BAT EMERGENCE AND RE-ENTRY SURVEY REPORT

at

8 Moor Road
Wythenshawe
Manchester
Greater Manchester
M23 9BG

Client:
SUMO Developments

Client Address:
Pure Offices, Brooks Drive,
Cheadle Royal Business Park,
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Client Contact:
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JCA Ref:
18754/AD

Date of Report:
12/09/22



JCA Limited
Arboricultural & Ecological Consultants

Quality Assurance

Version	Desktop Survey Completed:		Site Surveyed:		Report Completed:		Reviewed:	
	Date	Name	Date	Name	Date	Name	Date	Name
Planning	22/08/22	Amy Donaldson	19/07/22	Audrey Bourdais Paul Helen Chambers	12/09/22	Amy Donaldson	14/09/22	Audrey Bourdais Paull
			23/08/22	Adam West (Lead Surveyor)			26/09/22	Adam West
			08/09/22	Adam West (Lead Surveyor)				

This report has been prepared and provided in accordance with the *British Standard 42020: Biodiversity – Code of practice for planning and development 2018* and the *CIEEM's Code of Professional Conduct.*

Risk Assessment Completed	AD
Bio-security Procedure Completed	
Lone Worker Procedure Completed	

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Summary

JCA Ltd was commissioned by **SUMO Developments** to provide ecological advice to inform works at **8 Moor Road**, hereafter referred to as 'the site'. The site is located at **Wythenshawe, Manchester, Greater Manchester, M23 9BG**, Ordnance Survey (OS) National Grid Reference SJ 8041690011. The Preliminary Ecological Appraisal (PEA) undertaken on 27/01/2021 identified two buildings with **moderate Bat Roost Potential (BRP)** which would be destroyed. Further surveys were recommended on **09/02/2021** to determine the presence/likely absence of a roost in this building.

The purpose of this report is to present the findings of the surveys, an interpretation of the findings and to provide recommendations for undertaking the proposed works in accordance with relevant legislation.

Bats and their roosts are protected under UK law. Development works that are likely to affect bats or their roost sites must be completed under licence from the statutory conservation body, in this case Natural England (NE).

Field surveys were undertaken on 23/08/2022 and to identify any bat use of the building. The surveys found a low levels of foraging and commuting activity on site, and no evidence of roosting bats within the building on site. A grey squirrel was observed to enter the building being surveyed.

An evaluation of the site, likely impacts of the scheme upon bats and recommendations for proceeding with works in compliance with legislation are presented in Chapters 4, 5 and 6 of this report.

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1. Introduction

1.1 Background

1.1.1 In **January 2021**, JCA Ltd was commissioned by **SUMO Developments** to undertake a bat scope survey of a site located at **8 Moor Road** hereafter referred to as 'the site'. The bat scope identified one building on site with moderate bat roost potential that would likely be disturbed as part of the proposed work.

1.2 Details of Proposed Development

1.2.1 The development proposed on this site is to demolish the existing two story house, garage and remove all the grassland to the rear of the site to build five new residential dwellings with parking.

1.3 Site Location

1.3.1 The site is located at Ordnance Survey (OS) National Grid Reference **SJ 8041690011,** with nearby postcode **M23 9BG**. The site is bordered to the north, east and south by residential properties, and to the west by a small patch of woodland containing three ponds.

1.4 Scope of works

1.5.1 The following elements of work were included in the bat survey programme:

- Desktop study – a review of historical records of bats in the surrounding area, including the results of recent ecological surveys in the area.
- Field surveys – two dusk/dawn surveys, on separate days, during the summer to assess whether bats are using the buildings/trees to roost in.
- Ecological report – detailing the survey results, implications for the disturbance of the buildings/trees and recommendations.

1.5 Survey and report objectives

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1.6.1 The main aim of the dusk emergence and dawn re-entry bat surveys was to determine the presence/likely absence of roosting bats that will be impacted by the proposed development.

1.6.2 If roosting bats are present, to:

- Identify the species and numbers of bats present.
- Determine the type of roost (e.g. maternity roost, transitional roost, hibernation site, etc).
- Gain sufficient information to allow the potential impacts on bats of the proposed works to be assessed and for appropriate avoidance, mitigation and/or compensation measures to be designed.

1.6.3 The aims of the report presented are to:

- Outline the legislative protection given to bats.
- Report on the findings of a desk-based study undertaken to identify any existing records for bats which are relevant to the site.
- Summarise the findings of the bat surveys and provide an assessment of the potential ecological constraints to the proposed works at the site.
- Provide recommendations for further survey, avoidance, mitigation and/or enhancement where appropriate.

