

BAT SURVEY & REPORT
at
Field Head
Lidget Street
Huddersfield
West Yorkshire
HD3 3JB

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1. Background Information on UK Bats

1.1 Bat Ecology

- 1.1.1 In the UK there are 17 native species of bat nearly all of which have experienced serious declines over the last century.
- 1.1.2 All species are insectivorous and have evolved to hunt a different set of insects, present in different habitat types. Preferred bat habitat includes, woodland, grassland, agricultural land, wetland and rivers.
- 1.1.3 Bats typically roost close to foraging sites and use linear features, such as hedgerows, tree lines and rivers, to navigate. Removal of these linear features is thought to have a significant impact on their movement, which could be contributing to their decline.
- 1.1.4 Bats will roost in a wide range of different sites including; built structures, underground sites and mature trees. Due to the bats ecology, different roost sites will be used at different times of the year. Known roost types include:
- Hibernacula: November through to March
 - Temporary roosts: March to April and August to October
 - Maternity roosts: May through to August
 - Summer roosts (non-breeding): Used by males and immature females
 - Mating roosts: Around September and October
- 1.1.5 The two main roosts to be considered, with respect to buildings and development, are the maternity and hibernation roosts. Disturbance of these two roosts can have significant impacts on local bat populations.
- 1.1.6 Maternity roosts are colonised around late May to early June and usually consist of mature females and their young. Females typically give birth to only one pup a year and disturbance during this time can result in females abandoning the roost and their young. Many species will use the same maternity roost year after year; the loss of a maternity roost can therefore have an enormous impact on the local population.
- 1.1.7 Hibernacula typically consist of underground sites, such as caves and cellars, where temperatures are low and relatively constant. Bats will hibernate to conserve energy over the winter months when falling temperatures cause a drop in the abundance of insects. Disturbing bats whilst hibernating may cause them to wake, wasting a lot of the bats energy reserves, reducing their chance of surviving the winter.

1.2 Bats and the Law

- 1.2.1 All bat species and their roosts in the UK are protected under European and UK law. The main piece of legislation protecting UK bats is the Conservation (Natural Habitats &c.) Regulations 1994 (better known as the Habitats Regulations).
- 1.2.2 In addition to this bats and their roosts are also protected in England and Wales under the Wildlife and Countryside Act 1981 and The Countryside and Rights of Way Act 2000.
- 1.2.3 Under these legislations, it is an offense to:
- Deliberately capture, injure or kill a bat.
 - Deliberately disturb a bat in a way that would affect its ability to survive, breed or rear young (or hibernate or migrate in England, Wales and Northern Ireland) or (significantly in England, Wales and Scotland) affect the local distribution or abundance of the species.
 - Damage or destroy a roost (this is an ‘absolute’ offence).
 - Possess, control, transport, sell, exchange or offer for sale/exchange any live or dead bat or any part of a bat.
 - Intentionally or recklessly disturb a bat at a roost.
 - Intentionally or recklessly obstruct access to a roost.
- 1.2.4 If it is discovered that the development may impact upon bat roosts (thus leading to an offence being committed) a **mitigation plan** should be devised and a **European Protected Species Licence** applied for from the relevant government department (i.e. Natural England). Gaining a licence will depend on many variables; such as species present, roost type, size and its local/regional/national importance.

2. Introduction

2.1 Purpose of the Report

- 2.1.1 A report is required at **Field Head, Lidget Street** to assess the sites potential for supporting bat species, in the form of roosting sites, foraging habitat and/or commuting routes.
- 2.1.2 The aim of this report is to investigate the potential impact that the proposed development may have on the local/ nation bat population.

2.2 Terms of Reference

- 2.2.1 I am instructed by **Robinsons Property Services Ltd** to visit the site and prepare my findings in a report.

2.3 Scope of the Report

- 2.3.1 This report is compiled in accordance with the Bat Conservation Trusts (BCT) '*Bat Surveys - Good Practice Guidelines*', the Joint Nature Conservation Committee (JNCC) '*Bat Workers Manual*' (3rd Edition) and Natural England's '*Bat Mitigation Guidelines*'.

