ISEBROOK SCHOOL,
EASTLEIGH ROAD, KETTERING

PRELIMINARY BAT ROOST
ASSESSMENT

A Report to: Northamptonshire County Council

Report No: RT-MME-124131

Date: November 2016
REPORT VERIFICATION AND DECLARATION OF COMPLIANCE

This study has been undertaken in accordance with British Standard 42020:2013 “Biodiversity, Code of practice for planning and development”.

<table>
<thead>
<tr>
<th>Report Version</th>
<th>Date</th>
<th>Completed by:</th>
<th>Checked by:</th>
<th>Approved by:</th>
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</thead>
<tbody>
<tr>
<td>Final</td>
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</tr>
</tbody>
</table>

The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

DISCLAIMER

The contents of this report are the responsibility of Middlemarch Environmental Ltd. It should be noted that, whilst every effort is made to meet the client’s brief, no site investigation can ensure complete assessment or prediction of the natural environment.

Middlemarch Environmental Ltd accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

VALIDITY OF DATA

The findings of this study are valid for a period of 12 months from the date of survey. If works have not commenced by this date, it may be necessary to undertake an updated survey to allow any changes in the status of bats on site to be assessed, and to inform a review of the conclusions and recommendations made.
NON-TECHNICAL SUMMARY

In November 2016 Northamptonshire County Council commissioned Middlemarch Environmental Ltd to undertake a Preliminary Bat Roost Assessment at the Isebrook School in Kettering. This assessment is required to inform a planning application associated with the construction of a new school building which partially adjoins with the existing school building on site.

During the Preliminary Ecological Appraisal (Report number RT-MME-123105-01), a number of roosting features suitable for use by bats were noted on the existing school building where the new building is proposed to attach. It was therefore recommended that a Preliminary Bat Roost Assessment be completed to determine the status of these features with regard to roosting bats.

The Preliminary Bat Roost Assessment was conducted on the 22nd November 2016 by Amy Finnegan (Ecological Consultant). The focus of the survey was upon the main school building which, according to the proposed plans, will be partially adjoined to the proposed new build on the central eastern elevation. Other buildings on site will not undergo any works.

The following features were identified during the assessment of the building;

- Lifted roof edging, and;
- Gaps between the brick wall elevation and roof edging/fascia boarding.

On assessment of the roof edging it was clear that these features did not form suitable locations for use by bats for roosting. Furthermore, no evidence of usage by bats either recent or historical such as droppings or staining was noted around or under these features, and therefore the potential for these features as a suitable roosting site for bats is considered to be negligible.

On assessment of the gaps between the brick and roof edging/fascia board it was evident that these gaps extended into the void space above the one-storey classrooms. However, no bats or evidence of bats was found within this void space. Furthermore, the entrance to the void space was blocked with dense cobwebs and vegetation with no evidence of bats such as droppings etc. at the entrance point to these voids.

Recommendations:

R1  Main School Building

Overall the main school building was found to hold negligible roosting potential for bat species. Roosting potential features were fully inspected and no evidence of bats or bat usage was identified. The potential roosting features identified within the location where the proposed extension is to adjoin the existing building were fully examined and their suitability was reduced to negligible roosting potential for bat species. The survey data obtained for the site is valid for 12 months from the survey date. If development works to the surveyed structure have not commenced within this timeframe it will be essential to update the survey effort to establish if bats have colonised the building in the interim. In the unlikely event that a bat is found during demolition works all works must immediately cease and a suitably qualified ecologist should be contacted.

R2  Foraging/Commuting Bats

Bats are likely to use the hedgerow corridors on the site boundaries for foraging and commuting. Therefore, any lighting, either temporary or permanent, along the southern and eastern boundaries should be kept to a minimum and directed away from these boundary features to maintain ‘dark’ areas and corridors. The lighting strategy for any future development of the site should involve the use of low level and directional lighting, such as bollard lighting, to help to minimise light spill.
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1. INTRODUCTION

1.1 PROJECT BACKGROUND

In November 2016 Northamptonshire County Council commissioned Middlemarch Environmental Ltd to undertake a Preliminary Bat Roost Assessment at the Isebrook School in Kettering. This assessment is required to inform a planning application associated with the construction of a new school building which partially adjoins with the existing school building on site. During the Preliminary Ecological Appraisal (Report number RT-MME-123105-01), a number of roosting features suitable for use by bats were noted on the existing school building where the new building is proposed to attach on the central eastern elevation. It was therefore recommended that a Preliminary Bat Roost Assessment be completed to determine the status of these features with regard to roosting bats.