1.6 Legislative Context

1.7.1 In the UK all species of bat and their roosts are fully protected under Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, with additional protection offered under Schedule 5 of the Wildlife and Countryside (WCA) Act 1981 (as amended). This makes it an offence to:

- Deliberately or recklessly capture, injure or kill a bat;
- Deliberately or recklessly disturb in a way that would affect their local distribution or abundance, or affect their ability to survive, breed or rear young;
- Damage or destroy a bat roost (this is an ‘absolute’ offence);
- Intentionally or recklessly obstruct access to a bat roost; and/or
- Possess, control, transport, sell, exchange or offer for sale/exchange any live or dead bat or any part of a bat.

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1.7.2 Under this legislation a roost is determined as any structure or place used for shelter. As bats tend to re-use the same roosts, the roost is protected whether the bats are present at the time or not.

1.7.3 Please see **Appendix 1** for a more detailed overview of the UK legislation protecting bats.

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2. Methodology

2.1 Desktop Study

2.1.1 A desktop study was carried out as part of the bat scope undertaken by JCA in January 2021. The local biological records centre, Greater Manchester Record Centre (GMRC), was commissioned to provide details of historical protected and notable species records within a 2km radius of the site.

2.1.2 Ordnance Surveys maps (1:25000 scale), MAGIC maps and aerial imagery (Google Earth) were used to assess habitat availability and connectivity in the wider area around the site.

2.2 Field Surveys

2.2.1 The field surveys were planned and conducted with reference to Bat Surveys: Good Practice Guidelines 3rd Edition (Collins, 2016). Surveys were conducted in August 2022.

2.3 Emergence/re-entry surveys

2.3.1 Dusk emergence and dawn re-entry surveys are used to determine the presence or likely absence of bat roosts in buildings or features when the preliminary roost assessment cannot reasonably rule out the presence of roosting bats. They are also used to identify the type of roost where a known roost is present. They can only be completed in the season when bats are most active (May to September, with optimum bat activity between June and August).

2.3.2 During the bat scope conducted on 27th January 2021 all structures/trees/buildings on site were subject to an internal and external survey to establish the suitability of the structure to support roosting bats in accordance with Collins (2016) and Bats in Tree Roosts (Andrews, H. 2018). Dusk emergence and dawn re-entry survey effort is dictated by the category of bat roost potential assigned to a structure or tree during the preliminary bat roost potential assessment. **Table 1** (taken from Collins, J. 2016) summarises the survey effort required for structures to give confidence in a negative result.

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Table 1 Recommended minimum number of survey visits for presence/likely absence surveys

Low roost suitability	Moderate roost suitability	High roost suitability
One survey visit. One dusk emergence or dawn re-entry survey (structures). No further surveys required (trees).	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey.	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn.

2.3.3 JCA assigned the following categories to structures and trees that required further survey.

Table 2 Categories of Structures/Trees Surveyed

Structure/tree to be surveyed	Assigned category	Number of surveys required
Building 1 (House)	Moderate	2
Building 2 (Garage)	Moderate	2

2.3.4 All other buildings/trees on site are considered to have negligible bat roost potential (BRP).

2.3.5 Dusk emergence surveys commence 15 minutes before sunset and end 1.5 hrs after sunset. Dawn re-entry surveys commence 1.5 hours before sunrise and finished up to 15 minutes after sunrise, depending on activity levels recorded during the survey.

2.3.6 During the surveys, bat calls were monitored using bat detectors and notes were made on the times of bat calls and any bat activity seen or heard (commuting, foraging, roosting or social calls) to determine the following information:

- Time and species of first and last bat call.
- Location of bats/proximity to the buildings.
- Number and species of bats present (where identification is possible).
- Bat activity levels (foraging, commuting, social calls).
- Number of bats recorded entering/exiting the structures/trees/buildings

2.4 Survey Constraints

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2.4.1 The comprehensiveness of any ecological assessment will be limited by the season in which surveys are undertaken. To determine presence or likely absence of a protected species and their status (i.e. the number of individuals present) usually requires multiple visits at suitable times of the year. The survey conditions and timings were suitable for surveying bats and therefore are not considered to be a limitation to the effectiveness of the surveys.

2.4.2 The weather conditions during the survey are given in **Table 3** below:

Table 3 Weather Conditions during the surveys.

Date	**Sunset/ sunrise time**	**Start & finish time**		**Temp - Start and Finish (ºC)**		**Wind speed (Beaufort)**	**Cloud cover (%)**	**Precipitation**
23/08/22	20:20	20:04	21:50	20	20	1	100	0
08/09/22	06.30	04:57	06:30	14	14	1	90	0

2.4.3 Upon arrival to site, it was found that Building 2 (the garage) had been demolished. As a result, only one building was surveyed, as covered in this report.

