



Bat Survey – Potential Roost Assessment Building Inspection (PRA),

Plus Emergence and Activity Survey

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Summary

Ark Ecology undertook a building inspection on the 10th May 2019 at the garage buildings on Thorn St Clitheroe, BB7 1DN followed by a bat emergence survey on the 23rd May (dusk), 2019. The aim of the assessment was to consider the value and suitability of the structures for roosting bats, characterise any bat roosts and to determine the current state of use by bats or presence of bats on all survey features. This includes providing evidence for species, numbers and levels of activity, to identify any entrance and egress points, and to gain an understanding of the activity of bats using the site in the local landscape.

The report is required to accompany a planning application for the proposed alterations to the buildings, and to provide further car parking on the site.

The surveys undertaken to date following current guidelines in and around B1 & B2 provide sufficient information to conclude that these buildings are **not currently being used by bats.**

Recommendations

Survey feature	Recommendation
B1 & B2	Works to be commenced within the bat activity season May to October and in weather conditions suitable for bat activity (to avoid encountering hibernating bats). Lighting will be controlled across the developed site. Low impact lighting strategies will be adopted from the guidance outlined in the Bat Conservation Trust “Bats and Lighting” publications: http://www.bats.org.uk/pages/bats_and_lighting.html The lighting on the site will: Use narrow spectrum light sources to lower the range of species affected by lighting Use light sources that emit minimal ultra-violet light Avoid white and blue wavelengths of the light spectrum to reduce insect attraction. Where white light sources are required, to manage the blue short wavelength content, they should be of a warm / neutral colour temperature <4,200 kelvin. Not use bare bulbs and any light pointing upwards. The spread of light will be kept in line with or below the horizontal. If bats are found during any stage of the development, work should stop immediately and a suitably qualified ecologist should be contacted to seek further advice.

For full justification of these recommendations, please go straight to section [4.0 Conclusions, Impacts and Recommendations](#). Otherwise, the full report starts below.

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1.0 Introduction and Context

1.1 Background

Ark Ecology was commissioned by Mr Peter Bryan to undertake a bat roost survey at the garage buildings on Thorn St Clitheroe, BB7 1DN. The assessment is informed by the Bat Conservation Trust publication *Bat Surveys for Professional Ecologists – Good Practice Guidelines* (Collins, J. (Ed) 2016).

This survey was completed to support a planning application for alterations to two buildings on the site. No other previous reports have been prepared for the site by Ark Ecology.

An external and internal assessment of the building was completed prior to the first emergence survey on 10/05/2019. No bat droppings or other evidence of bats was recorded. Several potential emergence points were identified in the roof of the buildings, together with potential roosting places within.

1.2 Site Context

The site is located at National Grid Reference SD 73832 41553, There are two buildings within the site boundary which were subject to survey as these will be affected by the proposed development. These are marked as B1 & B2 on the survey plan at Appendix 1.

1.3 Scope of the report

This report provides a description of all features suitable for roosting bats, 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 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.

This report also provides a description of the bat activity observed and recorded during each survey. The aim of the assessment was to characterise any roosts present including species, numbers and access points, roosting locations, timing of use and type of roost, and to gain an understanding of how bats use the site.

Robust data has been collected, following good practice guidelines, to inform an assessment of the potential impacts of the proposed development on bats, and inform mitigation and enhancement. This report provides information on constraints to the proposals due to roosting bats, summarises any mitigation required to achieve planning permission and statutory consent to comply with wildlife legislation.

To achieve the aims of the assessment, the following steps have been taken:

- A desk study has been carried out, including information from MAGIC and NBN Atlas websites.
- A field survey has been undertaken, including a daylight internal/external survey and dusk emergence survey.
- An outline of likely impacts on any known roosts has been provided, based on current development proposals.
- 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 showing the location of any potential roosting features, the location of each surveyor and the bat activity observed and recorded during each survey. 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.

