



Preliminary Roost Assessment Bat Survey

60 Mayfield Avenue, Clitheroe, Lancashire BB7 1LE

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Executive summary

Carol Edmondson of Ark Ecology undertook a Preliminary Roost Assessment at 60 Mayfield Avenue on 7th December 2018. The aim of the assessment was to consider the value and suitability of the structure for roosting bats.

The development proposals are for a two-storey extension, with single-storey lean to. A planning application is being prepared for submission to Ribbles Valley Borough Council.

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

Survey feature	Recommendations
B1	Although there is a low number of potential roosting features (PRF's) in the building, there is a lack of visual or physical evidence of current or historic use by bats. However, taking into account the transient nature of bats, a precautionary approach is advised: • Work will be commenced in April (outside the usual hibernation period, and before the main bat activity season) to ensure minimum likelihood of disturbing any hibernating bats. • All roof areas will be soft stripped with a suitably qualified ecologist present. A bat box will need to be installed on a wall unaffected by the building works within the property boundaries prior to the commencement of works. A bat emergence survey would not necessarily provide conclusive evidence in this instance, due to limited visibility where the PRF's are present, whereas a close inspection prior to demolition would ensure no bats were harmed.

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 were commissioned by Struan Robertson to undertake a Preliminary Roost Assessment (PRA) at 60 Mayfield Avenue. The assessment is informed by the Bat Conservation Trust publication *Bat Surveys for Professional Ecologists – Good Practice Guidelines* (Collins, J. (Ed) 2016).

No previous reports have been produced for this site by Ark Ecology.

1.2 Site Context

The site is located at National Grid Reference SD 74628 41144, comprising an area of approximately 220m². There is 1 building within the site boundaries. The full extent of the building was surveyed as this will be affected by the proposed development.

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 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. To achieve this, the following steps have been taken:

- A desk study has been carried out.
- 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
- 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.

1.4 Project Description

The development proposals are for a two-storey extension, with single-storey lean to.

A planning application is being prepared for submission to Ribbles Valley Borough Council.

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

2.0 Methodology

2.1 Desk Study methodology

Existing bat records relating to the site and a surrounding 2km radius (the study area) are required to conform with national guidelines and these may need to be requested from Lancashire Environmental Records Centre. The data search is confidential information that is not suitable for public release.

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 Site Survey methodology

The survey was undertaken by Carol Edmondson (Natural England bat licence number: **2015-12195 CLS-CLS**) on 07/12/2018.

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. 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.

For any surveyed trees

A visual inspection from ground level using binoculars and where accessible an internal inspection of suitable roosting features using an endoscope, torch and ladders.

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	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.

Table 2: Features of a tree that are correlated with use by bats

Likelihood of bats being present	Feature of tree and its context
Higher	A tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

Lower	A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features seen with only very limited roosting potential.
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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.

There were no specific limitations to the survey regarding safety from biotic (e.g. wasps) or abiotic (e.g. asbestos) sources or adverse weather. There is limited visibility of the rear roof pitch due to the gradient of the garden falling away from the property, the proximity of the neighbouring property, and the constraints of the garden size. Internally, only the loft space immediately adjacent to the entrance was inspected closely due to safety concerns of putting weight on the ceiling timbers.

Therefore, the survey was carried out to the extent based on those areas visible and accessible, and the conclusions based on the range of evidence available at the time of the survey.

3.0 Results and Evaluation

3.1 Desk Study Results

A summary of desk study results is provided below; full details with maps are included in Appendix 4.

3.2 Designated sites

There are three statutory designated sites within the study area. Their location and extent are illustrated in Appendix 4. Table 3 provides details of the designated sites including their reasons for notification.

Table 3: Designated sites within 2km radius of the site

Designated Site Name	Distance from Site (approx.)	Reasons for Notification from Natural England and/or BRD or LPA policy maps
Statutory Sites		
Crosshill Quarry Local Nature Reserve (LNR).	1990m north	Cross Hill is a good example of natural change on a man-made site and has since become an exceptional refuge for wildlife. Once quarrying ceased, the thin soils and exposed rock became revegetated through stages of succession from flower-rich grasslands, to hawthorn scrub and finally woodland. Examples of each stage can still be seen.
Salthill Quarry LNR	1450m north	At the southeast corner of the reserve, the soil is at its earliest stage of development and supports a sparse vegetation of plants well adapted to the harsh conditions. Bee Orchid, Carline Thistle and Milkwort can be seen growing here in June. You can see Autumn Gentian (or Fellwort) flowering later in the year in August and September. On the more established soils you will be able to see Cowslips. Ash and Hawthorn trees dominate the woodland. There are also a variety of butterflies and birds. Fossilised rocks are abundant in several areas of the reserve. The site also includes a wildflower meadow.