2.4 Details of Proposed Development

- 2.4.1 The proposal for this site is the redevelopment of the existing building to create a hotel.

2.5 Site Description

- 2.5.1 **Field Head, Lidgett Street** is situated 3km north-west of Huddersfield town centre at grid reference: SE117181.
- 2.5.2 The site is surrounded by predominantly residential dwellings some of which have large gardens/grounds with some mature broadleaf trees.

3. Desktop Study

3.1 Methodology

- 3.1.1 A desktop study has been undertaken in order to obtain any records of bats and designated sites within a 1km radius of the site.
- 3.1.2 The National Biodiversity Network (NBN) Gateway website was used to obtain any bat records that were recorded within the last 10 years, relating to this site. The website operates by dividing the country into a series of 10km square grids, and so the records held for the 10km grid containing the survey site (Grid SE11) has been reviewed.
- 3.1.3 The West Yorkshire Bat Group was commissioned to provide all bat records they hold for a 1km radius of the site.
- 3.1.4 The Multi-Agency Geographic Information for the Countryside (MAGIC) website was used to locate any designated sites, such as; Local Nature Reserves (LNR), Special Areas of Conservation (SAC) or Sites of Special Scientific Interest (SSSI), that may be present within 1km of the survey site.

3.2 Results

- 3.2.1 West Yorkshire Bat Group Records: The records obtained for the area surrounding **Field Head** are as follows:

Table 1: Summary of West Yorkshire Bat Group records.

Common Name	Scientific Name	No. of Records	Most Recent Record
Noctule	<i>Nyctalus noctula</i>	1	2010
Pipistrelle Species	<i>Pipistrellus sp.</i>	1	1996
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	2	2010
Unknown Bat Species	<i>Vespertilionidae</i>	2	2003

- 3.2.2 NBN Gateway: The NBN Gateway records obtained for this site can be seen in the table overleaf.

Table 2: List of bat species recorded within the 10km grid square SE11.

Common Name	Scientific Name	No. of Records	Most Recent Record
Noctule	<i>Nyctalus noctula</i>	1	2010
Nathusius's Pipistrelle	<i>Pipistrellus nathusii</i>	1	2013
Pipistrelle Species	<i>Pipistrellus sp.</i>	10	2013
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	1	2013
Unknown Bat Species	<i>Vespertilionidae</i>	47	2013

- 3.2.3 Brandt's and Whiskered bats have only recently been distinguished from each other, a task that is only possible under close examination of the teeth or the male reproductive organ. They are crevice dwellers and found in all types of houses, particularly older stone and slate buildings. In the winter they are regularly found hibernating in underground sites.
- 3.2.4 Brown Long-eared bats usually roost in older buildings, barns and churches, whilst they can be found hibernating in caves, tunnels, mines and ice-houses.
- 3.2.5 Common and Soprano Pipistrelles are crevice dwellers, found commonly in all types of building, including modern housing, and occasionally in trees and bat boxes.
- 3.2.6 Daubenton's are found commonly in underground sites, such as bridges and tunnels near to water, but are occasionally found in old unheated buildings.
- 3.2.7 Natterer's can be found in houses, but have been found in old stone buildings such as castles and churches. In winter they hibernate in a wide range of underground sites.
- 3.2.8 Leisler's bat is naturally a forest species and most commonly found in trees and occasionally bat boxes. They are also regularly found in buildings both old and new.
- 3.2.9 Serotine bats roost mainly in older buildings, with high gables and cavity walls. Little is known about their winter roosts, but it is thought they hibernate in buildings.
- 3.2.10 Nature Conservation Designations: This search revealed that there are no designated conservation sites within 1km of the survey area.

4. Scoping Survey

4.1 Survey Conditions

- 4.1.1 The site was surveyed on 19th August 2014 by David Ryder, Bat Licensed Ecologist (Natural England Reg. CLS0003231).
- 4.1.2 Limitations: There were no perceived limitations to this survey.