2.0 Methodology

2.1 Desk Study methodology

A review of the following information sources has also been undertaken to inform the assessment:

- Landscape structure using aerial images from Google Earth and OS maps
- Designated sites, habitat and granted EPSL records held on Magic.gov.uk.

2.2 Daylight Survey methodology

The survey was undertaken by Carol Edmondson (Natural England bat licence number: **2015-12195** CLS-CLS) on 10/05/2019.

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.

The survey methods followed English Nature Bat Mitigation Guidelines (English Nature, 2004) and Bat Conservation Trust Best Practice Guidelines (*J. Collins, 2016*), therefore, considerations were:

- The availability of access to roosts for bats;
- The presence and suitability of cracks, crevices, tiles, soffits, hollows, ivy growth and other places as roosts;

- Signs of bat *activity or presence*, such as; bats themselves, droppings, bat grease marks, bat scratch marks, bat urine spatter and bat prey remains.
- 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. An internal inspection of the building was also made, including the living areas of derelict or abandoned buildings and the accessible roof spaces of all buildings, using an endoscope, torch and ladders. The surveyor paid particular attention to the floor and flat surfaces, window shutters and frames, lintels above doors and windows, and carried out a detailed search of numerous features within the roof space.

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 Table 1 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	Buildings/structures with features of particular significance for roosting bats e.g. mines, caves, tunnels, icehouses and cellars. Habitat on site and surrounding landscape of high quality for foraging bats e.g. broadleaved woodland, tree-lined watercourses and grazed parkland. 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. Site is proximate to known or likely roosts (based on historical data).
Lower	A small number of possible roost sites/features, used sporadically by more widespread species. Habitat suitable for foraging in close proximity, but isolated in the landscape. Or an isolated site not connected by prominent linear features. Few features suitable for roosting, minor foraging or commuting.

2.3 Emergence Survey methodology

The Preliminary Roost Assessment Survey identified the building as having low potential for bats and therefore one further emergence survey was carried out in line with best practice guidelines:

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 buildings identified as providing suitable access points to bat roosts. The location of each surveyor during each 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 hours after sunset.

Surveys were completed during optimal weather conditions i.e. when temperatures were above 10°C, with no rain or strong winds, as these environmental variables can impact upon bat emergence and foraging behaviour.

2.4 Surveyors

The lead surveyor was Carol Edmondson (Natural England bat licence number: 2015-12195 CLS-CLS) and was assisted by three other surveyors, all with a minimum 5 years of bat survey experience. Four surveyors were used to provide sufficient cover of the building. The designated position of each surveyor during each survey is detailed in the tables in Section 3.4 below, and shown on the plan in Appendix 1.

2.5 Survey Timings and Weather Conditions

The dates and times of each survey are presented in Table 2, along with sunset/sunrise times as applicable and the weather conditions at the start and end of each survey.

Table 2: Survey schedule and weather conditions

Reference	Survey date	Survey Start and End Times	Weather Conditions Start	Weather Conditions END
		Sunset/sunrise time		
B1 & B2 building inspection	10/05/2019	10 am – 12.30pm	Temp: 12°C, light wind 50% cloud	Temp: 12°C, light wind 50% cloud

B1 & B2 emergence survey	23/05/2019	21.00 - 23:00 Sunset: 21:23	Temp: 11°C Cloud Cover: 25% Wind: 1 Rain: None	Temp: 11°C Cloud Cover: 25% Wind: 1 Rain: None
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2.6 Limitations – evaluation of the methodology

These surveys follow best practice guidance to confirm presence of roosting bats and where present characterise the roost. However, this information is collected at finite dates and times, and provides an indication of the conditions on site at that time only. Due to the transient nature of bats, the use of the building, and the site as a whole, by bats at all times cannot be established based on this information.

Whilst these surveys are used to determine presence of bats, they do not prove absence.

There were no specific limitations to the survey.

