

**WELCOMB STREET, OPENSHAW,
MANCHESTER**

**DUSK EMERGENCE AND
DAWN RE-ENTRY BAT SURVEYS**

A Report to: RPS Consulting

Report No: RT-MME-158308

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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”.

Report Version	Date	Completed by:	Checked by:	Approved by:
Final	06/10/2022	Sarah Simpson BSc (Hons) (Ecological Project Officer) and Charlotte Richardson MSc (Senior Ecological Consultant)	Jemma Gaskin BSc (Hons) MCIEEM (Principal Ecological Consultant)	Tom Docker CEcol MCIEEM (Managing Director)

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, an updated site visit should be carried out by a suitably qualified ecologist to assess any changes in the habitats present on site, and to inform a review of the conclusions and recommendations made.

NON-TECHNICAL SUMMARY

In July 2022, RPS Consulting commissioned Middlemarch to undertake Dusk Emergence and Dawn Re-entry Bat Surveys at the site of a proposed development at Welcomb Street, Openshaw, Greater Manchester. This assessment is required to inform a planning application associated with proposals for the re-development of the site.

Dusk emergence and dawn re-entry surveys were undertaken between 3rd August 2022 and 2nd September 2022.

Buildings B1 and B5 were subject to assessment during the dusk emergence survey. One bat species was recorded during the dusk emergence survey, which was common pipistrelle. Occasional common pipistrelle passes were detected along the scrub line to the south of Building B5, but bat activity elsewhere on site was limited. No bats were seen to emerge from either of the buildings surveyed during the dusk emergence survey.

Building B5 was subject to assessment during the dawn re-entry surveys. Two bat species were recorded during the dawn surveys, and these were common pipistrelle and noctule. During the first dawn survey, several common pipistrelle passes were detected along the northern and eastern elevations of Building B5, whilst some foraging was also noted along the scrub line to the south. During the second dawn survey, a single noctule bat pass was detected, but no other species were recorded on site. No bats were seen to re-enter building B5 during the dawn surveys.

Given that no bats emerged from or re-entered either of the buildings surveyed (i.e. B1 and B5) it can be determined that no bat roosts were present in these buildings at the time of survey. Given that only a small amount of bat activity was recorded on site, foraging and commuting bats are also unlikely to be significantly impacted by any works at the site, providing that appropriate lighting be incorporated into the proposals.

Following the results of the dusk emergence and dawn re-entry surveys, the following recommendations have been made:

R1 Buildings B1 and B5

Buildings B1 and B2 have been subject to a full suite of activity surveys in line with Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016), and no bat roosts were identified. The survey data obtained for the site is valid for 12 months from the survey date.

R2 Habitat Enhancement

The proposals should aim to enhance the site for bats. Bat boxes could be installed to provide roosting habitat for species such as pipistrelle and the planting of species which attract night flying insects is also encouraged, as this will be of value to foraging bats.

R3 Lighting: In accordance with best practice guidance relating to lighting and biodiversity, any new lighting should be carefully designed to minimise potential disturbance and fragmentation impacts on sensitive receptors, such as bat species. Examples of good practice are provided in Chapter 6.

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

In July 2022, RPS Consulting commissioned Middlemarch to undertake Dusk Emergence and Dawn Re-entry Bat Surveys at the site of a proposed development at Welcomb Street, Openshaw, Greater Manchester. This assessment is required to inform a planning application associated with proposals for the re-development of the site.

Middlemarch has previously carried out the following surveys for RPS Consulting at this site:

- Preliminary Arboricultural Assessment (Report: RT-MME-157730-01);
- Arboricultural Impact Assessment (Report: RT-MME-157730-02);
- Preliminary Ecological Appraisal (Report: RT-MME-157730-03); and
- Preliminary Roost Assessment (Report: RT-MME-157730-04).

A Preliminary Bat Roost Assessment was undertaken at this site on 31st May 2022 (Report: RT-MME-157730-04). During this survey, nine buildings were inspected externally and internally [where possible] for potential roost features and evidence of roosting bats. The large brick building (B5) to the south of the site was found to have high bat roost potential due to a number of potential roost features and possible dark internal voids. Building B1 to the north of the site was considered to have low bat roost potential due to the presence of a few low value features on the southern elevation. The remaining buildings (B2, B3, B4, B6, B7, B8 and B9) were all considered to have negligible bat roost potential.