4.2 Methodology

- 4.2.1 A detailed search of the buildings exterior structure was conducted during daylight hours in order to identify potential bat roosting sites and look for any evidence of bat activity. Potential roost sites and features deemed to be of value to bats were documented on the site map (please refer to **Appendix 1**) and photographic evidence was taken (please refer to **Appendix 2**).
- 4.2.2 All surveys are conducted by experienced surveyors using the following equipment to ensure an accurate assessment; a printed site map, camera, 1 million candlelight torch, binoculars, ladders and a duet heterodyne bat detector.
- 4.2.3 Signs that bats have previously or are currently using a potential roost site include:
- Scratch marks, urine and oils stains around holes in buildings or trees.
 - Droppings, carcasses and/or food remains found around the site.
 - Bats observed flying in/out of a hole in a building or tree.
 - Bats heard ‘chattering’ within a potential roost site, especially on warm summer days.
- 4.2.4 It must be highlighted that the absence of any of these signs is not proof that the site is not being used by bats. Weathering and other factors will often remove any signs of bat activity, especially when present on the exterior of a building or a tree. As previously explained, many bat species will have several roost sites which they regularly move between and therefore an absence during a survey visit does not exclude their presence at a later date.

4.3 Results

4.3.1 Building Assessment

Building 1: A two storey sandstone villa with an additional overbearing two storey wing to the south and various flat roof single and two storey additions to the rear. The front walls (east and south) are constructed from large uniform blocks of sandstone and there are ornately carved window features around which there are a number of small gaps which at ground floor level were filled with cobwebs and debris. There is significant vegetation to the north east corner. The rear is built with smaller sandstone blocks and is likely solid construction given the age of the property. It is possible that the frontage is a later addition to give the building a higher stature. If this supposition is correct there is a good possibility that a small cavity may exist behind the frontage. The walls are well pointed and there is evidence of re-pointing from the last 20 years. Where the extensions are joined on to the rear of the property there are no discernable gaps between the original structure. The roof is covered in Yorkshire stone and the underside is partly lined with timber lathes although these lathes are in a declining condition. In some areas the timber lathes retained the plaster/lime covering. There are numerous areas where the roof has failed exposing the interior to the elements and beyond these failures the roof is in a poor condition generally with numerous gaps and missing tiles. All of the windows have been boarded over to prevent vandalism and illegal access.

Building 2: A row of two storey cottages with some external features to the ground floor which resemble stable units. They have subsequently been converted for other uses. General construction of the wall matches that of building 1 and is in a similar condition. The roof is in a superior condition to building 1 with modern underfelt. There is evidence of vandalism to the north-west corner which has exposed the interior to the elements. To the south-east corner there is a 1st floor corridor connecting building 2 to building 1. All of the windows have been boarded over to prevent vandalism and illegal access.

Building 3: A sandstone built coach house which connects through to the former barn which itself is attached to the west end of building 2. The coach house has subsequently been converted with an additional structure to the west. The coach house and converted barn are of solid wall construction which is in good external condition and are well pointed. The roof is covered in Yorkshire stone and is in fair condition. There are notable gaps between the tiles which could allow access to bats. To the west of the original coach house is a more modern single storey building with sandstone faced cavity walls which is linked to the coach house by a corridor designed as an entrance and reception. This appears from overhead as a 'H' shaped footprint. The roof of the modern extension is covered in blue slate and is in good condition with no visible gaps and the ridge tiles in place.

4.3.2 Habitats and features present

The building sits within generous grounds laid to lawn with mature trees. A large congregational church borders the property to the south and residential property to the north. To the east is a local road beyond which lies residential and retail property. To the west there is a modern building sat within generous grounds laid to grass.

5. Emergence Survey

5.1 Survey Details

- 5.1.1 The first emergence survey was conducted on 4th August 2014, under the following weather conditions; 15.8 °C at 20:00, less than 25% cloud cover, light westerly breeze, zero precipitation.