3.0 Survey results, conclusions & recommendations

3.1 Desk study results

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 below:

The site is in a residential area close to Clitheroe town centre. The immediate landscape is dominated by terraced housing and retail outlets. The railways lines and park surrounding the castle are located less than 150m to the east, which could be used for foraging and commuting. The River Ribble runs from 1000m north at Brungerly Park and local nature reserve to 200m to the west and will likely be an important local habitat for bats. Open pasture extends to the north, with associated hedgerows and scattered woodland copses, also suitable foraging habitat for bats.

One granted European Protected Species Mitigation Licence has been granted within the 2km survey area. This was for the destruction of a resting place for common pipistrelle *Pipistrellus pipistrellus* bats, granted in 2014.

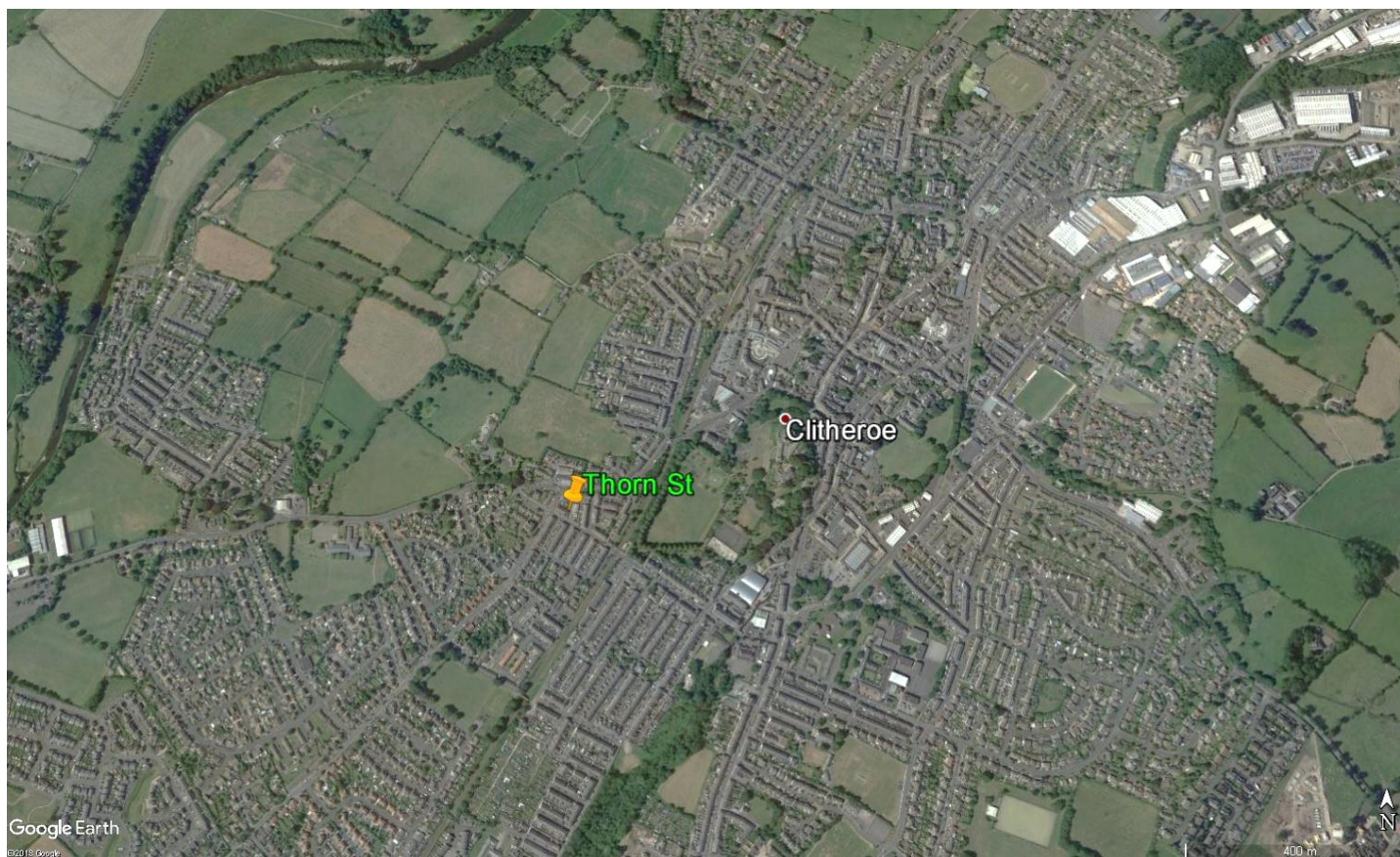


Fig.1: Surrounding landscape of survey location

3.2 Daytime inspection survey (PRA) : Results

Site features, description and photos

B1 Building and features: B1 is an attached brick built and rendered building currently used as a workshop. The roof is a single east facing pitch, covered with slate tiles which are exposed internally (i.e no roof membrane). There are a few raised slates, and gaps to the ridge tiles.



There is a large area of rooflight made of corrugated pvc sheet material, with a mezzanine to part the rear of the internal space. The roof structure is exposed internally with some gaps to the exterior visible. The interior is light and airy.



B2 Building and features:

B2 is a single storey storage building, formed from three cottages. The walls are limestone brick built with a dual pitched slate roof. Windows to the south elevation are uPVC and close fitting. There are rooflights to the south facing roof pitch which have decayed timber frames.

The western section of the roof is bowed, with gaps in the ridge tile mortar, and some raised roof slates.

There are two chimneys, which are in a reasonable state of repair, with no visible gaps to the mortar.

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



Internally the roofing materials are exposed in some areas, but with no visible gaps to the outside.

There are gaps above the door lintels, and to some of the roof lights.



The daylight internal/external inspection (PRA) identified several potential emergence/roosting features in the roof of the building, but no droppings or other evidence of use by bats was found.

