

# **Preliminary Roost Assessment Survey**

Wolfson College, Linton Rd, Oxford, Oxfordshire OX2 6UD
Original Field Architects

#### Arbtech Consultant's Contact details:

Joe Slade BSc (Hons) Consultant

Tel: 07872127684 Email: joeslade@arbtech.co.uk

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https://arbtech.co.uk

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# **Executive summary**

Arbtech Consulting Limited was commissioned by Original Field Architects to undertake a Preliminary Roost Assessment (PRA) at Wolfson College, Linton Rd, Oxford, Oxfordshire OX2 6UD. The survey was completed on 17/12/2020. The aim of the assessment was to search for bats and 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 *Tyto alba*.

The development proposals involve replacement of windows and flat roofs. A planning application is being prepared for submission to Oxford City Council.

Recommendations - This is work you will need to commission (if any) to obtain planning permission and comply with legislation None. See section 4.2 for full evaluation.

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#### 1.0 Introduction and Context

### 1.1 Background

Arbtech Consulting Limited was commissioned by Original Field Architects to undertake a Preliminary Roost Assessment (PRA) at Wolfson College, Linton Rd, Oxford, Oxfordshire OX2 6UD. The survey was completed on 17/12/2020. 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 Arbtech.

#### 1.2 Site Context

The site is located at National Grid Reference SP 51475 08335 and has an area of approximately 4.3ha. Seven buildings were surveyed as these 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 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, desk study results in Appendix 3 and a summary of relevant legislation is presented in Appendix 4.

## 1.4 Project Description

The development proposals involve replacement of windows and flat roofs. A planning application is being prepared for submission to Oxford City 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 is analysed and summarised for presentation in this report.

### 2.2 Site Survey methodology

The survey was undertaken by Joe Slade (Natural England bat licence number: 2017-32515 CLS-CLS).

All features that will be impacted by the project proposals were assessed for their bat roosting and 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 and 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.

### 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 and 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			
	onger 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 limit			
	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.

There were no specific limitations to the survey.

### 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 1km radius of the survey site, including their reasons for notification, are provided in Table 3 below.

Table 3: Designated sites within 1km radius of the site

Designated Site Distance from Name Site (approx.)		Reasons for Notification from Natural England			
Statutory Sites					
New Marston Meadows Site of Special Scientific Interest (SSSI)	40m east	New Marston Meadows are a series of agriculturally unimproved neutral meadows on the flood plain of the River Cherwell which forms a natural corridor through the centre of Oxford. Within the floodplain calcareous clayey soils have formed on alluvium overlying terrace gravels. The meadows are still traditionally managed as summer-grazed pasture and fen or for hay, the different management practices giving rise to variations in plant communities between the fields. Further, subtle changes in topography create conditions which support a range of swamp and grassland types which are of national importance.			
Non-statutory Sites					
Oxford Greenbelt	Within greenbelt	No information on magic.gov.uk			

### 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 of Oxfordshire, on the outskirts of Oxford. The landscape is dominated by residential areas and large arable fields. There are scattered patches of woodland and areas of grassland in the local vicinity, which could be used for foraging and commuting. The River Cherwell is located ~20m to the east that could be an important local habitat for bats and provides abundant insect foraging.

Priority habitats within 1km of the site are listed in Table 4.

Table 4: Priority Habitat Inventory within 1km (Magic.gov.uk):

Habitat	Closest distance from site	
Deciduous woodland	310m south-east	
National forest inventory woodland	310m south-east	
Traditional orchard	610m west	
Coastal and floodplain grazing marsh	240m south-east	

Lowland meadows	60m east
Wood-pasture and parkland	620m south-east



Figure 1: Aerial photo of site, showing landscape structure

#### 3.4 Historical records

The Local Records Centre will need to be commissioned to provide bat records within a 2km radius of the site. These can be provided on request and will be analysed and summarised in Table 5 upon receipt.

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
Data search not commissioned by				
the client				

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 >1km 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.