As Buildings B5 and B1 were considered to have high and low potential for roosting bats, respectively, dusk emergence and dawn re-entry bat surveys were recommended. This report details the results of the surveys undertaken between 3rd August 2022 and 2nd September 2022.

All UK bat species are legally 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 was located within an urban area of Openshaw, Greater Manchester, at Ordnance Survey Grid Reference SJ 8788 9721. It was approximately 1.6 ha in area and contained a number of industrial type buildings that had been used as part of a further education campus. These were surrounded by hardstanding with small areas of landscaping around the access road to the north.

The site was accessed from Welcomb Street to the north. A brick wall and fence ran along the southern boundary with a bank of dense scrub behind whilst further fencing demarcated the other boundaries. The site was surrounded by industrial development including an asphalt plant to the south and warehousing/offices to the north, east and west. A small pocket of semi-natural woodland was present immediately west of the site.

The wider landscape was dominated by industrial and residential areas with small areas of greenspace scattered throughout. A railway line with vegetated boundaries ran 80 m south of the site and a small park was located approximately 380 m north.

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.

Document Name / Drawing Number	Author
Welcomb Street: Construction Skills Site Plan	Jenkins Design Services

Table 1.1: Documentation Provided by Client

2. METHODOLOGY

2.1 DESK STUDY

As part of the Preliminary Ecological Appraisal (Report RT-MME-157730-03) 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 - MAG/C website for statutory conservation sites and Greater Manchester Ecology Unit (GMEU).

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

The desk study included a search for statutory nature conservation sites designated for bats within a 10 km radius of the site.

2.2 FIELD SURVEYS

2.2.1 Overview of Dusk Emergence and Dawn Re-entry Surveys

Building B1 was classed as having low potential and Building B5 was classed as having high potential to support roosting bats during the daytime survey. In line with Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016), three bat surveys were carried out consisting of two dawn re-entry surveys and one dusk emergence survey on the building with high potential and one survey, comprising a dawn re-entry survey was completed for the low potential building. Bat surveys were carried out consisting of one dusk emergence bat survey and two dawn re-entry bat surveys. The aim of these surveys was to detect whether bats are roosting within the buildings, and to enable a profile of site utilisation by bats to be compiled.

2.2.2 Dusk Emergence Bat Survey

In line with the specifications detailed in Bat Surveys: Good Practice Guidelines (Collins, 2016), the dusk survey commenced 20 minutes prior to sunset and continued until 120 minutes after sunset. The dusk emergence survey was conducted using electronic bat detectors (Echo Meter Touch 2 and Bat Box Duet with associated recording devices) to facilitate the detection of bats and to aid in the determination of species of bat using the site. Subsequent computer analysis of recordings allowed all species of bat using the site to be identified.

2.2.3 Dawn Re-Entry Bat Surveys

Bats swarm at their roost site 10-90 minutes prior to entering the roost at dawn (Mitchell-Jones & McLeish, 2004). Surveying for dawn swarming by bats is an efficient way of detecting bat roosts. In line with the specifications detailed by Bat Surveys: Good Practice Guidelines (Collins, 2016) the dawn surveys commenced 120 minutes prior to sunrise and continued until 15 minutes after sunrise. To facilitate the detection of bats and to aid in the determination of species of bat using the site, the dawn surveys were conducted using electronic bat detectors (Echo Meter Touch 2 and Bat Box Duet with associated recording devices). Computer analysis of bat detector information collected was utilised to identify all species recorded on the site.

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

The data search was carried out on 23rd May 2022 by Greater Manchester Ecology Unit (GMEU). Records of bat species within a 1km radius of the survey area provided by the consultee are summarised in Table 3.1. It should be noted that the absence of records should not be taken as confirmation that a species is absent from the search area.

