



Preliminary Roost Assessment Survey

The Stable Flat, Ludlow, Shropshire SY8 4JZ

Amjack Construction

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Executive summary

Arbtech Consulting Limited was commissioned by Amjack Construction to undertake a Preliminary Roost Assessment (PRA) at The Stable Flat, Ludlow, Shropshire SY8 4JZ. The survey was completed on 16/08/2021. The aim of the assessment was to search for bats/field signs of bats and to consider the value and suitability of the structures for roosting bats. 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. The proposals are for the demolition of the existing stables and erection of extension. A planning application is being prepared for submission to Shropshire County Council.

Summary of Survey and Recommendations

All four buildings surveyed have been assessed as having negligible habitat value or bats. B4 was considered largely unsuitable for bats due to its construction i.e. of mixed corrugated and box profile sheeting. The internal timbers were inspected for potential roosting features, all were heavily cobwebbed which can indicate lack of recent use by bats. A low number of potential roosting features were identified along B1, B2 and B3. All were closely inspected with the use of ladders, binoculars and a torch. All were cobwebbed which can indicate lack of recent use by bats. In addition areas where missing tiles were identified no crevices were identified due to the construction of the clay tiled roofs.

No further action is required with regards to bats.

Suggested enhancement in evaluation table (See "4.0 Conclusions, Impacts and Recommendations") to increase the potential for protected species on site in line with the Local Planning Authority's duty to ask for enhancements under the NPPF (2019).

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1.0 Introduction and Context

1.1 Background

Arbtech Consulting Limited was commissioned by Amjack Construction to undertake a Preliminary Roost Assessment (PRA) at The Stable Flat, Ludlow, Shropshire SY8 4JZ. The survey was completed on 16/08/2021. The aim of the assessment was to search for bats/field signs of bats and to consider the value and suitability of the structures for roosting bats. 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. The assessment is informed by the Bat Conservation Trust publication, *Bat Surveys for Professional Ecologists – Good Practice Guidelines* (Collins, 2016).

No previous reports have been produced for this site by Arbtech.

1.2 Site Context

The site is located at National Grid Reference SO 53864 72774 and has an area of approximately 0.09ha. There are four buildings within the site boundary. All buildings were surveyed.

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 the requirements of a European protected species mitigation licence (EPSML) application if appropriate.

A survey plan is presented in Appendix 1, proposed plans in Appendix 2 (where available), desk study results in Appendix 3 and a summary of relevant legislation is presented in Appendix 4.

1.4 Project Description

The proposals are for the demolition of the existing stables and erection of extension. A planning application is being prepared for submission to Shropshire County Council.

2.0 Methodology

2.1 Desk Study methodology

The desk study included a 2km radius review of statutory and non-statutory designated sites, Biodiversity Action Plan (BAP), Priority Habitats and granted EPSML records for bats held on magic.gov.uk database. An assessment of the surrounding landscape structure was also completed using aerial images from Google Earth and OS maps.

Existing bat records relating to the site and a surrounding 2km radius are required to conform to national guidelines. The data search is confidential information that is not suitable for public release and has been analysed and summarised for presentation in this report.

2.2 Site Survey methodology

The survey was undertaken by Elen Griffin BSc (Hons), MRSB Consultant - Accredited Agent to Natural England Bat Licence Number: 2016-22119-CLS-CLS on 16/08/2021.

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 or 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 and safe to do so, an internal inspection of potential 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, 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 or 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 or 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.

2.5 Limitations

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 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.

A biological records data search was not commissioned by the client, therefore historical records of protected species have not been factored into this report. The recommendations in this report aim to compensate for the lack of biological records.

3.0 Results and Evaluation

3.1 Desk Study Results

A summary of desk study results is provided below, full details are presented in Appendix 3.

3.2 Designated sites

Details of any statutory and non-statutory designated sites within a 2km radius of the survey site, including their reasons for notification, are provided in Table 3 below.