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
2016-20931-EPS-MIT	1810m south	Common pipistrelle, soprano pipistrelle	22/02/2016	28/02/2021	Damage of a resting place
2017-30258-EPS-MIT	1970m south-east	Common pipistrelle	06/07/2017	31/08/2023	Destruction of a resting place
EPSM2012-4539	1860m north-west	Common pipistrelle	01/08/2013	30/05/2016	Destruction of a resting place
2014-2499-EPS-MIT 2014-2499-EPS-MIT-1	1230m north-west	Common pipistrelle	02/09/2014 24/02/2015	30/09/2019 30/09/2019	Destruction of a resting place
2016-22076-EPS-MIT 2016-22076-EPS-MIT-1	920m south-west	Common pipistrelle	08/03/2016 22/06/2016	08/03/2021 08/03/2021	Destruction of a resting place

### 3.5 Field Survey Results

Seven buildings on site were surveyed, designated as B1 – B7 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: 17/12/2020	
Temperature	7°C
Relative humidity	70%
Cloud cover	30%
Wind	2 mph
Rain	None

# 3.6 Site Feature descriptions and photos

#### **B1** Exterior

B1 – quad area, facing south (pictured opposite).

Building B1 is a three-storey, brick and concrete-built rectangular building with a central quad area. The building has a flat roof clad in bitumen felt which is in good condition with no gaps or damaged sections that bats could roost in. There are numerous windows around the building which are metal framed. No gaps are present around the sides of the windows that bats could roost in.







B1 – south-western elevation (pictured opposite).



B1 – south-eastern elevation (pictured opposite).

The picture shows external concrete slabs which have gaps behind that bats could access (see red arrows). The noted gaps could not be closely inspected and may have some suitability to support crevice roosting bats. There are other gaps in the external concrete slabs around located around the buildings that were assessed to be unsuitable for bat roosting because they are too shallow and are exposed to wind and rain ingress.



B1 – roof top, north-eastern section (pictured opposite).

The bitumen felt and other roof features were inspected from on the roof, where safe and practicable to do so. Binoculars were used to assess roof areas that could not be closely inspected.



B1 – roof top, south-eastern and south-western sections (pictured opposite).

The picture opposite shows a pyramidal roof located on the south-eastern section of B1. The pyramidal roof is clad in lead flashing which is in good condition with no raised sections that bats could roost in.



### **B2** Exterior

B2 – south-eastern elevation (pictured opposite).

Building B2 is a five-storey brick and concrete-built building with a flat roof clad in bitumen felt. The bitumen felt is in good condition with no gaps or damaged sections. The building is similar in build and design to the other buildings on site. No suitable bat roosting features were located externally on the building.



B2 – north-eastern elevation (pictured opposite).



B2 – roof top, facing north-east (pictured opposite).

The bitumen felt was closely inspected, especially where the felt folds over the corners of the roof.

No gaps were present in which bats could roost.



B2 – windows (pictured opposite).

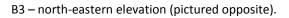
The picture opposite shows an example of the windows to be replaced. The windows are all tight-fitting with no gaps around the sides that bats could enter.



### **B3 Exterior**

B3 – south-eastern elevation (pictured opposite).

Building B3 is a five-storey brick and concrete-built building with a flat roof clad in bitumen felt. The bitumen felt is in good condition with no gaps or damaged sections. The building is similar in build and design to the other buildings on site. No suitable bat roosting features were located externally on the building.







B3 – north-western elevation (pictured opposite).



### **B4 Exterior**

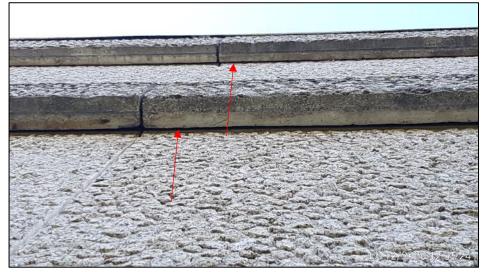
B4 – north-eastern and south-eastern elevations (pictured opposite).

Building B4 is a three-storey brick and concrete-built building with a flat roof clad in bitumen felt. The bitumen felt is in good condition with no gaps or damaged sections. The building is similar in build and design to the other buildings on site.



B4 – north-eastern elevation (pictured opposite).

The picture shows external concrete slabs which have gaps behind that bats could access (see red arrows).



B4 – north-western elevation (pictured opposite).



### **B5 Exterior**

B5 – north-western elevation (pictured opposite).

Building B5 is a three-storey brick and concrete built-building with a flat roof clad in bitumen felt. The bitumen felt is in good condition with no gaps or damaged sections. The building is similar in build and design to the other buildings on site.

B5 – south-eastern elevation (pictured opposite).





B5 – south-western elevation (pictured opposite).



# **B6 Exterior**

B6 – south-eastern elevations (pictured opposite).

Building B6 is a three-storey brick and concrete-built building with a flat roof clad in bitumen felt. The bitumen felt is in good condition with no gaps or damaged sections. The building is similar in build and design to the other buildings on site.



B6 – south-western elevation (pictured opposite).

B6 – north-eastern elevation (pictured opposite).