No evidence of breeding birds was found in either buildings during the survey

3.3 PRA: Conclusions, Impacts and Recommendations

Informative guidelines

Bats are protected under the Wildlife and Countryside Act and Conservation Regulations; see Appendix 4 for a summary of legislation protecting bats in the UK. Legislation protects all wild birds whilst they are breeding, and prohibits the killing, injuring or taking of any wild bird or their nests and eggs. Certain species of bird, including the barn owl, are subject to special provisions; it is an offence to disturb any bird or their young during the breeding season.

3.3.1 Evaluation

Taking the desk-based assessment and site survey results into account, the following value for roosting bats has been placed on each site survey feature. Appropriate justification for this assessment is provided in Section 3 and Table 1 of this report.

Table 3: Evaluation of buildings on site

Ref	Survey assessment conclusions (with justification)	Foreseen impacts	Recommendations	Enhancements
B1/ B2	These buildings have a low likelihood of supporting roosting bats.	As the proposals include the demolition of this building, any bat roosts present would be destroyed. This could result in death/injury of bats.	One bat emergence/re-entry survey is required during the active bat season (May – September) to confirm presence/likely-absence of bat roosts in the buildings. The survey should be completed during the optimal survey period mid-May to August inclusive. Sub-optimal: early May and September. Four surveyors are required to provide full coverage of both buildings.	The Local Planning Authority has a duty to ask for enhancements under the NPPF and circular 06/2005: Biodiversity and Geological Conservation. Para.99 To be confirmed following further surveys.

			If bat roosts are confirmed in the building two further surveys will be required to inform a European Protected Species Mitigation Licence application to Natural England once planning permission is granted.	
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3.4 Emergence survey results

The emergence survey recorded low numbers of common pipistrelle (*Pipistrellus pipistrellus*) bat species foraging on the periphery of the buildings and commuting over/past the building and in the street to the rear of the cottages. The east and south elevations of the building are occasionally lit by security lighting and the all elevations by streetlights once the light levels drop (around bat emergence time). No bats were seen emerging from the building.

The detailed results of the emergence survey are provided in the tables below.