Designated Site Name	Distance from Site (approx.)	Reasons for Notification from Natural England and/or BRD or LPA policy maps
Salthill and Coplow Quarry Site of Special Scientific Interest (SSSI) & their relative Impact Risk Zones	1450m north east	The rocks at Coplow Quarry are particularly noted for the rich and varied fossil remains they contain, some of which were first recognised here. The famous Carboniferous Limestone site is the type locality for the fossiliferous Salthill Bank Beds (Chadian) and the Salthill Cap Beds (Arundian) of the Clitheroe Limestone Complex Impact Risk Zone: To assess planning applications for likely impacts on SSSIs/SACs/SPAs & Ramsar sites (England). Proposal is not significant enough to impact any SSSI.
Non-statutory Sites		
None known	N/A	N/A

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 below:

The site is in a residential area in the south east of Clitheroe, Lancashire. The immediate landscape is dominated by residential housing and associated gardens. Pasture and grass meadows extend to the south and east with hedgerows, scattered woodland copses and tree lines, which could be used for foraging and commuting by bats. Primrose Mill lodge lies approx. 880m to the south west, and with its surrounding woodland will provide abundant insect foraging for bats.

Priority habitats within 2km of the site are listed in Table 4.

Table 4: *Priority Habitat Inventory within 2km (Magic.gov.uk):*

Habitat	Closest distance from site
Deciduous Woodland	~650m west (Primrose Lodge)
Woodpasture and Parkland BAP Priority Habitat	~550m north-west (Clitheroe Castle)
Good quality semi-improved grassland	~1740m north-west