2.4.4 The details of this report will remain valid for 18 months. Beyond this period, if the proposed works have not commenced, a new review of the ecological conditions must be undertaken.

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3. Results

3.1 Desktop study results

3.1.1 Local Data Centre Records: GMRC has been commissioned to provide the records held for bat species within a 2km radius of the survey site. The results have been summarised below. It should be noted that the absence of records should not be taken as confirmation bat species are absent from the search area. Please see **Table 4** below for a summary of the bat records from the last ten years obtained from GMRC. **Table 5** summarises all bat roost records within 2km of the site received from GMRC.

Table 4 Summary of bat records from the last ten years held by GMRC within 2km of the site.

Common Name	Scientific Name	On site	Within 500m	Within 1km	Within 2km	Notes
Common pipistrelle	*Pipistrellus pipistrellus*	×	✓	✓	✓	Sixty-two records dating from 2010 to 2018. Records are of bats heard on aural bat detectors, bats foraging and commuting. Six records are of injured bats with three bats having to be euthanised. Nineteen records are from the NBMP database of a transect survey. One record was a bat found under a facia during roof work. One record was within 50m of the site.
Noctule	*Nyctalus noctula*	×	×	✓	✓	Twenty-three records dating from 2010 to 2018. Eighteen records are from the NBMP transect surveys. The rest of the records are of bats commuting.
Soprano pipistrelle	Pipistrellus pygmaeus	×	×	✓	✓	Six records dating from 2010 to 2014. Three records from NBMP transect surveys. The rest of the records are of bats foraging and commuting.
Unidentified *Myotis* spp.	*Myotis* sp.	×	×	✓	✓	Single aural bat detector record from 2018.

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Table 5 Summary of bat roost records held by LERC within 2km of the site.

Common Name	Scientific Name	On site	Within 500m	Within 1km	Within 2km	Notes
Unidentified *Pipistrelle* spp.	*Pipistrellus* sp.	×	×	✓	✓	Five records dating from 1998 to 2016. One record is of a hibernating bat in a box. One of bat droppings and the rest are of bats found during building work.
Unidentified bat species	Chiroptera	×	×	✓	✓	One record from 2009 of oak tree with hole & staining.
Common pipistrelle	*Pipistrellus pipistrellus*	×	×	✓	✓	Five records dating from 1999 to 2018.

3.2 Field Survey Results

3.2.1 23/08/22 dusk emergence survey Building 1 – Location 1

Nineteen bats were detected during the survey. The first detection was made at 20:26, six minutes after sunset. Two species were identified: common pipistrelle and noctule bats. Commuting and foraging behaviour was recorded. No bats were observed emerging from the building being surveyed.

3.2.2 23/08/22 dusk emergence survey Building 1 – Location 2

Ten bats were detected during the survey. The first detection was made at 20.29, nine minutes after sunset. Two species were identified: common pipistrelle and noctule bats. Commuting and foraging behaviour was recorded. No bats were observed emerging from the building being surveyed.

3.2.3 23/08/22 dusk emergence survey Building 1 – Location 3

Six bats were detected during the survey. The first detection was made at 21.09, Twenty-nine minutes after sunset. One species were identified, the common pipistrelle bat. Commuting behaviour was recorded. No bats were observed emerging from the building being surveyed.

3.2.4 08/08/22 dawn re-entry survey Building 1 – Location 1

Ten bats were detected during the survey. The last detection was made at 6:13, seventeen minutes before sunrise. One species was identified,

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the common pipistrelle bat. Commuting behaviour was recorded. No bats were observed entering the building surveyed.

3.2.5 08/08/22 dawn re-entry survey Building 1 – Location 2

No bats were detected during the survey. No bats were observed entering the building surveyed.

3.2.6 08/08/22 dawn re-entry survey Building 1 – Location 3

No bats were detected during the survey. No bats were observed entering the building surveyed.

3.2.7 Incidental observations

During the survey on 23/08/22 a grey squirrel *Sciurus carolinensis*, was observed to enter the building at 20:19, via a gap in the roof on the verge of the building (see **Appendix 4, photo 1**).

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4. Interpretation of Survey Results

4.1.1 No bats were observed to emerge from or re-enter the surveyed building. There were twenty commuting passes and foraging activities recorded, suggesting a low activity level in this area of the site.

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5. Impacts of the Scheme

5.1.1 The survey did not record any use of the building by roosting bats and it is considered unlikely that the scheme will result in an offence under relevant legislation (see **Section 1.5** and **Appendix 1**).

5.1.2 However, foraging and commuting opportunities will be reduced by the proposed development through the removal of habitat onsite.