Table 4: Survey results – Dusk Emergence Survey

Date		23/05/19
Start and End Times		20.55 - 22:50 Sunset: 21:16
Surveyor (position) As shown in Appendix 1		Carol Edmondson - Natural England Bat Licence Number: 2015-12195 CLS-CLS (Position 1 - observing the west facing roof pitch and northwest elevations of B1) Liz Neale - >6yrs experience of conducting these types of surveys (Position 2 - observing the southeast and southwest elevations of B1) Martyn Barnes - >8yrs experience of conducting these types of surveys (Position 3 - observing the north and west elevations of B2) Catherine Wood - Natural England Bat Licence Number: 2015-11257-CLS-CLS (Position 4 – observing the south elevation of B2)
Building Reference	Surveyor Position	Notes/observations:
B1	1	Common pipistrelle commute/foraging at 21:51 Flew north across the roof pitch. Common pipistrelle foraging at 22:00 (not seen).

		Pass by a common pipistrelle flying from west to north at 22:09. Pass by a common pipistrelle flying from east to west and looping back to the west at 22:22. No further activity.
B1	2	Low foraging activity by common pipistrelles between 22.01 – 22.25 to the rear of Henthorn Rd Pass by a common pipistrelle flying south at 22:22 No further activity.
B2	3	Pass by common pipistrelle at 21:51 (not seen). Pass by a common pipistrelle flying east along the alley at eaves height of the building at 21:59,22:07. Pass by a common pipistrelle flying west (opposite of above)at 22:05, 22:09. Unseen foraging pass by common pipistrelle at 22:25 No further activity.
B2	4	Pass by a common pipistrelle from the west, heading north at 21:52. Unseen foraging pass by common pipistrelle at 22:09, 22:22 No further activity.

4.0 Conclusions, Impacts and Recommendations

4.1 Summary

The surveys undertaken to date following current guidelines in and around B1 & B2 provide sufficient information to conclude that these buildings are **not currently being used by bats**

4.2 Evaluation

Taking the desk based assessment and site survey results into account, the following recommendations are reached for each site survey feature.

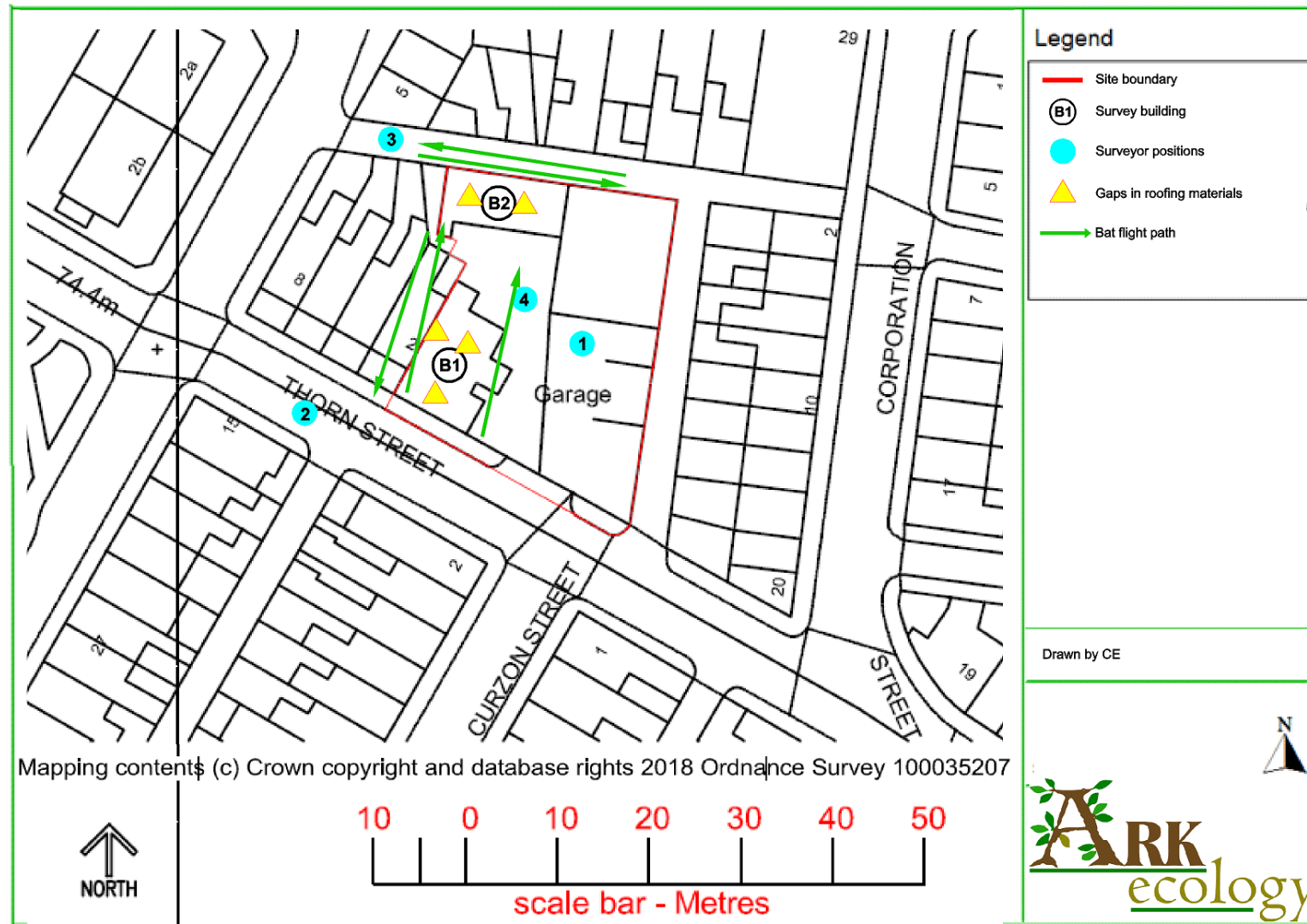
Table 5: Evaluation of buildings/trees on site