The survey was conducted by: David Ryder
Charles Cocking
Simeon Haigh
Liam Plummer

- 5.1.2 The second emergence survey was conducted on 19th August 2014, under the following weather conditions; 17.0 °C at 20:00, 25 – 50% cloud cover, light north-westerly breeze, zero precipitation.

The survey was conducted by: David Ryder
Sue Guest
Simeon Haigh
Toby Thwaites

- 5.1.3 Limitations: There were no perceived limitations to any of these surveys.

5.2 Methodology

- 5.2.1 Emergence surveys are conducted 30 minutes before sunset and up to two hours after. Due to the lifecycle of bats, emergence surveys are conducted between the months of May through to August, and can occasionally run into September. All surveyors used by JCA have experience in conducting bat emergence surveys, and an appropriate level of knowledge in bat ecology.
- 5.2.2 All surveyors present are equipped with the following items during each survey; a heterodyne bat detector, Walkie Talkie, clock, printed site map, note pad and pen.
- 5.2.3 An initial Scoping survey of the site will highlight all areas of the site that are likely to support bat roost sites or bat activity. This information will then be used to influence the number of surveyors used and their positions around the site.

5.3 Results

5.3.1 Emergence Survey 1 results

- 21:12 SH Common Pipistrelle passed from south to north along Lidget Street
- 21:13 SH Common Pipistrelle passed from south to north along Lidget Street
- 21:18 SH Common Pipistrelle from the south passed the front of building 1 and turned west under archway
- 21:18 DR Common Pipistrelle from east through the courtyard and continued around building 2
- 21:19 LP Common Pipistrelle from east around building 2 and continued north-west
- 21:20 SH Common Pipistrelle Passed from south to north
- 21:21 CC Common Pipistrelle Passed from east to west near the boundary with the church
- 21:33 SH Common Pipistrelle foraging briefly to the east of building 1 and then continued north
- 21:35 DR Common Pipistrelle heard (probably to the east)
- 21:43 DR Noctule at height, passed over roughly SE to NW
- 21:44 LP Large bat above the height of the buildings heading NW
- 21:46 DR *Domestic cat sat on the roof of building 3 where it joins building 2*
- 21:47 SH Common Pipistrelle heard to the north
- 21:58 LP Common Pipistrelle foraging to the north of building 3 around neighbouring structure
- 22:02 CC Common Pipistrelle passed from east to west
- 22:03 LP Common Pipistrelle passed from east to west

5.3.2 Emergence Survey 2 results

- 20:36 DR Common Pipistrelle emerged from above 1st floor window of neighbouring property to the north west (and headed west).
- 20:39 TT Common Pipistrelle passed from south to north
- 20:42 TT Common Pipistrelle passed from south to north
- 20:43 DR Common Pipistrelle heard briefly to east
- 20:51 TT Common Pipistrelle single bat foraging to east of archway joined by two more at 21:53 all three departed north at 20:58
- 20:52 SG Common Pipistrelle heard to east for several minutes, but never seen
- 21:09 TT Common Pipistrelle passed from south to north
- 21:10 DR Common Pipistrelle heard to the east

