

BAT SURVEY & REPORT
at
Stonegarth
Cross Street
Barnsley
South Yorkshire
S71 2EP

Client:
Bellway Homes Yorkshire Ltd

Client Address:
2 Deighton Close
Wetherby
LS22 7QZ

Client Contact:
01937 583533 (Tel)

JCA Ref:
12107a/DR

JCA Limited

Arboricultural Consultants

Contents

1. Background Information on UK Bats....3
1.1 Bat Ecology....3
1.2 Bats and the Law....4
2. Introduction....5
2.1 Purpose of the Report....5
2.2 Terms of Reference....5
2.3 Scope of the Report....5
2.4 Details of Proposed Development....5
2.5 Site Description....5
3. Desktop Study....6
3.1 Methodology....6
3.2 Results....6
4. Scoping Survey....8
4.2 Survey Conditions....8
4.3 Methodology....8
4.4 Results....9
5. Conclusions and Recommendations....11
Appendix 1: Building Identifier....13
Appendix 2: Photographic Evidence....14
Appendix 3: Map of Surrounding Landscape....18
Appendix 4: Glossary....19
Appendix 5: References....20
Appendix 6: Author Credentials....21

© JCA Limited 2015

1. Background Information on UK Bats

1.1 Bat Ecology

1.1.1 In the UK there are thought to be 18 native species of bat (17 known to be breeding), 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 habitats include 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 negative 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 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 maternity roosts and hibernacula. Disturbance of these two roosts can have significant negative 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 hibernating bats may cause them to wake, wasting a lot of the bats' energy reserves, reducing their chance of surviving the winter.

© JCA Limited 2015

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 development may impact upon bat roosts (thus leading to an offence being committed) a **mitigation plan** should be devised and a **Habitat Regulations derogation licence** applied for from the relevant government department (i.e. Natural England). Gaining a licence will depend on many variables, such as the bat species present, roost type, roost size and its local/regional/national importance.

© JCA Limited 2015

2. Introduction

2.1 Purpose of the Report

2.1.1 A report is required at **Stonegarth, Cross Street** to assess the site's 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 bat population.

2.2 Terms of Reference

2.2.1 I am instructed by **Bellway Homes Yorkshire 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 Trust's (BCT) '*Bat Surveys - Good Practice Guidelines*', the Joint Nature Conservation Committee's (JNCC) '*Bat Workers Manual*' (3rd Edition) and Natural England's '*Bat Mitigation Guidelines*'.

2.4 Details of Proposed Development

2.4.1 A residential development is proposed on this site.

2.5 Site Description

2.5.1 **Stonegarth, Cross Street** is situated 2km north-east of Barnsley town centre, at grid reference: SE362077.

2.5.2 The site is immediately east of a pocket of agricultural land, both grassland and arable, which sits within the settlement of Monk Bretton. Monk Bretton merges into the suburban landscape around Barnsley.

© JCA Limited 2015

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 NBN gateway website holds ecological records collected across the UK from a variety of sources and is available for public use. 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 SE30) has been reviewed.

3.1.3 In addition to this the South Yorkshire Bat Group was commissioned to provide historical bat records, within 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 Local Bat Records: The records obtained from the South Yorkshire Bat Group for **Land off Cross Street** are summarised in the table below:

Table 1: Summary of bat species records provided by the South Yorkshire Bat Group.

Data was not received in a timely fashion and was not available at the time of publishing. Once received the report will be revised with the data summary and comments.

3.2.2 NBN Gateway: The NBN Gateway records obtained for this site can be seen in the table below. None of these records were within a 1km radius of the site.

Table 2: Summary of bat species recorded within the 10km grid square SE30.

Common Name	Scientific Name	No. of Records	Most Recent Record
Daubenton's Bat	*Myotis daubentonii*	2	2011
Natterer's Bat	*Myotis nattereri*	9	2013
Myotis Species	*Myotis sp.*	12	2013
Soprano Pipistrelle	*Pipistrellus pygmaeus*	14	2014
Pipistrelle Bat species	*Pipistrellus sp.*	2	2014
Brown Long-eared Bat	*Plecotus auritus*	1	2005
Bat Species	*Vespertilionidae*	30	2014

© JCA Limited 2015

3.2.3 Brandt's and Whiskered Bats have only recently been distinguished from each other and this clarification requires close inspection. 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 summer roosts are usually found in older buildings, barns, churches and trees. Whilst winter roosts consist of caves, tunnels, mines, ice-houses and only occasionally trees and buildings.