Ref	Survey assessment conclusions (Type of bat roost present)	Foreseen impacts	Recommendations / Mitigation	Enhancements The Local Planning Authority has a duty to ask for enhancements under the NPPF and circular 06/2005: Biodiversity and Geological Conservation. Para.99
B1 & B2	No bat roosts confirmed	No bats will be impacted during these works if carried out within the current activity season.	- Works to be commenced within the bat activity season (May to October) and in weather conditions suitable for bat activity (to avoid encountering hibernating bats). - Lighting will be controlled across the developed site. - Low impact lighting strategies will be adopted from the guidance outlined in the Bat Conservation Trust “Bats and Lighting” publications: http://www.bats.org.uk/pages/bats_and_lighting.html The lighting on the site will: - Use narrow spectrum light sources to lower the range of species affected by lighting - Use light sources that emit minimal ultra-violet light - Avoid white and blue wavelengths of the light spectrum to reduce insect attraction and where white light sources are required in order to manage the blue short wave length content they should be of a warm / neutral colour temperature <4,200 kelvin. - Not use bare bulbs and any light pointing upwards. The spread of light will be kept in line with or below the horizontal. If bats are found during any stage of the development, work should stop immediately and a suitably qualified ecologist should be contacted to seek further advice.	Two Bat boxes erected on site prior to commencement of works. These should include one of the following: 2F Schwegler Bat Box 2FN Schwegler Bat Box 1FF Schwegler Bat Timber Kent bat box Sited on the site, in areas not affected by the works, or the adjacent building. Bat boxes should be positioned 3-5m above ground level facing in a south/south-westerly direction with a clear flight path to and from the entrance.

