by crevice dwelling bat species such as pipistrelles and myotis species.



Photo 5: Southwest corner of west elevation – lifted or dropped tiles with gaps.

### ***Evidence of bats***

No evidence of roosting bats was located externally on the property during the daylight survey. The weather in the few days immediately prior to the survey had been still and warm, with no rainfall. Items were stacked against and close to the building that appeared to have been in situ for some time, and no evidence of recent cleaning was found. There was a single old bat dropping found on a car on the front drive, The car appeared not to have been used recently.

### ***Breeding birds and other incidental observations***

There was no evidence of breeding birds within the property boundary. The trees and shrubs on neighbouring properties offer suitable nesting habitats for garden birds.

## **3.7 Emergence survey results**

### ***Summary:***

The emergence survey recorded moderate numbers of common pipistrelle, soprano pipistrelle, *myotis* (e.g whiskered or Brandt's) species and noctule bat species. There bat activity to the west and southwest of the site and commuting along the old hedge-line to the rear of the property. No bats were seen emerging or re-entering from the building.

The weather conditions were good throughout the survey and there were no survey constraints. A summary of the results is presented as follows:-

*Table 3: Survey results – Dusk Emergence Survey*

|                               |   |
|-------------------------------|---|
| <b>Date</b>                   | 23/06/2020  |
| <b>Start and End Times</b>    | 21:30 - 23:15<br>Sunset: 21:45  |
| <b>Surveyor (position)</b>    | <b>Carol Edmondson</b> - Natural England Bat Licence Number: 2015-12195 CLS-CLS (Position 1 - observing the north and east elevations)  |
| <b>As shown in Appendix 1</b> | <b>Catherine Wood</b> - Natural England Bat Licence Number: 2015-11257-CLS-CLS (Position 2 – observing the north and west elevations)   |
| <b>Surveyor Position</b>      | <b>Notes/observations:</b>  |
| 1                             | Common pipistrelle foraging at 22:10 (not seen).<br>Noctule passing at 22:22, 22:31, 22:54, 23:08 (not seen)<br>Constant foraging and pass activity by both common and soprano pipistrelle bats along the gable end hedge separating no.16 & 17 22:34 – survey end<br>Social calls also recorded  |
| 2                             | Common pipistrelle flying north from the trees at south of Site at 22:10 (marked A at App.1), and again in opposite direction at 22:28 (B).<br>Pipistrelle species flying east across the site at 22:29<br>Noctule distant passing at 22:31, 23:07 (not seen)<br>Frequent pass and forage activity by common and soprano pipistrelle bats, plus myotis species (e.g whiskered or Brandts) 22:36 – survey end (as marked on survey map at App.1)   |
| Notes:                        | <ul style="list-style-type: none"> <li>No emergence was recorded.</li> <li>Early during the survey, Common pipistrelle bats and later myotis species appear to fly into the Site from the west / north west suggesting that the Site is situated along a commuting and early feeding route for a nearby colony of common pipistrelle bats and myotis bats. The flight path also appeared to follow the line of a hedgerow, which has been removed along the northern boundary of the Site.</li> </ul> |

#### 4.0 Conclusions, Impacts and Recommendations

##### 4.1 Legislation

All UK bat species are provided full legal protection under Schedule 5 (section 9) of the Wildlife and Countryside Act 1981 (as amended) and under The Conservation of Habitats and Species Regulations 2010, making them European Protected Species. In combination this legislation makes it illegal to intentionally kill, injure, harm or disturb bats and illegal to damage, disturb or obstruct access to bat roosts. **Full details of legislation are listed at Appendix 4.**

#### 4.2 Impacts on bats/recommendations

Although there is currently no evidence of roosting bats, habitat value has been identified in association with certain features. There remains a low risk that the proposed work could have a negative impact if bats colonise the features of interest, hence the following precautions are required:

- If more than 12 months passes before commencement of work then an additional nocturnal bat survey should be undertaken, between May and August inclusive.
- Additionally, at the outset of invasive work, all workers are to be briefed about the potential for encountering bats and all are to be shown photographs of a Common pipistrelle bat (the species most likely to be encountered) and an accumulation of bat droppings, as presented below.
- For any aspect of the work entailing removal and re-laying of ridge tiles, slates and gutters, the features are to be lifted or prized off cleanly instead of dragged, so that no bats are crushed during the process. Gaps underneath or behind the features are to be checked for the presence of bats.
- If a bat is discovered, work is to temporarily cease whilst the bat is captured and an experienced bat ecologist is contacted for guidance and assistance. This can be the consultant who undertook the initial survey (Ark Ecology: 07775 793283), any other licensed bat worker, or the Bat Conservation Trust (BCT) helpline (0345 1300 228).
- If it is necessary to capture a bat to remove it to safety, this should be undertaken with gloves or a light cloth, capturing the bat and containing it whilst the advice of the bat worker is sought. Thereafter, following the on-site advice of the bat worker will ensure there is no breach of the legislative protection afforded to roosting bats.
- Outdoor lighting is typically a deterrent to wildlife so any future installation of outdoor lighting should be screened, hooded or positioned low at bollard level so that it does not illuminate roofs, upper walls or nearby trees and shrubs. This will permit bats, birds and other wildlife to use the habitats in safety. To avoid disrupting the foraging and commuting habitat, any outside lighting to the rear/side of the property to be kept to low level, and not pointing upwards. Further guidelines to bats and lighting can be found at:

[http://www.bats.org.uk/pages/bats\\_and\\_lighting.html](http://www.bats.org.uk/pages/bats_and_lighting.html)



Fully grown Common pipistrelle bat



Pipistrelle bat droppings, which look like mouse droppings, but crumble to dust when squashed between the fingers (comprising tiny, glistening bits of insect wings etc.)

### 4.3 Enhancement

The Local Planning Authority has a duty to ask for enhancements under the NPPF and circular 06/2005: Biodiversity and Geological Conservation. Para.99.

#### Opportunities for inclusion of roost features:

There are many means of creating roost habitat features when constructing new buildings. The inclusion of bat roost features is compliant with building regulations and does not increase the construction cost. Furthermore, since bats do not create nests, do not chew materials and only reproduce at a very slow rate they do not present any risk of conflict with future residents: most householders with bat roosts are unaware of the presence of the bats.

#### Bat boxes

The installation of a bat box during construction or once the works have been completed will add additional roosting opportunity for bats in the local landscape.

Boxes suitable for crevice dwelling bats:

<https://www.greenwoodsecohabitats.co.uk/>

<http://www.habibat.co.uk/category/bat-boxes/habibat-017-external-access-box>

#### Environment

The flight path of the bats recorded followed the line of a former hedgerow. Hedge planting could be re-instated along the fence line to add habitat enhancement on the boundary. The Woodland trust offer subsidised hedge packs for joining existing hedgerows: <https://shop.woodlandtrust.org.uk/hedge-starter-pack>

Where possible, it is recommended that new planting favours a mixture of trees, shrubs and herbs that produce flowers and berries or fruits, plus night-scented plants. These can provide shelter and food for a wide array of wildlife, including insects, birds and bats. An array of suitable trees, shrubs and plants is available, but some suggestions are listed below:

**Trees:** Rowan (*Sorbus cuparia*), Apple (*Malus sp.*), Plum (*Prunus sp.*), Field maple (*Acer campestre*), Common whitebeam (*Sorbus aria*).

**Shrubs:** Holly (*Ilex aquifolium*), Hazel (*Corylus avellana*), Forcythia sp., Lilac (*Syringa vulgaris*), Butterfly bush (*Buddleja davidii*).

**Climbers:** Honeysuckle (*Lonicera periclymenum*), Clematis sp., Climbing roses (*Rosa sp.*), Wisteria floribunda.

**Night-scented:** White jasmine (*Jasminum officinale*), Tobacco plant (*Nicotiana sylvestris / alata*), Night-scented stock (*Matthiol abicornis / oxyceras*).