6. Conclusions and Recommendations

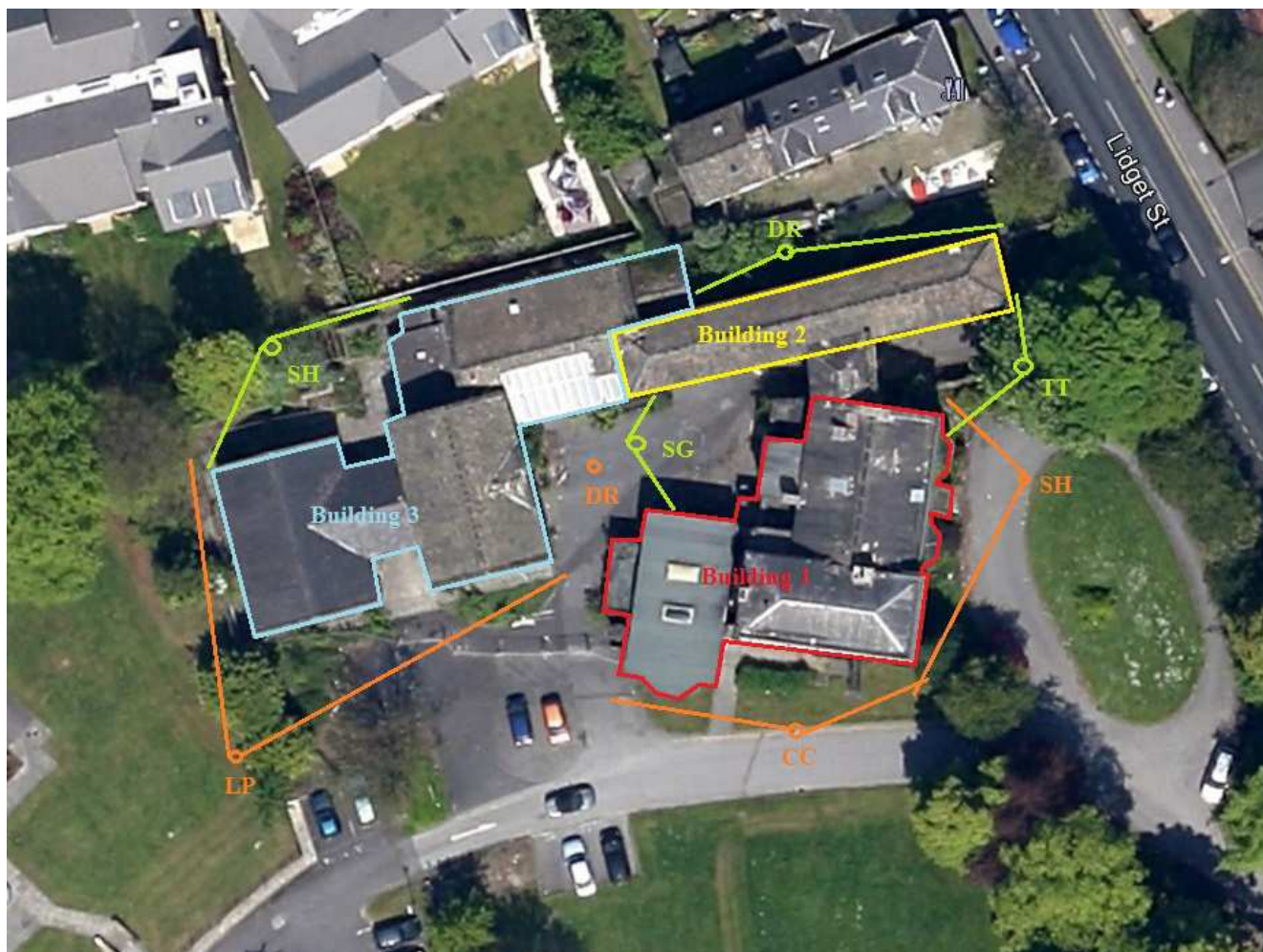
- 6.1 After conducting a thorough Bat Survey, including a scoping survey, emergence surveys and a detailed Desktop Study, we consider **Field Head** not to be in current use by roosting bats.
- 6.2 There are features within the building which could permit access to bats, but surveys conclude that there is no occupation by bats at the time the surveys were conducted. The condition of the roof is very poor in places and the internal condition confirms the ingress of water. There is no evidence of bats either to the interior or the exterior of the property.
- 6.3 As the results of the emergence surveys did not find bat activity within the building we consider proposed development to have no direct impact on the local bat population and therefore recommend that the proposed development should go ahead without any further survey requirements for bat species. Given the declining condition of the building we recommend that the site be re-surveyed in 2017 if the development has not progressed.

Should any bats be found during any stage of a development, all work must stop immediately and Natural England be contacted. Natural England will provide advice on the best course of action. It must be stated that this is a legal requirement, and that bats may only be handled and their roost disturbed by an experienced ecologist holding an appropriate licence.