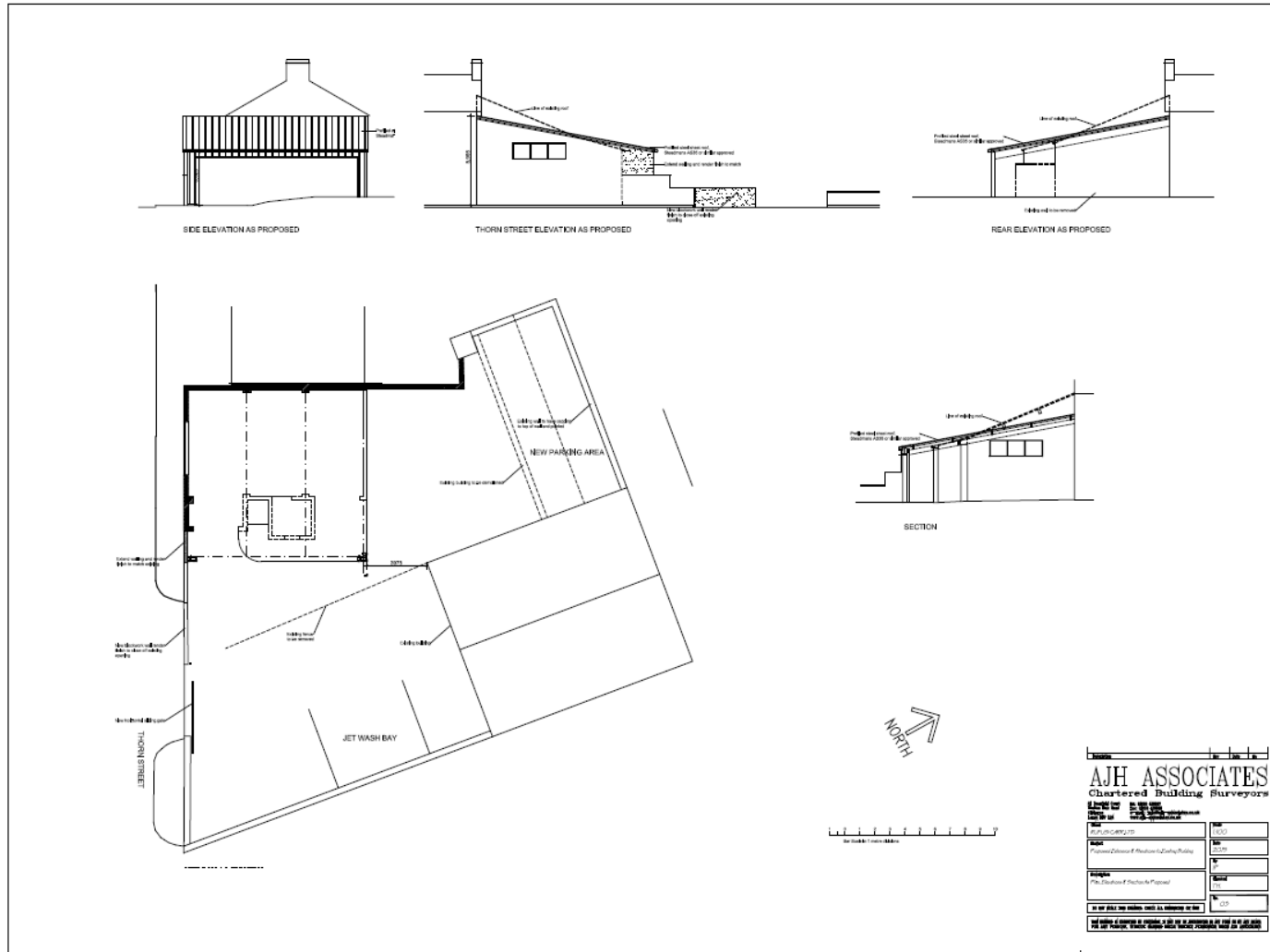
5.0 Bibliography

- Bat Conservation Trust “Bats and Lighting” (2016) http://www.bats.org.uk/pages/bats_and_lighting.html
- Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists — Good Practice Guidelines, 4th edition, Bat Conservation Trust, London.
- Garland & Markham (2008) Is important bat foraging and commuting habitat legally protected?
- Google Earth (2019).
- Magic database (2019) <http://www.magic.gov.uk/MagicMap.aspx>.
- Mitchell-Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature, Peterborough.