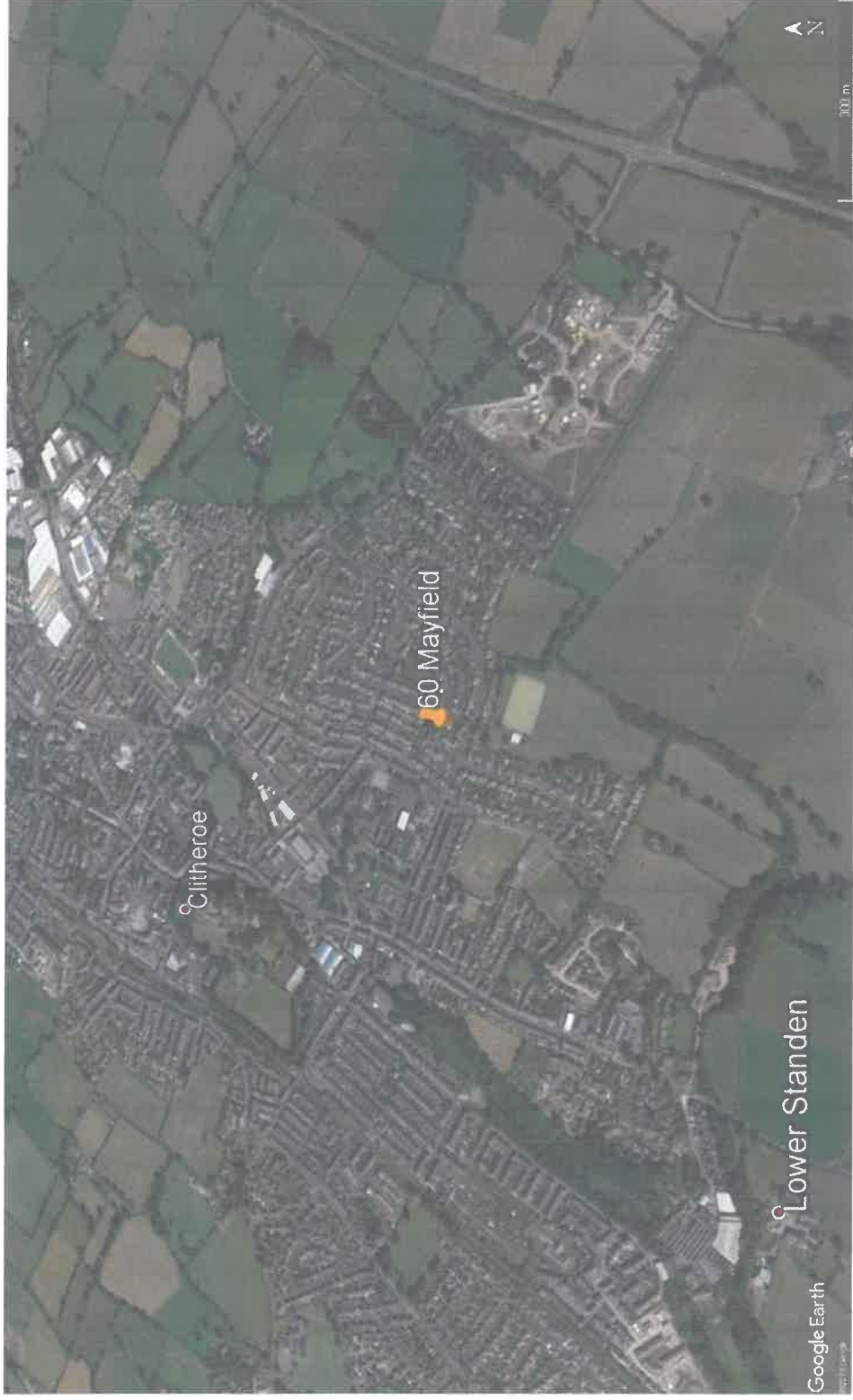


Figure 1: Aerial photo of site, showing landscape structure

3.4 Historical records

A search of the magic database for granted European Protected Species Mitigation Licences (EPSMLs) for bats within a 2km radius found one licenced site and details are provided in Table 5 below.

Table 5: *Granted EPSMLs (bats) within 2km of the site*

Case reference of granted application	Approx. distance from site	Bat Species Effected	Licence Start Date:	Licence End Date:	Impacts allowed by licence
2014-6395-EPS-MIT-1	1910m to the southwest	C-PIP	10/03/2015	30/04/2020	Destruction of a resting site

These results show the presence of common pipstrelle *Pipistrellus pipistrellus* bats within the study area.

3.5 Field Survey Results

There is one survey building/tree on the site. This building/tree is designated as B1 and is illustrated in the map in Appendix 1. The environmental variables recorded at the time of the survey are shown in Table 6.

Table 6: Environmental variables during the survey

Date: 07/12/2018	
Temperature	7°C
Cloud Cover	20%
Wind	4km/h
Rain	None

3.6 Site Feature descriptions and photos

Building B1 Description B1 is a two-storey brick built and pebble-dashed semi-detached house, built approx. 60 years ago. There is a single storey lean-to garage to the south-west elevation.	 Photo 1: Street view of B1, a pebble-dashed semi-detached house with a single storey lean-to garage.
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The main roof is of a hipped construction, and therefore has three pitches of similar dimensions; covered with concrete "Marley" tiles, probably original. There are no obviously broken or lifted tiles visible on the east or south pitches. The ridge tiles are in reasonable condition, with no obvious missing mortar. There is one vented ridge tile to the upper ridge, which could allow access for bats to the ridge cavity.

The soffit boxes are in a good state of repair with no visible gaps.

The chimney is shared with the adjoining property and is in a reasonable state of repair, with no gaps in the mortar, or lead flashing.



Photo 2: Southeast corner of B1, showing two of the 3 roof pitches, shared chimney, and vent in the ridge tile on upper ridge.

Windows are uPVC and tight fitting. The front door located on the south elevation is uPVC and tight fitting, as are the rear sliding patio doors.



Photo 3: Northwest elevation of B1.

The lean-to garage has a single pitched concrete tile roof, in a reasonable state of repair. The windows are timber framed and tight fitting. The “up-and-over” garage door to the front (southeast) elevation is timber framed and tight fitting. The barge board down the side of the building (west elevation) has a gap to the brickwork behind running the full length. There are no smudge marks or urine stains associated with historic/frequent use by bats.



Photo 4: Showing the gap behind the barge board on the west elevation of the lean-to.

There are a few gaps between the roof tiles to the front elevation, but again no evidence of use by large numbers of bats.



Photo 5: B1, front (south) elevation, showing the gaps in the roof tiles at the leading edge.

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

Interior

Internally there is a loft space above the whole of the main building. All areas that were safe to enter were inspected (refer to limitations in section 2.3 above). The loft measures approximately 4m long, 4m wide and 1.6m in height to the ridge. Timber beams are present within the main loft area and there are dense cobwebs indicating that no bats have been flying with this space recently.