#### **B7 Exterior**

B7 – south-western and north-western elevations (pictured opposite).

Building B7 is a three-storey brick and concrete-built building with a flat roof clad in bitumen felt. The bitumen felt is in good condition with no gaps or damaged sections. The building is similar in build and design to the other buildings on site.



B7 – north-eastern elevation (pictured opposite).

#### B1 – B7 Interior

No loft spaces are located within the roofs of the buildings. The bitumen felt lining on the roofs was in good condition with no raised or damaged sections that bats could use to enter cavities within the roof structures. As such, the likelihood that bats are roosting inside the buildings is extremely small.



# B1 – B7 Evidence of bats

No live bats or secondary evidence of bat activity, such as droppings or feeding remains, were located externally on the buildings.

# Breeding birds and other incidental observations

No evidence of bird nesting activity was located externally on the survey buildings.

### 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 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 the surveys should be a dawn re-entry survey (Collins, J. 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 a suitably qualified ecologist 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 building on site

Ref	Survey assessment conclusions (with justification)	Foreseen impacts	Recommendations	Enhancements The Local Planning Authority has a duty to ask for enhancements
	justification)			under the NPPF (July 2018)
B1, B4	There were gaps behind concrete slabs located externally on the south-eastern elevation of B1 and on the north-eastern elevation of B4 that could provide suitable roosting sites for crevice dwelling bats. The proposed works will not result in the loss of these features. There are windows located below the noted gaps on B1 which will be	None.	None.	The installation of two Schwegler bat boxes on a mature tree on the site boundaries will provide additional roosting habitat for bats e.g.  2FN Schwegler Bat Box or similar.  Bat boxes should be positioned 3-5m above ground level facing in a south or south-westerly direction, away from sources of light and with a clear flight path to and from the entrance.
	replaced but any disturbance to roosting bats in this area would be minimal. No windows are located in close proximity to the gaps noted on B4. Although the buildings are situated in close proximity to nearby foraging and commuting resources, the buildings are built from concrete and have no loft spaces that bats could access. As such, the buildings were assessed to have low — moderate suitability to support roosting bats.			
B2, B3, B5, B6, B7	The buildings had no suitable internal or external roosting features.	None.	None.	See above.

# 5.0 Bibliography

- British Trust for Ornithology (2016) <a href="www.bto.org/about-birds/nnbw/putting-up-a-nest-box">www.bto.org/about-birds/nnbw/putting-up-a-nest-box</a>
- Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists —Good Practice Guidelines, 3<sup>rd</sup> edition, Bat Conservation Trust, London.
- Garland & Markham (2008) Is important bat foraging and commuting habitat legally protected?
- Google Earth (2020).
- MAGIC database (2020) <a href="http://www.magic.gov.uk/MagicMap.aspx">http://www.magic.gov.uk/MagicMap.aspx</a>.
- Mitchell-Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature, Peterborough.

# Appendix 1: Survey Plan



# Appendix 2: Proposed Site Plan

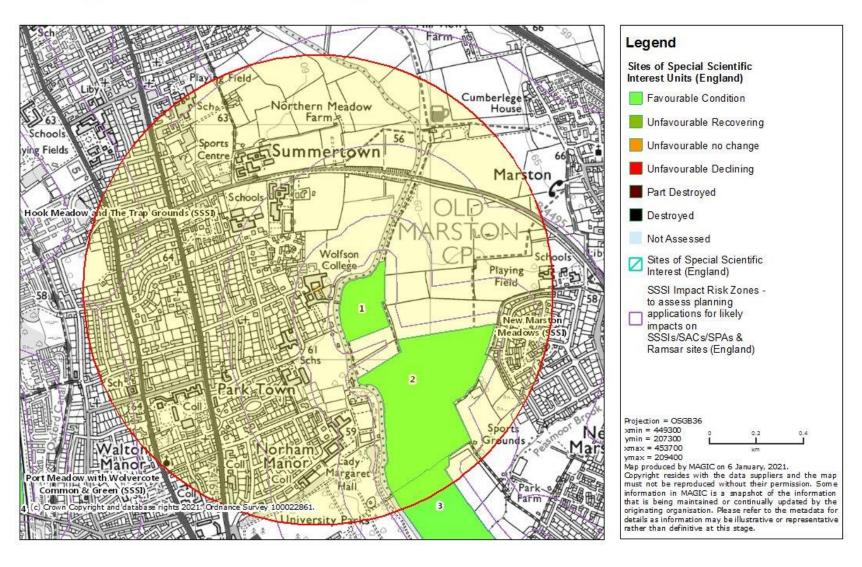
Not provided by the client

# **Appendix 3: Desk Study Information**

Full historical records can be provided on request.