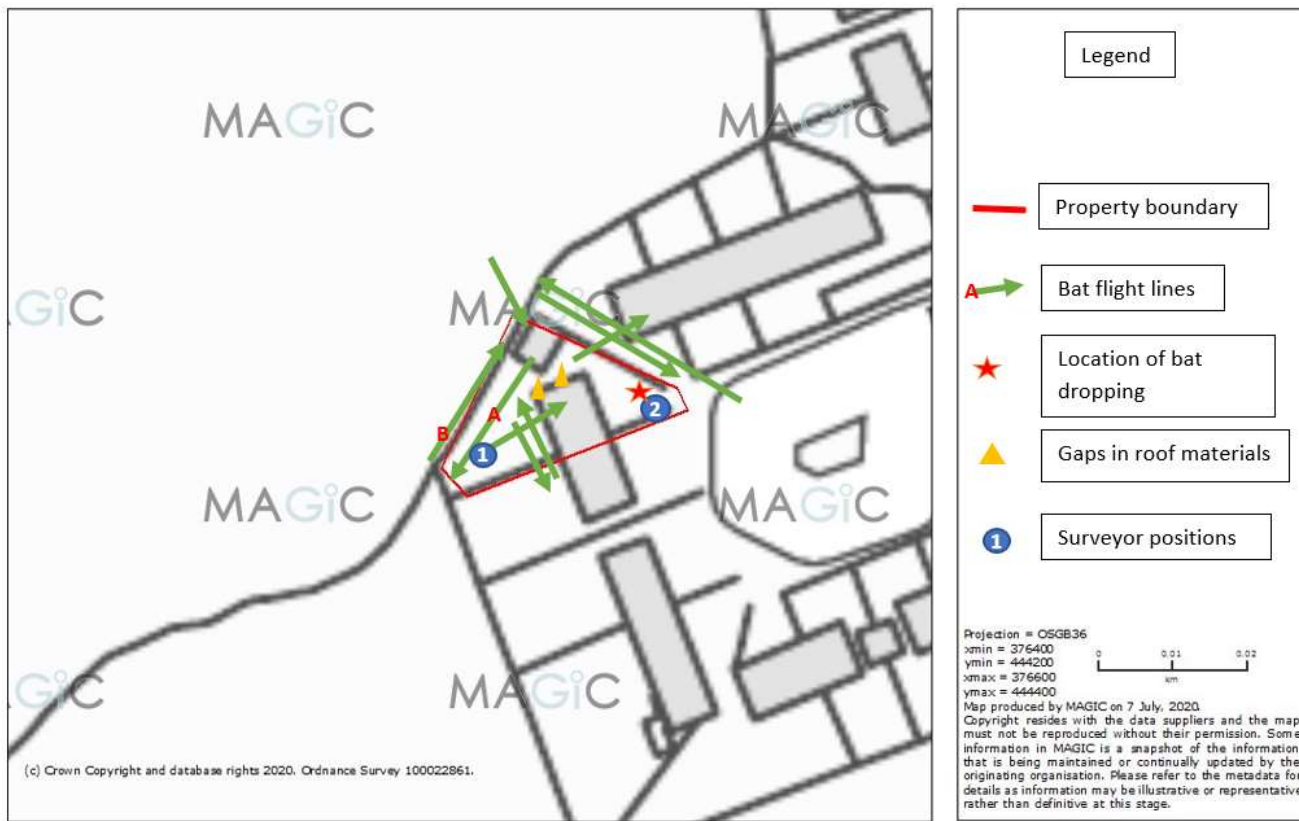
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Appendix 1: Survey Plan