Photo 6: Interior of loft space showing roof construction

The roof is lined with bitumen felt that is tight fitting in the main, but with three tears visible on the north west elevations. The supporting timbers have given way and pierced the felt, leaving large gaps to the tiles above. There is evidence of water ingress, but not signs of lifted tiles or open gaps to the outside.



Photo 7: Close up of broken roof timber and felt, exposing the underside of roof tiles.

This roof pitch is not visible from the ground, due to the constraints of the garden, and slope of the ground (refer to limitations in section 2.3 above). Should there be any lifted roof tiles on this pitch, bats would have access to the loft space through the gaps in the felt.	 Photo 8: North west roof pitch interior.
There is large amounts of dirt and debris on the fibre insulation beneath the gaps in the felt, but no bat droppings.	 Photo 9: Dirt and debris from the torn roofing felt above..

Evidence of bats

No evidence of bats was located internally or externally during the survey.
However, due to the transient nature of bats, future occurrence of roosting bats cannot be discounted.

Breeding birds and other incidental observations

There was no evidence of historic breeding birds, however there were bird droppings present in the loft space.	
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4.0 Conclusions, Impacts and Recommendations

4.1 Informative guidelines

Bats are protected under the Wildlife and Countryside Act and Conservation Regulations; see Appendix 3 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.

There are three possible outcomes of this survey, each with specific recommendations. These are outlined below:

Confirmed bat roost

Best practice survey guidelines (Collins, 2016) recommends additional surveys for confirmed roosts. Three further surveys are required to characterise the bat roost present including species, roost type and access points to inform a European Protected Species Mitigation Licence (EPSML) application with Natural England. Surveys must be completed during the active bat season (May – September). At least two of the surveys should be completed during the optimal survey period mid-May to August, and at least on the surveys should be a dawn re-entry survey (Collins, J. 2016).

Low, moderate or high likelihood of a bat roost present

Best practice survey guidelines (Collins, 2016) recommends additional surveys for features assessed as having low to high suitability for roosting bats. One, two or three further surveys are required to confirm presence/likely-absence of a bat roost, based on a low, medium or high roost likelihood evaluation. Surveys must be completed during the active bat season (May – September). If more than one survey is recommended, at least one of them should be completed during the optimal survey period mid-May to August, and at least one of the surveys should be a dawn re-entry survey (Collins, J. 2016). The survey effort recommended at this stage is iterative and if bats are recorded emerging from the buildings, a further survey will be required to provide sufficient information to inform an EPSML application to Natural England.

Negligible likelihood of a bat roost present

Buildings assessed as comprising negligible suitability for roosting bats do not normally require further surveys. However, 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.

Appropriate justification for this assessment is provided in Section 3 and Tables 1 and 2 of this report.

4.2 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.

Table 8: Evaluation of buildings/trees on site

Ref	Survey conclusions (with justification)	Foreseen impacts	Recommendations	Enhancements
B1	This building has a negligible-low likelihood of supporting roosting bats, due to the lack of evidence present and	As the proposals include the demolition of the lean-to building, and removal of the main roof, any hibernating bats present at that time	Although there is a low number of potential roosting features (PRF's) in the building, there is a lack of visual or physical evidence of current or historic use by bats, but	The Local Planning Authority has a duty to ask for enhancements under the NPPF and circular 06/2005: Biodiversity and Geological Conservation. Para.99 The installation of a bat box on the property will provide additional roosting habitat for bats e.g. Kent bat box

	negligible number of potential roosting features. Any crevice can be used for hibernating by crevice dwelling bats e.g pipistrelle species.	would be disturbed and their roost destroyed. This could result in death/injury of bats.	taking into account the transient nature of bats, a precautionary approach is advised: • work will be commenced in April (outside the usual hibernation period, and before the main bat activity season) to ensure minimum likelihood of disturbing any hibernating bats. • All roof areas will be soft stripped with a suitably qualified ecologist present. A bat box will need to be installed on a wall unaffected by the building works within the property boundaries prior to the commencement of works. A bat emergence survey would not necessarily provide conclusive evidence in this instance, due to limited visibility where the PRF's are present, whereas a close inspection prior to demolition would ensure no bats were harmed.	1FF Schwegler Bat Box 2FN Schwegler Bat Box. 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. Further advice on sources and positioning can be given.
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B1	The site provides negligible habitat for barn owls or breeding birds.	Any works which affect the vegetation on site could have an impact on nesting birds.	Any building/tree and scrub removal should be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the building/trees and scrub to be removed should be undertaken immediately prior to clearance. All active nests will need to be retained until the young have fledged.	Install two bird boxes on retained trees/buildings on site e.g. Schwegler 1SP Sparrow Terrace Schwegler 1B nest boxes Schwegler 2H Robin Boxes Nest boxes should be positioned approximately 3m above ground level where they will be sheltered from prevailing wind, rain and strong sunlight. Small-hole boxes are best placed approximately 1-3m above ground on an area of the tree trunk where foliage will not obscure the entrance hole.
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5.0 Bibliography