The development of any building or structure has the potential to provide bat roosting habitat. JCA always recommended that bat roosting opportunities should be integrated into the development to enhance the ecological value of the site. Should you like advice on putting up bat boxes, or on increasing your sites value to bats through carefully designed planting schemes and habitat creation, JCA can provide this service.

Appendices

Appendix 1: Site Plan



Appendix 2: Photographic Evidence

Photo 1: Building 1 from the east



Photo 2: Building 1 from the south



Photo 3: Building 3 from the east



Photo 4: West wall of building 1 where it joins the south wall of building 2 including the 1st floor connecting corridor



Photo 5: North wall of building 2



Photo 6: A view of the renewed roof of building 2 from the interior



Photo 7: The interior of the northwest ridge of building 2 showing damage

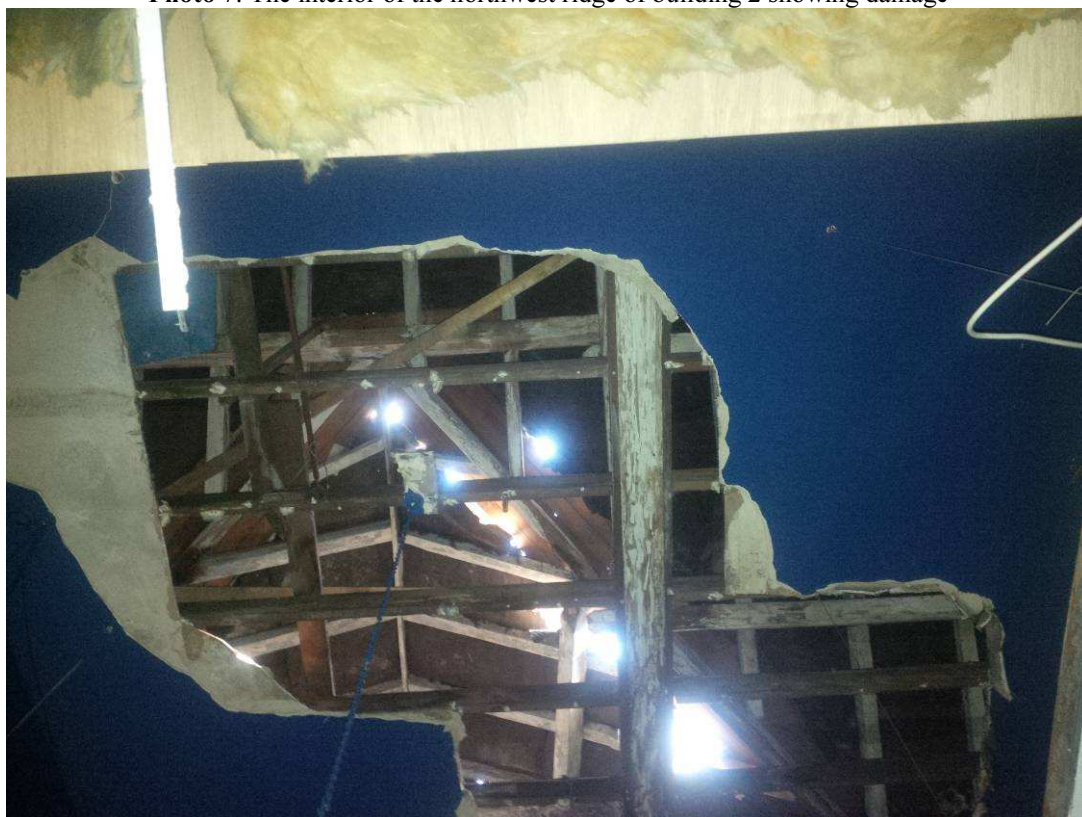


Photo 8: The interior loft space of building 1 showing the lath and plaster underlayer in the best of its condition



Appendix 3: Map of Surrounding Landscape

Figure 1: Google Maps image of Field Head, showing the survey site in relation to the surrounding landscape.



Appendix 4: Glossary

Activity surveys - are used to assess the level of bat activity at a site. This can be done either by using equipment such as an AnaBat device, or manually walking around a site, with a heterodyne detector, documenting the number of bat passes and interceptions.