MAGiC

Survey map

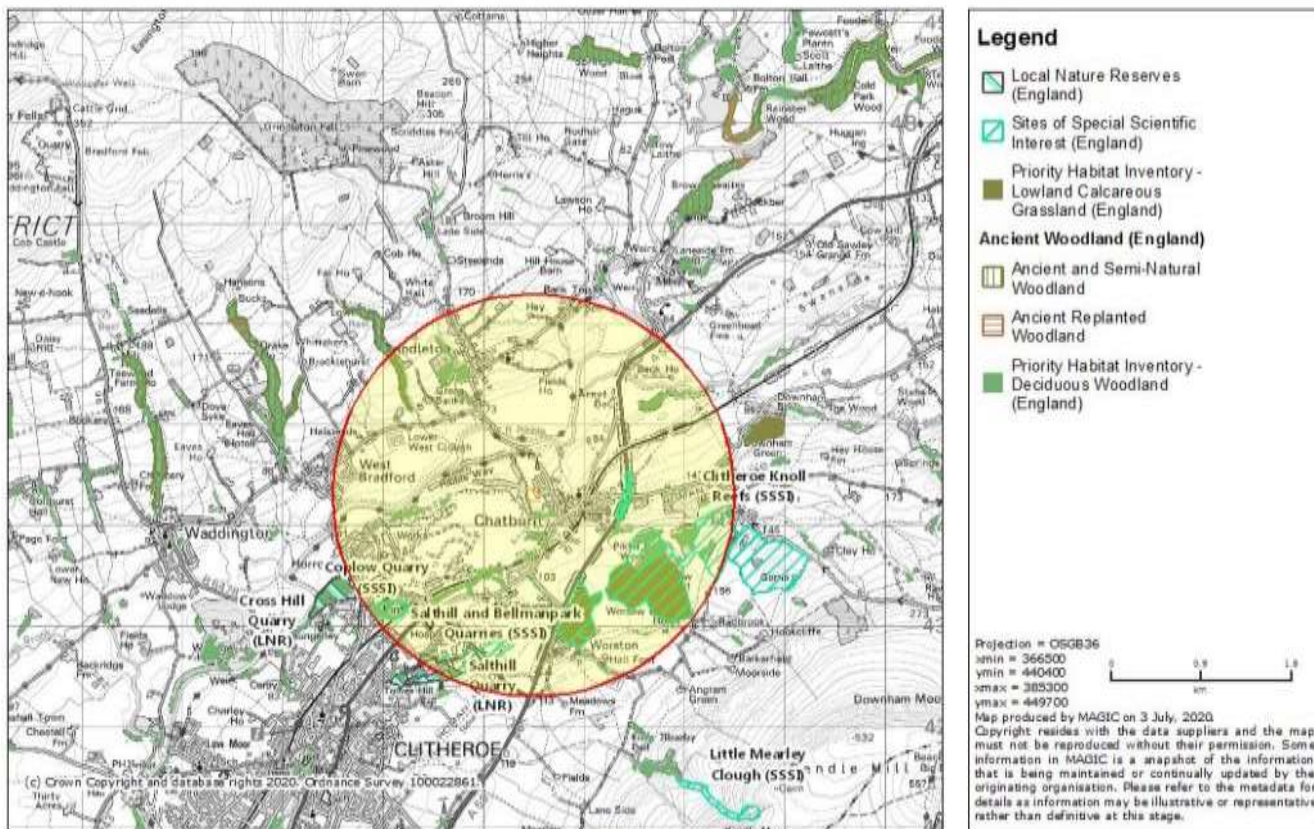


Appendix 2: Proposed Site Plan

None provided

**Appendix 3: Desk Study Information**  
 Full historical records can be provided on request.

**MAGiC Priority habitats and designated areas**



## Appendix 4: Legislation and Planning Policy related to bats

### LEGAL PROTECTION

All species of bat are fully protected under The Conservation of Habitats and Species Regulations 2010 (as amended) through their inclusion on Schedule 2.

Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species (e.g. all bats)
- Deliberate disturbance of bat species as:
  - a) to impair their ability:
    - (i) to survive, breed, or reproduce, or to rear or nurture young
    - (ii) to hibernate or migrate
  - b) to affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Bats are also protected under the Wildlife and Countryside Act 1981 (as amended) through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale

### Effect on development works:

A European Protected Species Mitigation (EPSM) Licence issued by the relevant statutory authority (e.g. Natural England) will be required for works likely to affect a bat roost or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficiency/success to be monitored.

The legislation may also be interpreted such that, in certain circumstances, important foraging areas and/or commuting routes can be regarded as being afforded *de facto* protection, for example, where it can be proven that the continued usage of such areas is crucial to maintaining the integrity and long-term viability of a bat roost (Garland & Markham, 2008).

### **NATIONAL PLANNING POLICY (ENGLAND)**

#### ***National Planning Policy Framework***

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 UK Biodiversity Action Plan priority species) 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; opportunities to incorporate biodiversity in and around developments are encouraged; 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.

### ***The Natural Environment and Rural Communities Act 2006 and the Biodiversity Duty***

Section 40 of the Natural Environment and Rural Communities (NERC) Act, 2006, requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

Section 41 of the Act (Section 42 in Wales) requires the Secretary of State to publish a list of habitats and species which are of 'principal importance for the conservation of biodiversity.' This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.