3.2.5 Both 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 almost exclusively in underground sites, such as bridges and tunnels near to water.

3.2.7 Leisler's bats are 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.

3.2.8 Nathusius' Pipistrelles are crevice dwellers and are regularly found roosting in buildings.

3.2.9 Natterer's are rarely 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.

3.2.10 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.

3.2.11 Whiskered bats are crevice dwellers and regularly found in buildings, including both older and modern housing. They are most commonly found hibernating in caves and tunnels.

3.2.12 Nature Conservation Designations: This search revealed that the only nature conservation designation within a 1km radius of the site is Dearne Valley Park LNR, which is located approximately 600m to the south of the site. However, urban development and a major road, the A633, lie between the site and the LNR and form a barrier to wildlife. Therefore, the development at this location will not impact the designated conservation site.

© JCA Limited 2015

4. Scoping Survey

4.2 Survey Conditions

4.2.3 The site was surveyed on 17th March 2015 by David Ryder.

4.2.4 Limitations: There were no perceived limitations to this survey.

4.3 Methodology

4.3.3 A detailed search of the building's exterior structure was conducted during daylight hours in order to identify potential bat roosting sites and look for 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**).

4.3.4 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.

4.3.5 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.

4.3.6 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.

© JCA Limited 2015

4.4 Results

4.4.3 Building Assessment

The property contains a brick built dormer bungalow with a simulated stone frontage. The whole having a "T" shaped footprint with the top of the "T" to the approximate south. Immediately to the south there is a brick built garage block with a felt roof.

The bungalow is of 1960's construction and likely has a cavity wall. Externally the walls are in good condition and the pointing is all present. A painted timber soffit chases the top of the wall at the eaves. The gables however have a seamless join between walls and roof with pointing beneath the roofing tiles. The north end of the building the roof is hipped and hence there is no gable. The soffit gapes slightly where it passes over the simulated stone frontage due to the irregular profile of the blocks. There are gaps of between 6 – 8mm however there is no visible signs of fur or oily marks which would suggest bats are passing through the gaps.

The roof is covered in small terracotta tiles which have a flat profile. A dormer window faces east and the south gable has the only first floor window in the property. A bay window faces east from the ground floor which is covered with a leaded section of roof which is visually well sealed. The dormer window is in good condition from the exterior and appears well sealed on the vertical faces. The top of the dormer roof was not visible; however there was no sign of water ingress to the interior which suggests a good seal exists. There are two brick chimney stacks, one at the ridge and one at the north end of the building. Both chimneys are sealed with roofing lead which is in good visible condition. There are two areas of the roof where the pitch alters by 90° creating an internal angle to the south-east and south-west towards the northern end of the building. There are a number of gaping tiles caused by the change of direction.

The interior of the bungalow is in good condition. The loft was accessed although given the dormer the void was not fully accessible and observations were made from near the point of access. The roof is lined with underfelt and from the materials used appears to be original and date from the original period of construction. There was no physical evidence of bat activity within the roof void.

The garage block is of a simple design and construction with walls of single brick deep and a simple felt over timber roof. This design does not provide good roosting habitat.

4.4.4 Habitats and Features Present

The property sits within mature gardens with several flowering species which will attract insects. Beyond the plot there is an area of farmland to the west with mature hedgerow boundaries. To the north and south the landscape is predominantly residential with period and modern buildings. To the east there are two rows of residential houses before reaching a large sports ground.

© JCA Limited 2015

4.4.5 Tree Assessment

The site does not contain any trees with suitable features which would provide roosting opportunities for bats.

© JCA Limited 2015

5. Conclusions and Recommendations

5.2 After conducting a thorough Bat Roost Potential survey and a detailed Desktop Study, we consider **Stonegarth, Cross Street** to have a low to moderate potential to support roosting bats.