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		
River Teme Site of Special Scientific Interest (SSSI).	~1822m north west	The River Teme is the second largest tributary of the River Severn, draining a hilly, predominantly rural catchment of Silurian and Devonian rocks. The notified channel is of special interest as a representative, near-natural and biologically-rich river type associated with sandstone and mudstones. This type has a mainly northern and western distribution in Britain but is especially characteristic of the Welsh Marches. The Teme demonstrates a close relationship with the underlying geology. A short, rapid flowing upland section, with nutrient-poor and relatively acidic waters, changes to a more basic and naturally nutrient-rich system for most of the river's length as it passes over Silurian shales and mudstones, and the Old Red Sandstone strata. At its lowest section, the Teme is a sluggish, lowland river on soft deposits.
Non-statutory Sites		
None known.		

3.3 Landscape

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

The site is in a rural area of southern Shropshire, south of Ludlow. The landscape is dominated by scattered residential dwellings and agricultural fields. There are small, scattered woodland copses and tree lines around the area, which could be used for foraging and commuting. Scattered irrigation ditches around the area 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
Traditional Orchards	~87m north
Deciduous Woodland	~299m east
Good quality semi-improved grassland	~441m north east
Ancient Woodland	~539m south west
Lowland Calcareous Grassland	~712m north east
Woodpasture and Parkland BAP Priority Habitat	~1320m south west



Figure 1: Aerial photo of site, showing landscape structure

3.4 Historical records

Existing bat records relating to the site and a surrounding 2km radius are required to conform to national guidelines. The data search is confidential information that is not suitable for public release. The client has been advised that biological records data for the local area is necessary to facilitate a complete assessment. To date Arbtech has not been authorised to purchase these records from Shropshire Ecological Data Network (SEDN).

Table 5: Historical records* of bats within 2km of the site

Common name	Scientific binomial	Number of records	Number of roost records	Maternity roost records
The client has not authorised Arbtech to purchase BRD to incorporate into the evaluation.				

*Records from the past 10 years

A search of the magic.gov.uk database for granted European protected species mitigation licences (EPSMLs) within a 2km radius of the site has been completed. Displaced bats from licenced sites <2km away from the survey site will find alternative habitat either within the mitigation measures implemented as part of the licence or will relocate to other known roosts sites in close proximity to the licenced site. The EPSML records show that one EPSL has been granted within 2km of the site involving whiskered and brown long-eared bats.

Table 6: 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
EPSM2011-3237	~1796m north east	BLE;WHISK	01/10/2011	31/07/2015	destruction of a resting place

3.5 Field Survey Results

Four buildings were surveyed, designated as B1, B2, B3 and B4 and illustrated in the map in Appendix 1. The weather conditions recorded at the time of the survey are shown in Table 7.

Table 7: Weather conditions during the survey

Date: 16/08/2021	
Temperature	16°C
Relative Humidity	69%
Cloud Cover	95%
Wind	12mph
Rain	None

3.6 Site Feature descriptions and photos

B1 Exterior

B1 – north east elevation (pictured opposite).

B1 is a detached single-storey brick built building with a hipped and pitched roof clad in clay tiles. The tiles for the most part are in good condition with the exception of a missing hip tile and two missing tiles along the south eastern elevation.

The brickwork around the building is in excellent condition with no areas of missing mortar in which bats could roost.

New windows and doors have been installed as part of a pre existing project.

B1 – south eastern elevation (pictured opposite).

There are two chimneys located on the roof of the building. The brickwork on the chimneys is in good condition. There is lead flashing around the bases of the chimney which is flat and without gaps.



B1 – missing hip tile (pictured opposite).

A missing hip tile was identified along the roof. The area was closely inspected with the use of ladders a torch and binoculars. The gap was cobwebbed internally which can indicate lack of recent use by protected species.



B1 – south eastern elevation roof (pictured opposite).