Dawn surveys - begin around 2 hours before and up to sunrise, when bats are returning to their roosts from foraging and swarming behaviour can be seen close to roost entrances.

Dusk surveys - begin around 30 minutes before sunset and up to 2 hours afterwards. These are done in order to see bats emerging from their roost sites at night.

Echolocation – is a system similar to sonar, and allows bats to travel and forage even in total darkness. Bats make a call and then listen to the returning echoes in order to build up a map of their surrounding area. This allows bats to gauge what an object is and how far away it is, by how long sound takes to return to them.

Habitat - the ecological or environmental area that is inhabited by a particular species of animal, plant or other type of organism.

Hibernation - is a state of inactivity and metabolic depression characterized by lower body temperature, slower breathing, and lower metabolic rate. Hibernating animals conserve food, especially during winter when food is short, tapping energy reserves, body fat, at a slow rate.

Hibernation roost - typically consist of underground sites, such as caves and cellars, which remain relatively cold and humid. Bats will hibernate to conserve energy over the winter months when falling temperatures cause a drop in the abundance of insects. These will typically be colonised around November to around March.

Insectivorous – is when an organism feeds exclusively on insects.

Nocturnal - a behaviour characterized by being active during the night and sleeping during the day.

Maternity roosts – colonised around late May early June and consist of mature females and their young. These roosts need to be warm and quiet, and are used up until around August, with females typically leaving first and then the young.

Mating roosts – mating begins around late October to November; with males of most species using special mating calls to attract females. These can include purrs, clicks and buzzing.

Roost – a site where bats live during the day, rear young and hibernate. These can be in man made structures, such as buildings, bridges, tunnels, cellars and mines, or natural features such as mature trees and caves.

Roost in buildings – many types of buildings will be used by bats, the most likely sites are agricultural buildings (e.g. farmhouses and barns), buildings with exposed wooden beams (greater than 20cm thick), buildings with weather boarding and/or hanging tiles, and buildings close to woodland and/or water.

Roost in trees – these are typically in mature trees with deep sheltered cracks, under loose sections of bark, or in woodpecker holes.

Species – a group of organisms in which all members can interbreed and produce viable offspring.

Summer roosts (non-breeding) - these are generally occupied by groups of males and immature females during the summer, and are usually only occupied for a short period before the group moves to another location.

Swarming – a behaviour exhibited by bats returning to their roost sites at dawn. Bats can be seen repeatedly flying to and from the roost entrance, making it much easier for consultants to identify where roosts are on a building or structure.

Temporary/Transitory roosts – These are used after hibernation (March – April) before mature females disperse to maternity roosts and male/ immature females colonise summer (non-breeding) roosts. Similarly, temporary roosts form before hibernation (August -October).

Underground Roosts – these are typically used during the winter and can be mines, caves, tunnels or cellars.

Appendix 5: References

Bat Mitigation guidelines (Jan. 2004). A. J. Mitchell-Jones. English Nature.

Bat Survey Guidelines: Good Practice Guidelines (2007). Bat Conservation Trust (BCT).

Bat Workers Manual (3rd Edition 2004). A. J. Mitchell-Jones & A. P. McLeish. Joint Nature Conservation Committee (JNCC).

Websites:

Bat Conservation Trust (BCT). <<http://www.bats.org.uk/>>

Google Maps. <<http://maps.google.co.uk/>>

Multiple-Agency Geographic Information for the Countryside (MAGIC). <<http://www.magic.gov.uk/>>

National Biodiversity Network (NBN) Gateway. <data.nbn.org.uk>

Natural England. <<http://www.naturalengland.org.uk/>>

Nature on the Map. Natural England. <www.natureonthemap.org.uk>

Relevant Legislation:

Wildlife and Countryside Act 1981 <<http://jncc.defra.gov.uk/page-3614>>

Conservation (Natural Habitats, &c.) Regulations 1994 (The Habitats Directive) (Amended 2010)
<<http://www.legislation.gov.uk/ukxi/2010/490/contents/made>>

Countryside and Rights of Way Act 2000
<http://www.legislation.gov.uk/ukpga/2000/37/pdfs/ukpga_20000037_en.pdf?view=interweave>

Appendix 6: Author Credentials

Consulting Staff: Arboriculture

Andy Bagshaw *FdSc (Arboriculture)*. Andy joined JCA in 2005 having gained several years experience in tree surgery and landscaping. Andy has obtained a foundation degree in Arboriculture at the University of Central Lancashire, is QTRA qualified and is a JCA team leader who manages an office of Consulting Arboriculturists.