5.3 Certain features offer potential access points, these are: The soffits and the interior angles to the roof at the north end of the building. Neither of these features displayed any evidence of bat activity and there was no evidence of bat activity found within the loft interior. The gaps do have the potential to offer roost opportunities to bat colonies either small or large.

5.4 As the site has been considered to have a low to moderate potential to support bat roosting bats, we advise that activity surveys are the only way to provide evidence that bats are not present within the structure without dismantling the structure of the building and in turn damaging any bat roost that might be present (which is an offence under the Wildlife and Conservation Act 1981.

5.4.3 Activity survey can be undertaken between the months of May and September when the weather conditions are appropriate (Minimum 9°C at dusk with only light wind and light rain).

Should any bats be found during any stage of a development, all work must stop immediately and Natural England must 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 risk of removing bat roosting habitat. Therefore JCA always recommend that alternative bat roosting opportunities should be provided to replace any that are lost due to building alterations. Should you like advice on putting up bat boxes, or on increasing your site's value to bats through carefully designed planting schemes and habitat creation, JCA can provide this service.

© JCA Limited 2015

Appendices

Appendix 1: Building Identifier



© JCA Limited 2015

Appendix 2: Photographic Evidence

Photo 1: Stonegarth east facing frontage



© JCA Limited 2015

Photo 2: Stonegarth north wall



© JCA Limited 2015

Photo 3: Stonegarth west wall and south gable



© JCA Limited 2015

Photo 4: Stonegarth loft interior towards the north west illustrating construction method and materials



© JCA Limited 2015

Appendix 3: Map of Surrounding Landscape

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



© JCA Limited 2015

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 that 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 the identity and distance of an object by how long the echo 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 energy, especially during winter when food is short, tapping energy reserves, i.e. body fat, at a slow rate.

Hibernacula - 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. Males of most species use 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.

Roosts 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.

Roosts 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.

© JCA Limited 2015

Appendix 5: References

Bat Mitigation Guidelines (Jan. 2004). A. J. Mittchell-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/uksi/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>

© JCA Limited 2015

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.

© JCA Limited 2015

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



.....

David Ryder, Principle Ecologist.

20th May 2015

For and on behalf of ***JCA Ltd***

Registered Office:

Unit 80
Bowers Mill
Branch Road
Barkisland
Halifax
HX4 OAD

Tel. 01422 376335
Fax. 01422 376232
Email: jon@jcaac.com

www.jcaac.com

Report printed on recycled paper

© JCA Limited 2015

JCA Ltd. Arboricultural Consultants
Professional Tree Advice • Nationwide Service

Tree Advice for Architects and Developers

- British Standard 5837 Tree Surveys
- Arboricultural Implication Studies
- Arboricultural Method Statements
- TPO/Planning advice/project management

Tree Advice for Engineers, Loss Adjusters and Insurers

- Tree surveys for subsidence
- Heave assessment
- Tree root identification

Tree Advice for Landowners, Homeowners, and Homebuyers

- Tree Safety/health surveys
- Tree surveys for mortgage purposes
- Planting advice/scheme design
- Garden tree and shrub maintenance plans

Tree Advice for Local Authorities and Estate Managers

- Tree Inventories and Risk Assessments
- TPO re-surveys
- Trees in Historic Parks and Gardens
- Veteran trees
- Woodland Management Plans
- Ancient woodland
- Tree planting schemes

Tree Advice for the Legal Profession

- Litigating subsidence claims
- Personal Injury cases
- Expert witness for planning inquiries and appeals

Registered Office:
Unit 80 Bowers Mill Branch Road Barkisland Halifax HX4 0AD
Tel: 01422 376335 Fax: 01422 376232 Mobile: 07778 391986
Email: jon@jcaac.com Website: www.jcaac.com
Company Reg No. 05005041 VAT No. 686 4674 78

Directors:

Jonathan Cocking
F. R. E. S., Tech. Cert. (Arbor A), P. Dip. Arb.
(R. F. S.), F. Arbor. A., CBiol, MIBiol

Catherine Cocking
RGN RM

Photo front cover: Sluice at Bowers Mill

Printed on recycled paper

Arboricultural Association