Species	No. of Records	Most Recent Record	Proximity of Nearest Record to Study Area	Species of Principal Importance?	Legislation / Conservation Status
Common pipistrelle <i>Pipistrellus pipistrellus</i>	8	2015	680 m west *	-	ECH 4, WCA 5, WCA 6
Pipistrelle <i>Pipistrellus</i> sp.	2	2016	800 m south-east	#	ECH 4, WCA 5, WCA 6
Key: #: Dependent on species. *: Grid reference provided was six figures and as such, the record may be located within 100 m of the study site. ECH 4: Annex IV of the European Communities Council Directive on the Conservation of Natural Habitats and Wild Fauna and Flora. Animal and plant species of community interest in need of strict protection. WCA 5: Schedule 5 of Wildlife and Countryside Act 1981 (as amended). Protected animals (other than birds). WCA 6: Schedule 6 of Wildlife and Countryside Act 1981 (as amended). Animals which may not be killed or taken by certain methods. Species of Principal Importance: Species of Principal Importance for Nature Conservation in England. Local: Species is listed as a priority on the Greater Manchester Biodiversity Action Plan.					

Table 3.1: Bat Species Records Within 1 km of Survey Area

4. SURVEY RESULTS

The dusk emergence/dawn re-entry bat surveys were completed between 3rd August 2022 and 2nd September 2022 by the following members of staff:

- Ellie Rickman MSc, MCIEEM (Principal Ecological Consultant and Class 17 Natural England Licenced Bat Surveyor – Licence Ref: 2016-22513-CLS-CLS);
- Charlotte Richardson MSc, ACIEEM (Senior Ecological Consultant and Class 17 Natural England Licenced Bat Surveyor – Licence Ref: 2015-9325-CLS-CLS);
- Shona Sutherland BSc (Hons) (Ecological Consultant);
- Amy Carter (Ecological Project Officer);
- Andrew Farmer (Ecological Project Officer); and,
- Geoff Nickolds (Ecological Project Officer).

4.1 FIRST DAWN RE-ENTRY SURVEY

The first dawn re-entry survey was undertaken on 3rd August 2022 and covered Building B5. The weather conditions recorded at the time of the survey are detailed in Table 4.1 and the results of the survey are illustrated on Figure 4.1.

Parameter	Conditions	
	Start	Finish
Temperature (°C)	19	18
Cloud Cover (%)	40	30
Precipitation	Dry	Dry
Wind Speed (Beaufort)	F2-3	F2

Table 4.1: Weather Conditions During First Dawn Survey



Figure 4.1: Results from the First Dawn Re-entry Survey (03.08.22)

The first dawn re-entry survey commenced 120 minutes prior to sunrise and continued until 15 minutes after sunset. Sunrise was at 05:28 hrs (BBC Weather Centre Data for Manchester). One species of bat, common pipistrelle *Pipistrellus pipistrellus* was recorded during the survey.

Common pipistrelle

The first common pipistrelle was detected at 04:34 hrs (54 minutes prior to sunrise). This bat flew south to north between Buildings B5 and B6. At 04:35 hrs, another common pipistrelle was recorded commuting along the vegetated corridor to the south of B5. At 04:44 hrs, a common pipistrelle bat was recorded commuting along the north side of Building B5 before flying south along the east elevation. At 04:36 hrs, two further bats were seen interacting with one another to the west of building B5. A further bat was detected at 04:51 hrs, but no visual contact was made.

No bats were recorded re-entering Building B5 and no other species of bat were detected or observed during this survey. Analysis of the sound recordings did not identify any further species of bat.

4.2 DUSK EMERGENCE SURVEY

The dusk emergence bat survey was undertaken on 15th August 2022 and covered Buildings B1 and B5. The weather conditions recorded at the time of the survey are detailed in Table 4.2 and the results of the survey are illustrated on Figure 4.2.

Parameter	Conditions	
	Start	Finish
Temperature (°C)	21	20
Cloud Cover (%)	100	100
Precipitation	F1	F1
Wind Speed (Beaufort)	Light rain	Light rain

Table 4.2: Weather Conditions During First Dusk Emergence Survey



Figure 4.2: Results from Dusk Emergence Survey (15.08.22)

The dusk emergence survey commenced 20 minutes prior to sunset and continued until 120 minutes after sunset. Sunset was at 20:37 hrs (BBC Weather Centre Data for Manchester). One species of bat, common pipistrelle, was recorded during the survey.

Common pipistrelle

The first common pipistrelle bat was recorded at 21:02 hrs (25 minutes after sunset), with a further detected at 21:15 hrs. No visual contact was made with these bats, but they did not emerge from either of the

buildings. Another common pipistrelle was observed making faint calls along the scrub line to the south of Building B5 between 21:22 hrs and 21:24 hrs. No further bats were detected throughout the remainder of the survey.