Two missing tiles were identified along the south eastern elevation. Although the tiles were missing due to the construction of the roof there were no visible crevices in which bats could roost.

In addition the proposed development will not impact this elevation of B1.



B1 Interior

B1 – loft space (pictured opposite).

There is no loft space present in B1. The roof structure is built from modern timber beams including the ridge beam. There is no roof lining, the roof is constructed of timber sarking or similar.

Internally B1 is extremely light due to the presence of widows and skylights.



B2+B3 Exterior

B2 & 3 – southern elevation (pictured opposite).

B2 and B3 are single-storey brick built buildings with pitched and gabled roofs clad in clay tiles. Both buildings are ex stable buildings that were used to house horses until fairly recently.

The brickwork around the building is in excellent condition with no areas of missing mortar in which bats could roost.

Both roofs were in excellent condition with no areas of missing or raised tiles under which crevice dwelling species such as pipistrelle bats could roost.



B2 & 3 – northern elevation (pictured opposite).

Areas of weather boarding are also present around the stable doors. The boarding is in excellent condition with no gaps which could provide suitable habitat for crevice dwelling species.

An area of damage (highlighted in red) was identified along the roof. The area was closely inspected with the use of binoculars and a torch. Cobwebs were identified around the damaged tiles which can indicate lack of recent use by protected species.



B2 & 3 – roof looking east (pictured opposite).

The roof and the valley of the buildings was in excellent condition with no areas of damaged or missing tiles which could provide suitable roosting habitat for bats.



B2 & B3 Interior

B2 & B3 interior - roof

There is no loft space present in B2 or B3. The roof structure of both buildings is built from modern timber beams including the ridge beam. There is no roof lining, the roof is constructed of timber sarking or similar.

Internally both buildings are extremely light due to the presence of stable doors and vents. The vents present along the roof were all extremely cobwebbed which can indicate lack of recent use by protected species.

**B4 Exterior**

B4 exterior – southern elevation (pictured opposite).

B4 is a collection of three interlinking barns including a Dutch style barn. The barns are built of a mix of corrugated iron, weather boarding and box profile sheeting.

The corrugated iron roofs are considered not to provide any suitable roosting features for bats.



B4 exterior – north eastern elevation (pictured opposite).
Example of the exterior walls of B4.



B4 Interior

B4 – example of the internal roof structure (pictured opposite).
The roof structures are built from corrugated iron and box profile sheeting.
Gaps are present between the weather boarding however upon close inspection they were extremely cobwebbed which can indicate lack of use by protected species.



B1 – B4 Evidence of bats

There was no evidence of bat activity located internally in B1. There was no evidence of bat use (e.g. bat droppings) found on external features. However, this kind of evidence is easily weathered away on the exterior of buildings and is rarely visible.

B1 - B4 Breeding birds and other incidental observations

No birds or evidence of birds was identified with regards to B1.

A number of swallow nests were identified within B2 and B3. A crows nest was identified within B4.



4.0 Conclusions, Impacts and Recommendations

4.1 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.

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 one of 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 or 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, 2016). If two or one further survey is recommended these surveys must be completed during the optimal survey period (mid-May to August). For low and moderate roost likelihood evaluation the survey effort recommended at this stage is iterative and if bats roosts are confirmed in the building, 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 Arbtech should be contacted for further advice.