Middlemarch Environmental Ltd has previously carried out the following ecological surveys at the site:

- Preliminary Ecological Appraisal (2016): Report RT-MME-123105-01; and,

To fulfill the above brief to assess the potential for the existing building on site to support roosting bats, a Preliminary Bat Roost Assessment was undertaken on 22nd November 2016. The focus of the survey was upon the main school building which, according to the proposed plans, will be partially adjoined to the proposed new build. Other buildings on site will not undergo any works.

All UK bat species are European protected species and they are capable of being material considerations in the planning process. A summary of the legislation protecting bats is included within Appendix 1. This section also provides some brief information on the ecology of British bat species.

1.2 SITE DESCRIPTION AND CONTEXT

The site under consideration is an irregular shaped parcel of land, approximately 2.3 ha in size, which is located adjacent to Eastleigh Road in Kettering at Ordnance Survey Grid Reference SP 8810 7741.

The study area is located within a predominantly residential area on the south-eastern fringes of Kettering, a town on the north-eastern side of the county of Northamptonshire. The surrounding area is dominated by a mix of agricultural fields and residential development, interspersed with school buildings to the north and recreational grounds to the south.

The northern boundary of the study area is delineated by Eastleigh Road, beyond which are residential properties. The eastern boundary is partly delineated by a linear group of trees, beyond which are agricultural fields and the Cook’s Spinney watercourse. To the south the study area abuts Barton Road (A6003), with Wicksteed Park beyond. To the west the study area abuts school buildings and recreational grounds, beyond which is Windmill Avenue (A6098) and Tresham College.

The study area was dominated by school buildings and hardstanding, with an area of amenity grassland to the south-east and scattered trees present throughout the study area.

1.3 DOCUMENTATION PROVIDED

The conclusions and recommendations made in this report are based on information provided by the client regarding the scope of the project. Documentation made available by the client is listed in Table 1.1.

<table>
<thead>
<tr>
<th>Document Name / Drawing Number</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Layout / 91428-DB3-XX-DR-A-010</td>
<td>Darnton B3 Architecture</td>
</tr>
<tr>
<td>Proposed Drop-off and Additional Parking / 91428-DB3-XX-DR-A-180</td>
<td>Darnton B3 Architecture</td>
</tr>
</tbody>
</table>

Table 1.1: Documentation Provided by Client
2. METHODOLOGY

2.1 Desk Study

The desk study included a search for statutory nature conservation sites designated for bats within a 10 km radius of the site. As part of the Preliminary Ecological Appraisal (Report RT-MME-123105-01) an ecological desk study (which included a search for records of bats) was undertaken within a 1 km radius of the site.

The consultees for the desk study were Natural England - MAGIC website for statutory conservation sites, Northamptonshire Biodiversity Records Centre and Northants Bat Group.

Middlemarch Environmental Ltd then assimilated and reviewed the desk study data provided by these organisations. The data collected from these consultees are discussed in Chapter 3. In compliance with the terms and conditions relating to its commercial use, the full desk study data is not provided within this report.

2.2 Field Survey

In line with the specifications detailed in Bat Mitigation Guidelines (English Nature, 2004) and Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016), a Preliminary Bat Roost Assessment of the building was conducted during daylight hours. A visual assessment was undertaken to determine the presence of any Potential Roost Features (PRFs), together with a general appraisal of the suitability of the site for foraging and commuting. Table 2.1 provides examples of PRFs. Any accessible PRFs were inspected using binoculars, a torch and endoscope for evidence of possible bat presence. The building was surveyed externally and internally.

For reasons of health and safety, the survey was only undertaken in areas accessible from 3.5 m ladders.

Based on the PRF’s present, the survey area was assessed using the suitability classes detailed within Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016), as detailed in Table 2.2.