Appendix 1: Survey Plan

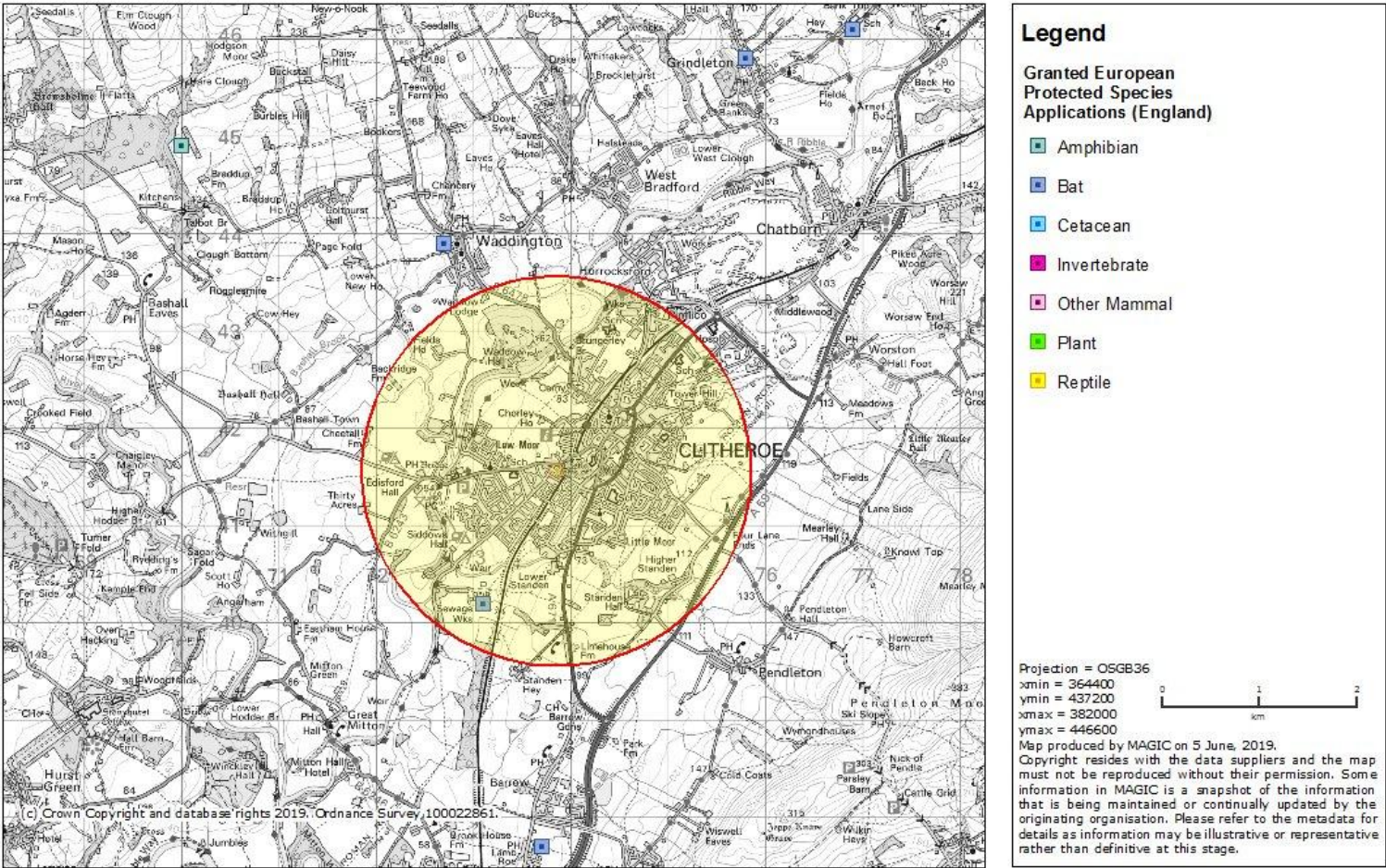


Appendix 2: Proposal plans



Appendix 3: Desk Study Results

MAGiC Granted EPSML's within 2km radius



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.