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 the building on site

Ref	Survey assessment conclusions (with justification)	Foreseen impacts	Recommendations	Enhancements The Local Planning Authority has a duty to ask for enhancements under the NPPF (2019)
B1-B4 Bats	All buildings surveyed were considered to have negligible habitat value for roosting bats. A small number of roosting features were identified along all buildings surveyed. All features were closely inspected with the use of binoculars, a torch and ladders. The features were found to be cobwebbed which indicates lack of recent use by protected species. All buildings are subject to high levels of disturbance due to on going development projects.	Bats are very unlikely to be roosting within the structures surveyed and as such, there are not anticipated to be any impacts on bats as a result of the proposed works.	No further surveys required. In the unlikely event that a bat or evidence of bats is discovered during the development all work must stop and a bat licenced ecologist contacted for further advice.	The installation of four Schwegler bat box or a similar brand on the existing building or on a mature trees around the site boundaries will provide additional roosting habitat for bats e.g. <ul style="list-style-type: none"> • 2F Schwegler Bat Box • 1FF Schwegler Bat Box • 2FN Schwegler Bat Box. Bat boxes should be positioned 3-5m above ground level facing in a south or south-westerly direction with a clear flight path to and from the entrance. OR The installation of four bat tube into the new extension e.g. <ul style="list-style-type: none"> • Habibat bat box • Schwegler 1FR bat tubes Bat tubes should be inserted into the fabric of the building during construction positioned at the eaves on the southern ends of the east and west elevations, so they are facing the surrounding greenery.
B1 Birds	B1 provides negligible habitat for barn owls or breeding birds.	None.	None.	Install four Schwegler or similar bird boxes to include sparrow terraces on trees around the site and/or on proposed new building. Other boxes could include: <ul style="list-style-type: none"> • Schwegler 1B nest boxes • Schwegler 2H Robin Boxes • Sparrow terraces Schwegler 1B and Schwegler 2H 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. Sparrow Terraces/nest boxes should be positioned at the eaves of the remaining building.

B2- B4 Birds	Sparrow and crows nests were identified within B2, B3 and B4.	Active nests could be destroyed during the works.	Works should be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the buildings should be undertaken immediately, by qualified ecologist, prior to the commencement of work. All active nests will need to be retained until the young have fledged.	As Above.
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5.0 Bibliography

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- Mitchell-Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature, Peterborough.
- National Planning Policy Framework (2021) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf
- Natural England (2021). <https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/2000102.pdf> accessed on 24/08/2021