<table>
<thead>
<tr>
<th>Example of Potential Roost Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Externally</td>
</tr>
<tr>
<td>- Access through window panes, doors and walls;</td>
</tr>
<tr>
<td>- behind peeling paintwork or lifted rendering;</td>
</tr>
<tr>
<td>- behind hanging tiles;</td>
</tr>
<tr>
<td>- weatherboarding;</td>
</tr>
<tr>
<td>- eaves;</td>
</tr>
<tr>
<td>- soffit boxes;</td>
</tr>
<tr>
<td>- fascias;</td>
</tr>
<tr>
<td>- lead flashing;</td>
</tr>
<tr>
<td>- gaps under felt (even including those of flat roofs);</td>
</tr>
<tr>
<td>- under tiles/slates;</td>
</tr>
<tr>
<td>- existing bat and bird boxes; and</td>
</tr>
<tr>
<td>- any gaps in brickwork or stonework permitting access into access to cavity- or rubble-filled walls.</td>
</tr>
<tr>
<td>Internally</td>
</tr>
<tr>
<td>- behind wooden panelling;</td>
</tr>
<tr>
<td>- in lintels above doors and windows;</td>
</tr>
<tr>
<td>- behind window shutters and curtains;</td>
</tr>
<tr>
<td>- behind pictures, posters, furniture, peeling paintwork;</td>
</tr>
<tr>
<td>- peeling wallpaper, lifted plaster and boarded-up windows;</td>
</tr>
<tr>
<td>- inside cupboards and in chimneys accessible from fireplaces.</td>
</tr>
<tr>
<td>- within attic voids:</td>
</tr>
<tr>
<td>- the top of gable end or dividing walls;</td>
</tr>
<tr>
<td>- ridge and hip beams and other roof beams;</td>
</tr>
<tr>
<td>- mortise and tenon joints;</td>
</tr>
<tr>
<td>- all beams (free-hanging bats);</td>
</tr>
<tr>
<td>- the junction of roof timbers, especially where ridge and hip beams meet;</td>
</tr>
<tr>
<td>- behind purlins;</td>
</tr>
<tr>
<td>- between tiles and the roof lining; and</td>
</tr>
<tr>
<td>- under flat felt roofs.</td>
</tr>
</tbody>
</table>

Table 2.1: Potential Roost Features (Adapted from Collins, 2016)
<table>
<thead>
<tr>
<th>Suitability</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>A structure 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.</td>
</tr>
<tr>
<td>Moderate</td>
<td>A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).</td>
</tr>
<tr>
<td>Low</td>
<td>A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e., unlikely to be suitable for maternity or hibernation).</td>
</tr>
<tr>
<td>Negligible</td>
<td>Negligible habitat features on site likely to be used by roosting bats.</td>
</tr>
</tbody>
</table>

Table 2.2: Classification of Structures with Bat Potential (Adapted from Collins, 2016)
3. **DESK STUDY**

3.1 **STATUTORY NATURE CONSERVATION SITES**
The site is not located within 10 km of any statutory nature conservation sites designated for the presence of bats.

3.2 **SPECIES RECORDS**
Records of bat species within a 1 km radius of the survey area provided by the local record centre are summarised in Table 3.1. The data search was carried out in October 2016. It should be noted that the absence of records should not be taken as confirmation that a species is absent from the search area.

<table>
<thead>
<tr>
<th>Species</th>
<th>No. of Records</th>
<th>Most Recent Record</th>
<th>Proximity of Nearest Record to Study Area</th>
<th>Species of Principal Importance?</th>
<th>Legislation / Conservation Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pipistrelle</td>
<td>23</td>
<td>2009</td>
<td>Potentially within 1 km*</td>
<td>#</td>
<td>ECH 4, WCA 5, WCA 6</td>
</tr>
<tr>
<td>Pipistrellus sp.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Common pipistrelle</td>
<td>5</td>
<td>2005</td>
<td>Potentially within 1 km*</td>
<td>-</td>
<td>ECH 4, WCA 5, WCA 6</td>
</tr>
<tr>
<td>Pipistrellus pipistrellus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brown long-eared bat</td>
<td>3</td>
<td>2008</td>
<td>Potentially within 1 km*</td>
<td>✓</td>
<td>ECH 4, WCA 5, WCA 6</td>
</tr>
<tr>
<td>Plecotus auritus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daubenton’s bat</td>
<td>2</td>
<td>2001</td>
<td>Potentially within 1 km*</td>
<td>-</td>
<td>ECH 4, WCA 5, WCA 6</td>
</tr>
<tr>
<td>Myotis daubentonii</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natterer’s bat</td>
<td>1</td>
<td>2010</td>
<td>Potentially within 1 km*</td>
<td>-</td>
<td>ECH 4, WCA 5, WCA 6</td>
</tr>
<tr>
<td>Myotis nattereri</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whiskered bat</td>
<td>1</td>
<td>2009</td>
<td>Potentially within 1 km*</td>
<td>-</td>
<td>ECH 4, WCA 5, WCA 6</td>
</tr>
<tr>
<td>Myotis mystacinus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noctule</td>
<td>1</td>
<td>2005</td>
<td>Potentially within 1 km*</td>
<td>✓</td>
<td>ECH 4, WCA 5, WCA 6</td>
</tr>
<tr>
<td>Nyctalus noctula</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Key:**
#: Dependent on species.
*: Grid reference provided was four figures only.