- British Trust for Ornithology (2016) www.bto.org/about-birds/nnbw/putting-up-a-nest-box
- Collins, J. (ed.) (2012). Bat Surveys for Professional Ecologists — Good Practice Guidelines, 3rd edition, Bat Conservation Trust, London.
- Garland & Markham (2008) Is important bat foraging and commuting habitat legally protected?
- Google Earth (2017) accessed on 07/12/2018.
- Magic database (2017) <http://www.magic.gov.uk/MagicMap.aspx> accessed on 10/12/2018.
- Mitchell-Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature, Peterborough.

Appendix 1: Survey Plan

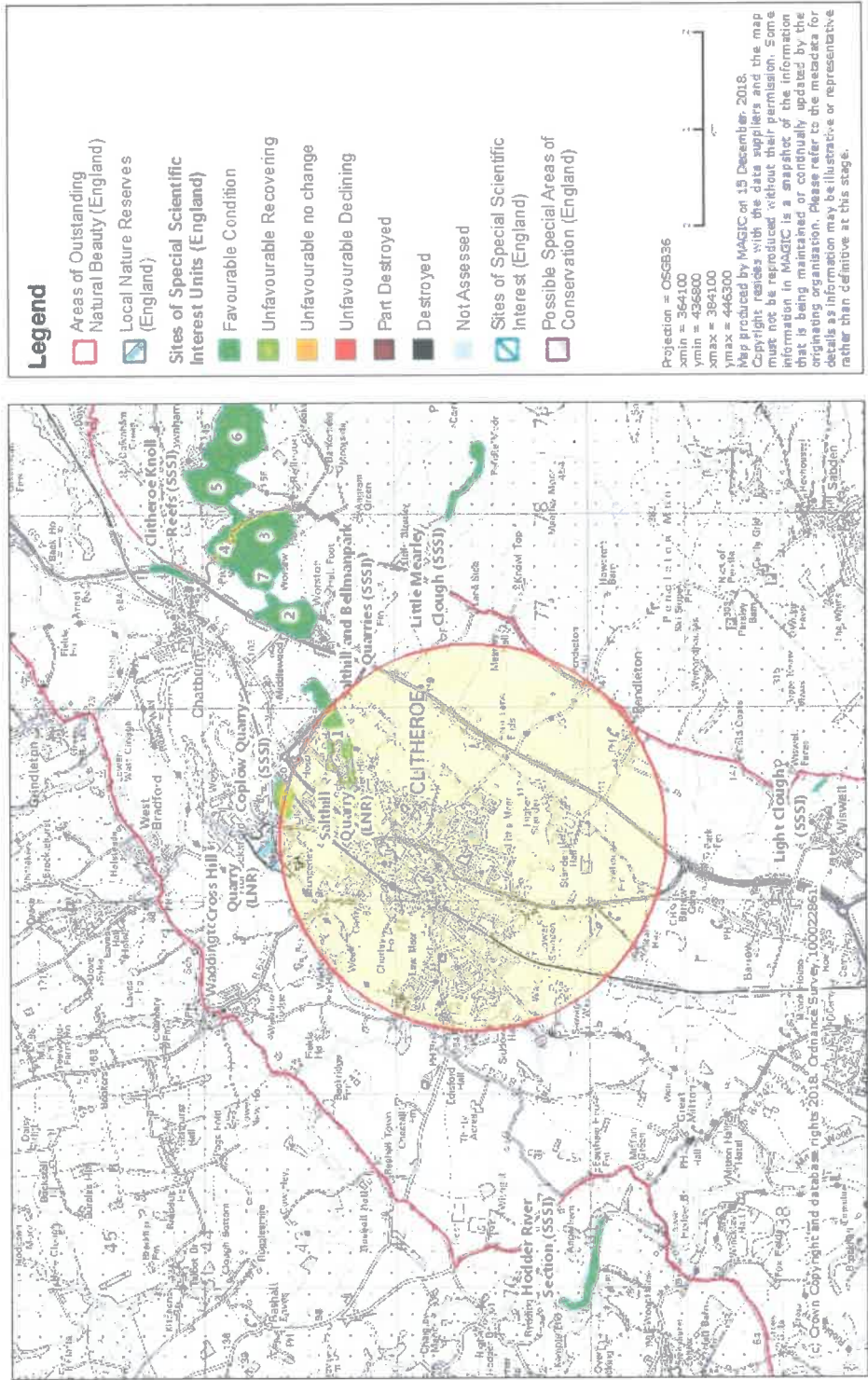




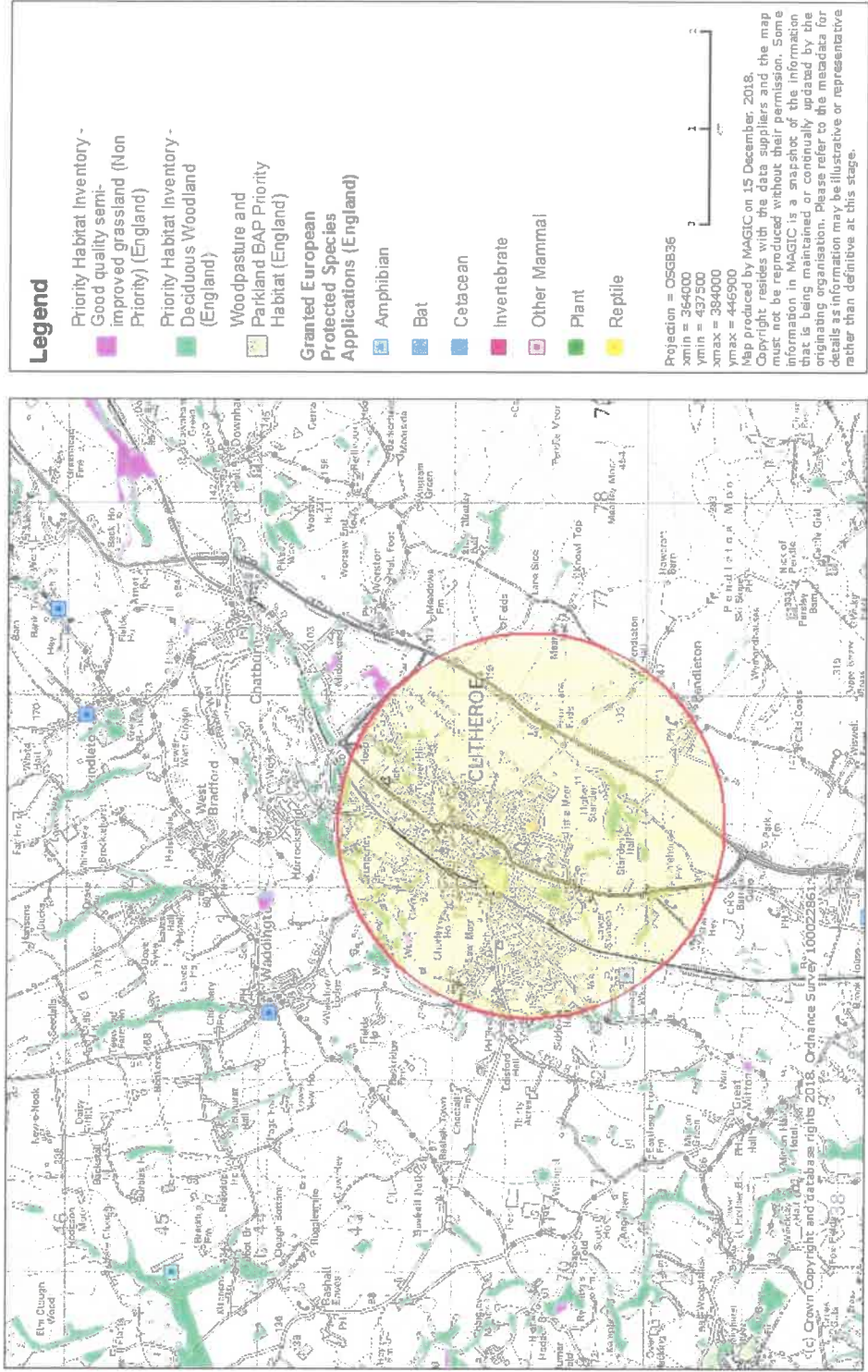
Appendix 3: Desk Study Information

Full historical records can be provided on request.

MAGIC Designated sites within 2km radius



MAGIC Priority habitats & granted EPSML's



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.