Appendix 1: Survey Plan



Appendix 2: Proposed Site Plan

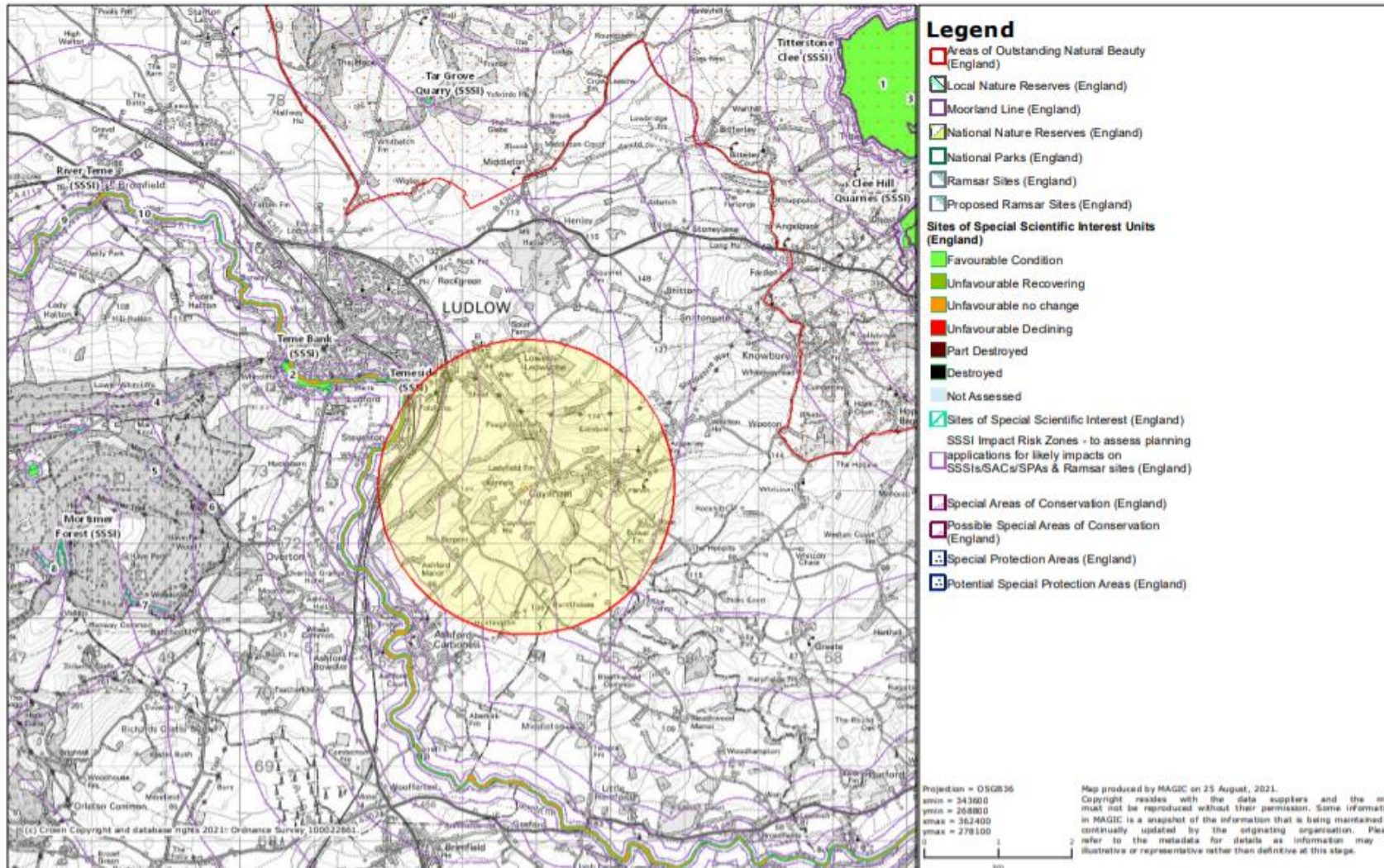
None provided

Appendix 3: Desk Study Information

Full historical records can be provided on request.