WCA 5: Schedule 5 of Wildlife and Countryside Act 1981 (as amended). Protected animals (other than birds).
WCA 5 S9(5): Schedule 5 Section 9(5) of Wildlife and Countryside Act 1981 (as amended). Protected animals (other than birds). Protection limited to selling, offering for sale, processing or transporting for purpose of sale, or advertising for sale, any live or dead animal, or any part of, or anything derived from, such animal.
WCA 6: Schedule 6 of Wildlife and Countryside Act 1981 (as amended). Animals which may not be killed or taken by certain methods.

Note. These tables do not include reference to the Berne Convention (Convention on the Conservation of European Wildlife and Natural Habitats), the Bonn Convention on the Conservation of Migratory Species of Wild Animals or the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Table 3.2: Summary of Protected/Notable Species Records Within 1 km of Survey Area.
4. SURVEY RESULTS

4.1 INTRODUCTION

The Preliminary Bat Roost Assessment was conducted on 22nd November 2016 by Amy Finnegan (Ecological Consultant). Weather conditions were recorded and are presented in Table 4.1.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature (°C)</td>
<td>11</td>
</tr>
<tr>
<td>Cloud Cover (%)</td>
<td>100</td>
</tr>
<tr>
<td>Precipitation</td>
<td>Dry</td>
</tr>
<tr>
<td>Wind Speed (Beaufort)</td>
<td>F2-3</td>
</tr>
</tbody>
</table>

Table 4.1: Weather Conditions During the Preliminary Bat Roost Assessment

4.2 CONSTRAINTS

No constraints were experienced during the assessment of the building on site. All areas were accessible to survey. However, the void space above the classrooms could not be completely assessed using the endoscope as the space extended beyond the length of the endoscope. However, all entrances to this space were blocked indicating nothing has accessed this space recently, and therefore eliminating this factor as a constraint.

4.3 SURVEY RESULTS

The site consisted of a number of buildings including a main school building, new school annex building, prefabricated classrooms, a caretaker’s house and a number of sheds. The focus of the survey was upon the main school building which, according to the proposed plans, will be partially adjoined to the proposed new build via a connecting corridor on the central eastern elevation. The other buildings on site will not undergo any works.

*External Assessment*

The main school building was a one and two storey building with a large hall. It was of brick construction with plastic fascia’s, soffit boxing, flat roofing lined with felt, UPVC windows and doors. Overall, the majority of the roofing areas and brick elevations were found to be in good condition with no features noted.

However, at the location where the new build is to join with the existing classroom (Plate 4.1) several lifted areas of roof edging were noted (Plate 4.2) and several gaps were also noted between the brickwork at the roof edging/fascia boarding (Plate 4.3).

On assessment of the lifted roof edging it was noted that these lifted areas did not lead into any suitable roosting locations of bats. No evidence of current or historical bat usage was found around or within these features such as droppings, urine staining or scratch marks, and therefore they were identified to be of negligible potential for bat species.

On assessment of the gaps between the brick elevation and roof edging/fascia boarding it was clear that these features extended behind the roof edging/fascia board into the false ceiling void above the one-storey classroom. The void extended back beyond the reach of the endoscope and contained leaf litter and light cobwebs. Inside the void no evidence of historical or recent bat activity such as droppings or urine staining or scratch marks was noted.

At the time of the survey the entrance points to the void space were clogged up with dense heavily dusted cobwebs and dead vegetation which suggests that these features have not been accessible to bats for a long period, and that bats have not utilised these features or entered the void for several months, and that they are no longer potential points of access/ egress for bat species as they are permanently blocked.
Plate 4.1: Central eastern school elevation where new build will join via corridor.

Plate 4.2: Lifted roof edging.

Plate 4.3: Gaps noted between the brick work and roof edging/fascia boarding.

The areas of lifted roof edging and fascia board as well as the void behind these entrance points were fully inspected with a torch and endoscope and dense heavily dusted cobwebs were found to fill the access points into any void spaces. No evidence of roosting bats, e.g. droppings, urine staining, feeding remains or scratch marks, was recorded within or around these features.