No bats were recorded emerging from Building B1 or B5 and no other species of bat were detected or observed during this survey. Analysis of the sound recordings did not detect any further species of bat.

4.3 SECOND DAWN RE-ENTRY SURVEY

The second dawn re-entry survey was undertaken on 2nd September 2022 and covered Building B5. The weather conditions recorded at the time of the survey are detailed in Table 4.3.

Parameter	Conditions	
	Start	Finish
Temperature (°C)	14	13
Cloud Cover (%)	60	60
Precipitation	Dry	Dry
Wind Speed (Beaufort)	F0	F0

Table 4.3: Weather Conditions During Dawn Re-entry Survey

The dawn re-entry survey commenced 120 minutes prior to sunrise and continued until 15 minutes after sunrise. Sunrise was at 06:20 hrs (BBC Weather Centre Data for Manchester). One species of bat, Noctule *Nyctalus noctula* was recording during the survey.

Noctule

At 05:43 hrs, a noctule was detected but not observed. No further bats were detected.

No bats were recorded re-entering Building B5 and no other species of bat were detected or observed during this survey. Analysis of the sound recordings did not detect any further species of bat.

5. DISCUSSION AND CONCLUSIONS

5.1 DISCUSSION

5.1.1 Summary of Proposals

The site is proposed to be re-developed; however, precise details are not currently known. Therefore, a precautionary approach has been adopted when discussing the potential for impacting nature conservation sites and which habitats /species are notable considerations. The discussion and recommendations made in this report should be reviewed and amended, where appropriate, once the proposals are finalised.

5.1.2 Summary of Dusk Emergence and Dawn Re-entry Surveys

Dusk Emergence Survey

Buildings B1 and B5 were subject to assessment during this survey. One bat species was recorded during the dusk emergence survey, which was common pipistrelle. Occasional common pipistrelle passes were detected along the scrub line to the south of Building B5, but bat activity elsewhere on site was limited. No bats were seen to emerge from either of the buildings surveyed during the dusk emergence survey.

Dawn Re-entry Survey

Building B5 was subject to assessment during the dawn re-entry surveys. Two bat species were recorded during the dawn surveys, and these were common pipistrelle and noctule. During the first dawn survey, several common pipistrelle passes were detected along the northern and eastern elevations of Building B5, whilst some foraging was also noted along the scrub line to the south. During the second dawn survey, a single noctule bat pass was detected, but no other species were recorded on site. No bats were seen to re-enter building B5 during the dawn surveys.

5.2 CONCLUSIONS

Given that no bats emerged from or re-entered either of the buildings surveyed (i.e. B1 and B5) it can be determined that no bat roosts were present in these buildings at the time of survey. Given that only a small amount of bat activity was recorded on site, foraging and commuting bats are also unlikely to be significantly impacted by any works at the site, providing that appropriate lighting be incorporated into the proposals. A recommendation in relation to this has been made in Chapter 6.

6. RECOMMENDATIONS

All recommendations provided in this section are based on Middlemarch'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 Buildings B1 and B5

Buildings B1 and B2 have been subject to a full suite of activity surveys in line with Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016), and no bat roosts were identified. The survey data obtained for the site is valid for 12 months from the survey date. If development works to the surveyed building have not commenced within this timeframe it will be essential to update the survey effort to establish if bats have colonised the buildings in the interim. Updated Preliminary Bat Roost Assessments can be undertaken at any time of year. Updated surveys requiring nocturnal or dawn assessment will need to adhere to the Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016) with the surveys undertaken between April and September inclusive. In the unlikely event that a bat is found during site works all works in that area must immediately cease and a suitably qualified ecologist should be contacted.

R2 Habitat Enhancement

In line with the National Planning Policy Framework, the development should aim to enhance the site for bats. Landscaping should include unlit, vegetated boundaries to the site to allow bats to continue to commute around the site. Bat boxes could be installed to provide roosting habitat for species such as pipistrelle. In general, bats seek warm places and for this reason boxes should be located where they will receive full/partial sun, although installing boxes in a variety of orientations will provide a range of climatic conditions. Position boxes at least 4 m above ground to prevent disturbance from people and/or predators. The planting of species which attract night flying insects is encouraged as this will be of value to foraging bats, for example: evening primrose *Oenothera biennis*, goldenrod *Solidago virgaurea* and honeysuckle *Lonicera periclymenum*.