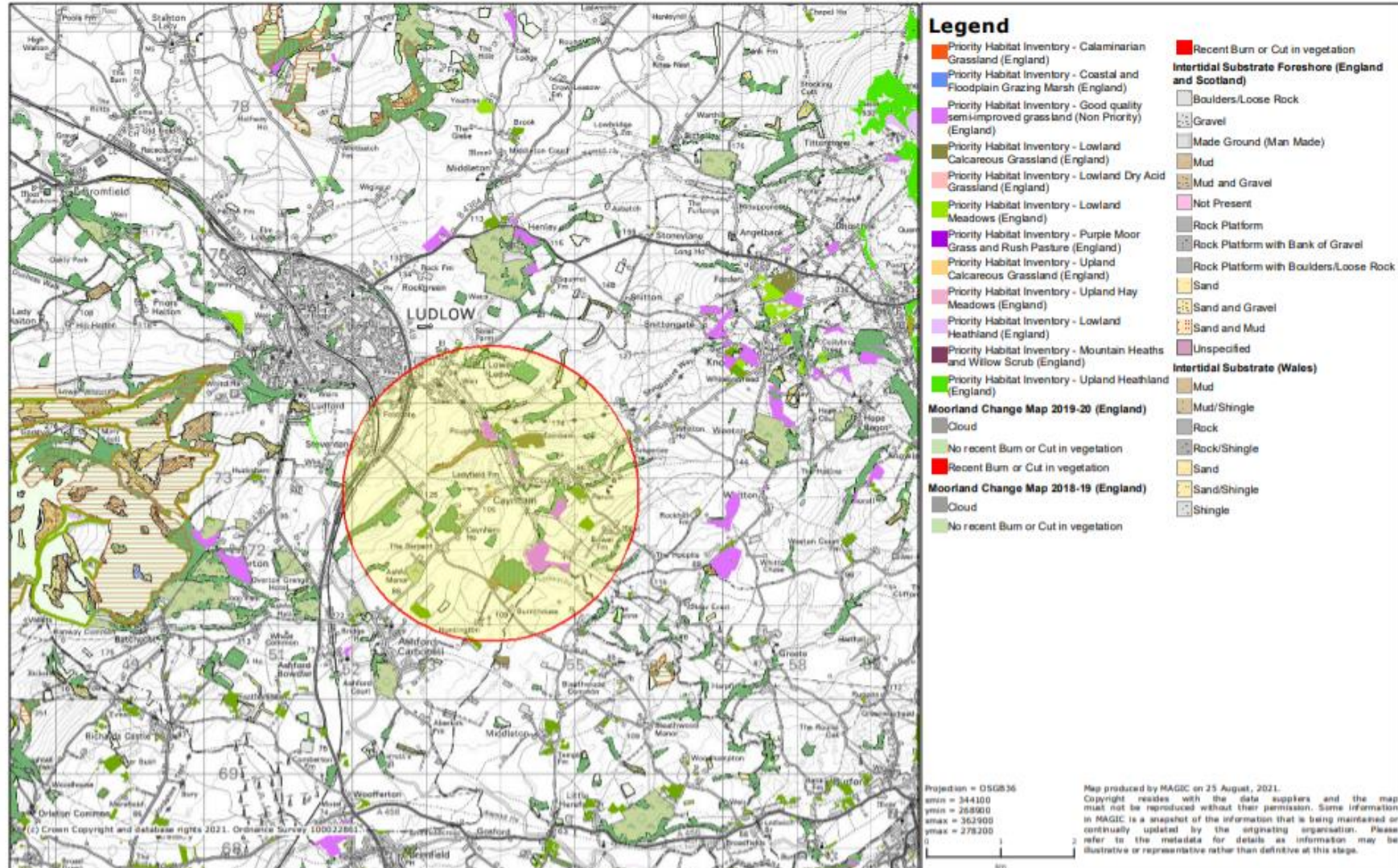


Statutory Designated Sites



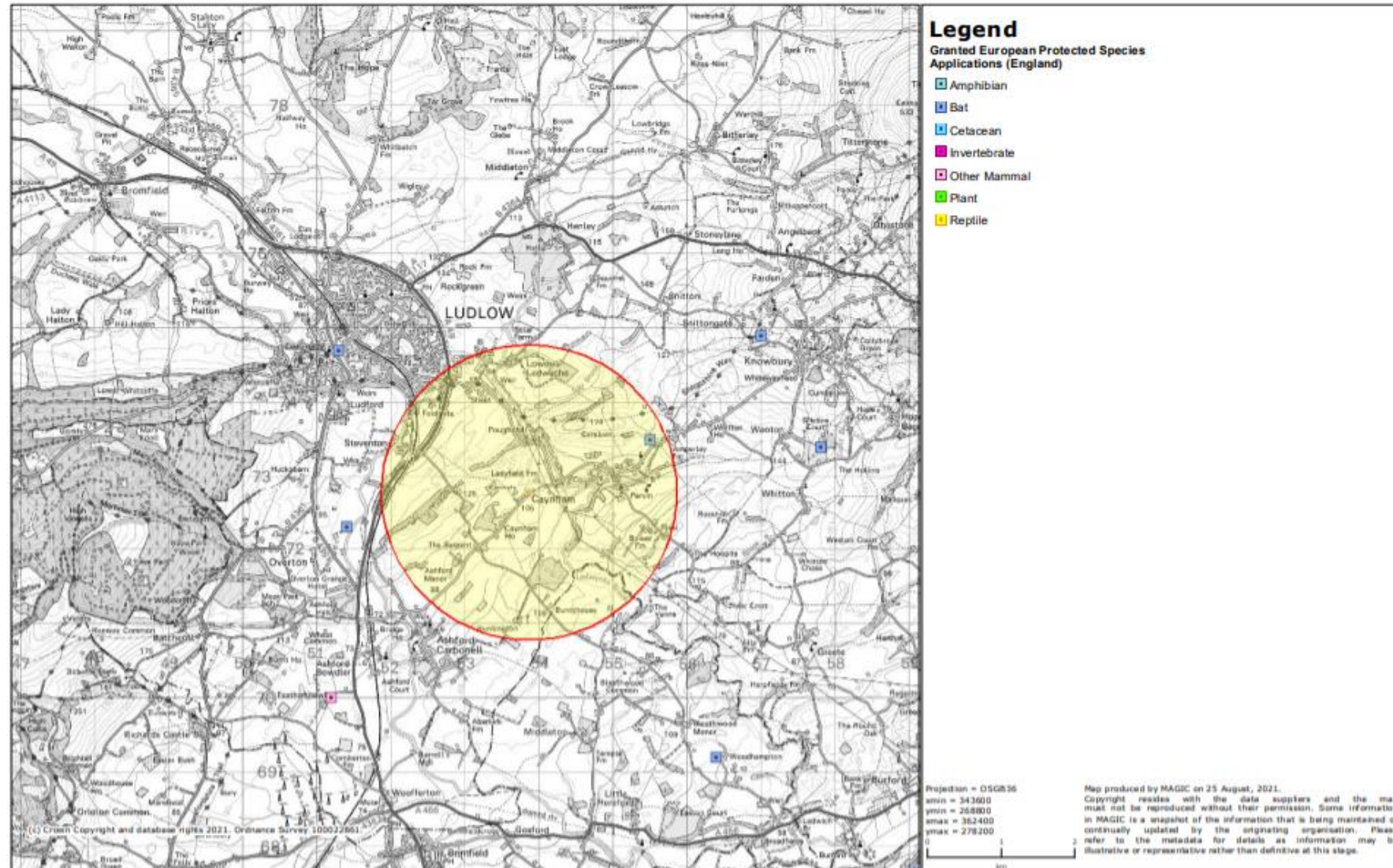
MAGiC

Habitats



MAGiC

EPSL



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 2017* through their inclusion on Schedule 2.

Regulation 43: Protection of certain wild animals - offences

(1) A person is guilty of an offence if they:

- (a) Deliberately captures, injures or kills any wild animal of a European protected species,
- (b) Deliberately disturbs wild animals of any such species,
- (c) Deliberately takes or destroys the eggs of such an animal, or
- (d) Damages or destroys a breeding site or resting place of such an animal,

(2) For the purposes of paragraph (1) (b), disturbance of animals includes in particular any disturbance which is likely—

- (a) To impair their ability:
 - (i) To survive, to breed or reproduce, or to rear or nurture their young; or
 - (ii) In the case of animals of a hibernating or migratory species, to hibernate or migrate; or
- (b) To affect significantly the local distribution or abundance of the species to which they belong.

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

NATIONAL PLANNING POLICY (ENGLAND)

National Planning Policy Framework 2017

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 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.

Effect on development works:

A European protected species mitigation (EPSM) Licence issued by 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).

There are 17 species of bat breeding in England and Natural England issues licences under Regulation 55 of the Habitats Regulations to allow you to work within the law.

Licences are issued for specific purposes stated in the Regulations, if the following three tests are met:

- The purpose of the work meets one of those listed in the Habitats Regulations (see below);
- That there is no satisfactory alternative;
- That the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status (FCS) in their natural range

The Habitats Regulations permits licences to be issued for a specific set of purposes including:

1. ***include preserving public health or public safety or other imperative reasons of over-riding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment;***
2. scientific and educational purposes,
3. ringing or marking
4. conserving wild animals

Development works fall under the first purpose and Natural England issues bat mitigation licences for developments.