**Internal Assessment**

Internal areas consisted of false ceiling and plaster board which appeared to be in good condition. On assessment of the void space externally no evidence of bats was noted in areas which were accessible to the endoscope. No other access points were noted which lead into the void space.

No evidence of bats, e.g. droppings, urine staining, feeding remains or scratch marks, was recorded during the internal inspection of the building. The endoscope could not reach all areas of the void space, however all access points into this space were blocked with vegetation or heavily dusted cobwebs which suggests fauna have not accessed this space for several months.

4.4 **SITE AND SURROUNDING HABITATS**

The site contains an open area of grassland, scattered scrub, hedgerows, allotments and scattered trees which may provide foraging ground for bats. The scattered trees along the east and hedgerows along the south and east provide commuting corridors for bats around the southern and eastern portion of the site. These features link up with continuing habitats to the east adjoining with Wicksteed park and water meadows, with good connectivity from the site to Wicksteed park.
The wider landscape consists of ponds, wetland, arable land, scattered trees and woodland which provide commuting and roosting locations for bats. Wicksteed Watermeadows is located adjacent to the eastern boundary of the site, Wicksteed Park located 30 m south consisting of grassland, meadows, standing water and wetland. Ise Marsh and Cook’s Spinney located 75 m north of the survey area providing foraging and potential roosting areas for bats.

Habitats within 1 km of the site suitable for roosting, commuting and foraging include:

- Residential houses and associated gardens;
- Farm houses and associated agricultural buildings;
- Running and standing water bodies;
- Pockets of woodland;
- Agricultural fields with tree and hedge lined boundaries;
- Churches, schools, hospitals and associated grounds;
- Golf courses with associated open grassland habitats, water bodies; and,
- Railway lines with vegetated banks.
5. DISCUSSION AND CONCLUSIONS

5.1 SUMMARY OF PROPOSALS
This assessment is required to inform a planning application associated with the construction of a new school building which partially adjoins with the existing school building on the central eastern elevation.

5.2 ASSESSMENT OF BUILDINGS
The focus of the survey was upon the main school building which, according to the proposed plans, will be partially adjoined to the proposed new build via a connecting corridor. Other buildings on site will not undergo any works.

The following features were identified during the assessment of the building;
- Several areas of lifted roof edging; and,
- Several gaps between the brick elevation and roof edging/fascia boarding.

On assessment of the roof edging, it was clear that these did not form suitable features for use by bats for roosting. Furthermore, no evidence of bats such as droppings or staining was noted around these features, and were therefore found to hold negligible potential as roosting locations for bat species.

On assessment of the gaps between the brick elevation and roof edging boarding, these features it was evident that these gaps extended into the void space above the one-storey classroom. However, no bats or evidence of bats was found in this void space. Furthermore, externally the entrance to these areas were blocked with dense heavily dusted cobwebs and vegetation, removing the potential of these locations as points of access/egress and therefore reducing the potential roosting suitability of the voids behind to negligible. No evidence of bats such as droppings, urine staining or scratch marks were found at the entrance point to these voids.

It is therefore determined that main school building overall was found to be of negligible roosting potential for bat species. Specifically, in the location where the extension is to be adjoined to the existing building on the eastern side, the features identified as potential roosting locations for bat species, were found to be of negligible suitability. The gaps identified behind the lifted roof edging were found to be unsuitable upon examination, and the gaps between the brick elevation and roof edging/fascia board were found to be blocked with dense heavily dusted cobwebs and leaf litter.

5.3 POTENTIAL IMPACTS ON BATS
Proposed plans indicate that trees/vegetation are to be removed at the southern end of the site and some scattered trees to the north. This includes the removal of young trees and a small section of hedgerow which will not adversely impact upon commuting bats as these habitats are well represented within the near surrounding landscape. The remaining hedgerows and trees are to be retained.
6. RECOMMENDATIONS

All recommendations provided in this section are based on Middlemarch Environmental Ltd’s current understanding of the site proposals, correct at the time the report was compiled. Should the proposals alter, the conclusions and recommendations made in the report should be reviewed to ensure that they remain appropriate.