R3 Lighting: In accordance with best practice guidance relating to lighting and biodiversity (Miles *et al*, 2018¹; Gunnell *et al*, 2012²), any new lighting should be carefully designed to minimise potential disturbance and fragmentation impacts on sensitive receptors, such as bat species. Examples of good practice include:

- Avoiding the installation of new lighting in proximity to key ecological features, such as boundary vegetation.
- Using modern LED fittings rather than metal halide or sodium fittings, as modern LEDs emit negligible UV radiation.
- The use of directional lighting to reduce light spill, e.g. by installing bespoke fittings or using hoods or shields. For example, downlighting can be used to illuminate features such as footpaths whilst reducing the horizontal and vertical spill of light.
- Where the use of bollard lighting is proposed, columns should be designed to reduce horizontal light spill.
- Implementing controls to ensure lighting is only active when needed, e.g. the use of timers or motion sensors.
- Use of floor surface materials with low reflective quality. This will ensure that bats using the site and surrounding area are not affected by reflected illumination.

¹ Miles, J., Ferguson, J., Smith, N. and Fox, H. (2018) *Bats and artificial lighting in the UK. Bats and the Built Environment Series*. Bat Conservation Trust and Institution of Lighting Professionals.

² Gunnell, K., Grant, G. and Williams, C. (2012) *Landscape and urban design for bats and biodiversity*. Bat Conservation Trust.

REFERENCES AND BIBLIOGRAPHY

- Altringham, J (2003). *British Bats*. New Naturalist. HarperCollins.
- Collins, J. (ed). (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Ed.)*. The Bat Conservation Trust, London.
- English Nature (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.
- Gunnell, K., Grant, G. and Williams, C. (2012) *Landscape and urban design for bats and biodiversity*. Bat Conservation Trust.
- Joint Nature Conservation Committee (2012). *UK Post-2010 Biodiversity Framework*. Available: http://jncc.defra.gov.uk/pdf/UK_Post2010_Bio-Fwork.pdf
- Jones, K and Walsh, A (2006). *A Guide to British Bats*. The Mammal Society, London.
- Middlemarch Environmental (2022). *Welcomb Street, Openshaw, Greater Manchester - Preliminary Arboricultural Assessment* (Report: RT-MME-157730-01).
- Middlemarch Environmental (2022). *Welcomb Street, Openshaw, Greater Manchester - Arboricultural Impact Assessment* (Report: RT-MME-157730-02).
- Middlemarch Environmental (2022). *Welcomb Street, Openshaw, Greater Manchester - Preliminary Ecological Appraisal* (Report: RT-MME-157730-03).
- Middlemarch Environmental (2022). *Welcomb Street, Openshaw, Greater Manchester - Preliminary Roost Assessment* (Report: RT-MME-157730-04).
- Miles, J., Ferguson, J., Smith, N. and Fox, H. (2018) *Bats and artificial lighting in the UK. Bats and the Built Environment Series*. Bat Conservation Trust and Institution of Lighting Professionals.
- Ministry of Housing, Communities and Local Government (2021). *National Planning Policy Framework*. Available: <https://www.gov.uk/government/publications/national-planning-policy-framework--2>
- Mitchell-Jones, A.J. & McLeish, A.P. (2004). *The Bat Workers' Manual (3rd Ed.)*. JNCC, Peterborough.

APPENDIX 1

LEGISLATION

Bats and the places they use for shelter or protection (i.e. roosts) receive legal protection under the Conservation of Habitats and Species Regulations 2017 (Habitats Regulations 2017) and the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019 (Habitats Regulations 2019). 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 2017, 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 2017 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.

Changes have been made to parts of the Habitats Regulations 2017 so that they operate effectively from 1st January 2021. The changes are made by the Habitats Regulations 2019, which transfer functions from the European Commission to the appropriate authorities in England and Wales.

All other processes or terms in the 2017 Regulations remain unchanged and existing guidance is still relevant.

The obligations of a competent authority in the 2017 Regulations for the protection of species do not change. A competent authority is a public body, statutory undertaker, minister or department of government, or anyone holding public office.

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 reader should refer to the original legislation for the definitive interpretation.

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*. Species of Principal Importance for Nature Conservation in England are material considerations in the planning process. The list of species is derived from Section 41 list of the Natural Environmental and Rural Communities (NERC) Act 2006.

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.