Toby Parsons *Cert. Arb. (RFS), Tech. Cert. (Arbor.A)*. Toby joined JCA after spending 6 years working as a senior climber for various Arboricultural contractors in the East Midlands and the South-West. He has gained the Level 2 Certificate in Arboriculture (RFS) and an Arboricultural Technicians Certificate. Toby is LANTRA certified in Professional Tree Inspection.

Scott Reid *ND (Arboriculture and Forestry)*. Scott joined JCA after working with other consultancy companies in the south of England. He specialises in trees in relation to development and holds a National Diploma, various NPTC qualifications and is currently studying for his Level 4 Diploma in Arboriculture.

Andrew Bussey Andrew joined JCA having spent 12 years working as a tree surgeon for various private companies and a Local Authority. He has NPTC qualifications, is QTRA qualified and is studying for his Arboricultural Technicians Certificate.

Phil Humeniuk *FdSc (Arboriculture)*. Phil joined JCA having spent 3 years working for various tree surgery companies and as a Tree Officer for a Local Authority. He also has several years experience working as a consultant both for JCA and for another consultancy. Phil obtained his foundation degree in Arboriculture at the University of Central Lancashire and has various NPTC's and is LANTRA certified in Professional Tree Inspection.

Flora Harding *BSc (Hons) Fd.BSc. (Arboriculture and Tree Care)*. Flora has a degree in Rural Resource Development (in Wildlife and Landscape Conservation). She has previously worked for a local authority and has a licence for QTRA. In 2012, Flora published an article to enable industry based research for the purpose of gaining Chartered Arboriculturist status.

Michelle Ryan *BSc (Hons) Arboriculture*. Michelle has recently joined JCA having previously worked for a Local Authority. She obtained a degree in Arboriculture at the University of Central Lancashire and has various NPTC qualifications. Michelle is seeking to become LANTRA certified in Professional Tree Inspection.

Liam Plummer *BSc (Hons) Ecology*. Liam graduated from Bangor University in Ecology. He has recently joined JCA having worked for the Forestry Commission Scotland and previously in the Arboriculture and Conservation sectors. Liam has various NPTC qualifications and has completed several National Diploma (Arboriculture) units.

Consulting Staff: Ecology

David Ryder. David joined JCA in 2013 as our in-house ecologist. He brings with him over 8 years experience in the field of ecological consultancy conducting Phase 1 habitat and species surveys for Badgers, Bats, Nesting Birds, Otters & Reptiles among others. David has a specialism in Bats and holds registration (No. CLS03231) with the Class 18 Natural England Licence to disturb and handle bats. David is currently undergoing assessment for Chartered Institute of Ecology & Environmental Management (CIEEM) membership. In addition David is bolstering his experience and academic credentials and is enrolled on the Postgraduate Certificate in Ecological Survey Techniques at the University of Oxford starting later in 2014.

Administrative Staff

Sue Guest Administrative Team Leader.
Simeon Haigh *BSc (Hons)*. IT Officer.
Lorraine Spink Administrative Assistant.

Yasmin Shahzad Administrative Assistant.
Catherine Cocking Accounts Manager.

I hope that this report provides all the necessary information, but should any further advice be needed please do not hesitate to contact the author.

Signed

A handwritten signature in cursive script, appearing to read 'David Ryder', is positioned above a horizontal dotted line.

David Ryder

5th October 2014

For and on behalf of **JCA Ltd**

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Catherine Cocking
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Photo front cover: Sluice at Bowers Mill

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