R1 Main School Building
Overall the main school building was found to hold negligible roosting potential for bat species. Roosting potential features were fully inspected and no evidence of bats or bat usage was identified. The potential roosting features identified within the location where the proposed extension is to adjoin the existing building were fully examined and their suitability was reduced to negligible roosting potential for bat species. The survey data obtained for the site is valid for 12 months from the survey date. If development works to the surveyed structure have not commenced within this timeframe it will be essential to update the survey effort to establish if bats have colonised the building in the interim. In the unlikely event that a bat is found during demolition works all works must immediately cease and a suitably qualified ecologist should be contacted.

R2 Foraging/Commuting Bats
Bats are likely to use the hedgerow corridors on the site boundaries for foraging and commuting. Therefore, any lighting, either temporary or permanent, along the southern and eastern boundaries should be kept to a minimum and directed away from these boundary features to maintain ‘dark’ areas and corridors. The lighting strategy for any future development of the site should involve the use of low level and directional lighting, such as bollard lighting, to help to minimise light spill.
REFERENCES AND BIBLIOGRAPHY


APPENDIX 1

LEGISLATION

Bats and the places they use for shelter or protection (i.e. roosts) receive European protection under The Conservation of Habitats and Species Regulations 2010, as amended (Habitats Regulations 2010, as amended). They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, as amended. This protection means that bats, and the places they use for shelter or protection, are capable of being a material consideration in the planning process.

Regulation 41 of the Habitats Regulations 2010 (as amended), states that a person commits an offence if they:

- deliberately capture, injure or kill a bat;
- deliberately disturb bats; or
- damage or destroy a bat roost (breeding site or resting place).

Disturbance of animals includes in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong.

It is an offence under the Habitats Regulations 2010 (as amended) for any person to have in his possession, or control, to transport, to sell or exchange or to offer for sale, any live or dead bats, part of a bat or anything derived from bats, which has been unlawfully taken from the wild.

Whilst broadly similar to the above legislation, the WCA 1981 (as amended) differs in the following ways:

- Section 9(1) of the WCA makes it an offence to intentionally kill, injure or take any protected species.
- Section 9(4)(a) of the WCA makes it an offence to intentionally or recklessly* damage or destroy, or obstruct access to, any structure or place which a protected species uses for shelter or protection.
- Section 9(4)(b) of the WCA makes it an offence to intentionally or recklessly* disturb any protected species while it is occupying a structure or place which it uses for shelter or protection.

*Reckless offences were added by the Countryside and Rights of Way (CRoW) Act 2000.

As bats re-use the same roosts (breeding site or resting place) after periods of vacancy, legal opinion is that roosts are protected whether or not bats are present.

The following bat species are Species of Principal Importance for Nature Conservation in England: barbastelle bat *Barbastella barbastellus*, Bechstein’s bat *Myotis bechsteinii*, noctule *Nyctalus noctula*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared bat *Plecotus auritus*, greater horseshoe bat *Rhinolophus ferrumequinum* and lesser horseshoe bat *Rhinolophus hipposideros*.

All species which occur within the county are considered to be priority species on the local BAP.

The reader should refer to the original legislation for the definitive interpretation.
ECOLOGY
At present, 18 species of bats are known to live within the United Kingdom, of which 17 species are confirmed as breeding. All UK bat species are classed as insectivorous, feeding on a variety of invertebrates including midges, mosquitoes, lacewings, moths, beetles and small spiders.

Bats will roost within a variety of different roosting locations, included houses, farm buildings, churches, bridges, walls, trees, culverts, caves and tunnels. At different times of the year the bats roosting requirements alter and they can have different roosting locations for maternity roosts, mating roosts and hibernation roosts. Certain bat species will also change roosts throughout the bat activity season with the bat colony using the site to roost for a few days, abandoning the roost and then returning a few days or weeks later. This change can be for a variety of reasons including climatic conditions and prey availability. Bats are known live for several years and if the climatic conditions are unfavourable at a particular roost, they may abandon it for a number of years, before returning when conditions change. Due to the matriarchal nature of bat colonies, the locations of these roosts can be passed down through the generations.

Bats usually start to come out of hibernation in March and early April (weather dependent), when they start to forage and replenish the body weight lost during the hibernation period. The female bats then start to congregate together in maternity roosts prior to giving birth and a single baby is born in June or July. The female then works hard to feed her young so that they can become independent and of a sufficient weight to survive the winter before the weather gets too cold and invertebrate activity reduces. Males generally live solitary lives, or in small groups with other males, although in some species the males can be found living with the females all year. The mating season begins in the autumn. During the winter bats hibernate in safe locations which provide relatively constant conditions, although they may venture outside to forage on warmer winter nights.