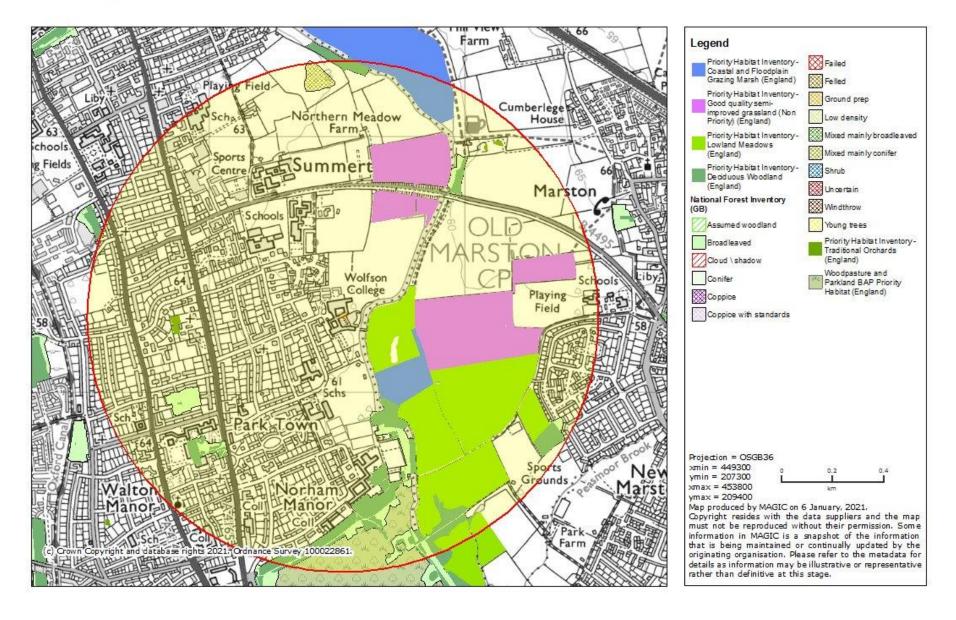


# **Designated Sites**



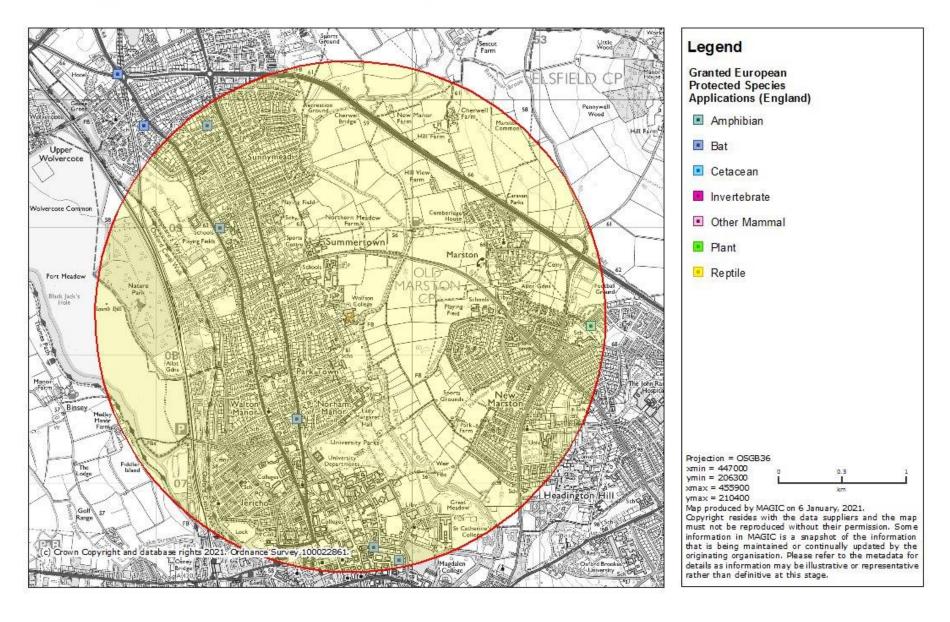


# **Habitats**





# **EPSLs**



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

### New legislation (2020)

The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 came into force when Britain left the European Union on 31st January 2020. It covered amendments relevant to this survey to:

Wildlife and Countryside Act 1981: England and Wales (x1 amendment)

Conservation of Habitats and Species Regulations 2017 (x29 amendments)

#### **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:

- 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.