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6. Recommendations

6.1.1 The emergence survey recorded low levels of bat activity within the site. With this in mind, the following recommendations are made with respect to bats at **8 Moor Road, Wythenshawe.**

6.1.2 It is recommended that no night working take place and no additional lighting be used at the site to avoid disturbance to commuting bats. If it is necessary to install additional lighting on site, these should be fitted with hoods, cowls or shields to direct light into the working areas only.

6.1.3 Inappropriate lighting in the vicinity of bat roosts can cause disturbance to bat populations and individuals. As such, guidance in line with the information provided by the Institute of Lighting Professionals (ILP, 2018) will aid in planning lighting schemes with the aim of limiting the impact that lighting may have on local bat populations:

It is important to avoid:

- Uniform levels of luminance across the site.
- Metal halide and florescent lighting.
- Upward tilting lighting that increases skyline luminance. Instead, the following should be installed:
- Dark buffer zones.
- Screening in the form of vegetation, fences and structures.
- Appropriately designated darkened areas.
- Luminaries absent of UV elements.
- LED luminaries with a sharp cut-off, low intensity and good rendition.
- A warm white spectrum (<2700 kelvin) to reduce blue light.
- Peak luminaire wavelength at a minimum of 550nm.
- Downward directional luminaires with upward light ratios of 0%.
- Lower light columns to limit light spill

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- Recessed internal light fixtures.
- Window glazing treatments or automated blind systems.

6.1.4 New lighting schemes should be approved by an appropriately experienced ecologist prior to construction.

6.1.5 In the unlikely event a bat is found within any of the trees or buildings on site at any time of year, either prior to or during the scheme, works should cease immediately, and the advice of an appropriately qualified, experienced and licensed ecologist should be sought. As bats and their roosts are protected under UK legislation (see Appendix 1), the work would then need to be completed under the authority of a Natural England (NE) mitigation licence. Mitigation and compensation measures to reduce the impact on bats would be required as conditions of the licence.

6.1.6 Grey squirrels are protected under The Wildlife Act (2006), in which it states that it is illegal to kill a grey squirrel in an inhumane manner. It is therefore recommended that the roof tiles be removed by hand during demolition.

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7. References

Mitchell-Jones, A.J. (2004) *Bat Mitigation Guidelines.* English Nature, Peterborough

Mitchell-Jones, A.J. & McLeish, A.P. (2012) *The Bat Workers' Manual.* Pelagic Publishing, Exeter.

Collins (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd edition, Bat Conservation Trust, written 2016

JCA (2021) Ecological Impact Assessment Report at: 8 Moor Road. Wythenshawe, Greater Manchester, M23 9GB.

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>

The Conservation of Habitats and Species (EU Exit) Regulations 2019

<https://www.legislation.gov.uk/ukdsi/2019/9780111176573>

Countryside and Rights of Way Act 2000

<http://www.legislation.gov.uk/ukpga/2000/37/pdfs/ukpga_20000037_en.pdf?view=interweave>

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Appendices

Appendix 1: Legislation Pertaining to the Protection of Bats

All bat species have, for some time, been protected under schedule 5 of the Wildlife & Countryside Act 1981. However, the effective protection for bats now comes from Schedule 2 of the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019, which defines "European protected species of animals". Changes to legislation, and devolution, mean the law is difficult to summarise succinctly across the UK, but the strong legal protection for bats and roosts remains.

It is an offence across the UK to:

- deliberately or recklessly capture, injure or kill a bat
- deliberately or recklessly disturb in a way that would affect their local distribution or abundance, or affect their ability to survive, breed or rear young
- damage or destroy a bat roost (this is an ‘absolute’ offence)
- intentionally or recklessly obstruct access to a bat roost
- possess, control, transport, sell, exchange or offer for sale/exchange any live or dead bat or any part of a bat

'Deliberately' in this context may be interpreted as someone who, although not intending to capture/injure or kill a bat, performed the relevant action, being sufficiently informed and aware of the consequence his/her action will most likely have.

In this interpretation, a bat roost is "any structure or place which any wild [bat]...uses for shelter or protection". Because bats tend to reuse the same roosts, legal opinion is that the roost is protected whether or not the bats are present at the time.

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Appendix 2: Site Plan and Surveyor Locations

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W E

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Appendix 1:
Bat surveyor locations map

Address: 2 War Office Road,
Bamford, Rochdale,
OL11 5HR
JCA Ref: 18436/HC

NOT TO SCALE

	KEY
	Surveyed buildings
★	Surveyor locations
	Buildings (not surveyed)

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Appendix 3: Proposed Development Plan

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Moor Road

8 MOOR ROAD

SITE PLAN scale 1:200 @ A3

kimble roden
ARCHITECTS

Appendix 4: Photographic Evidence

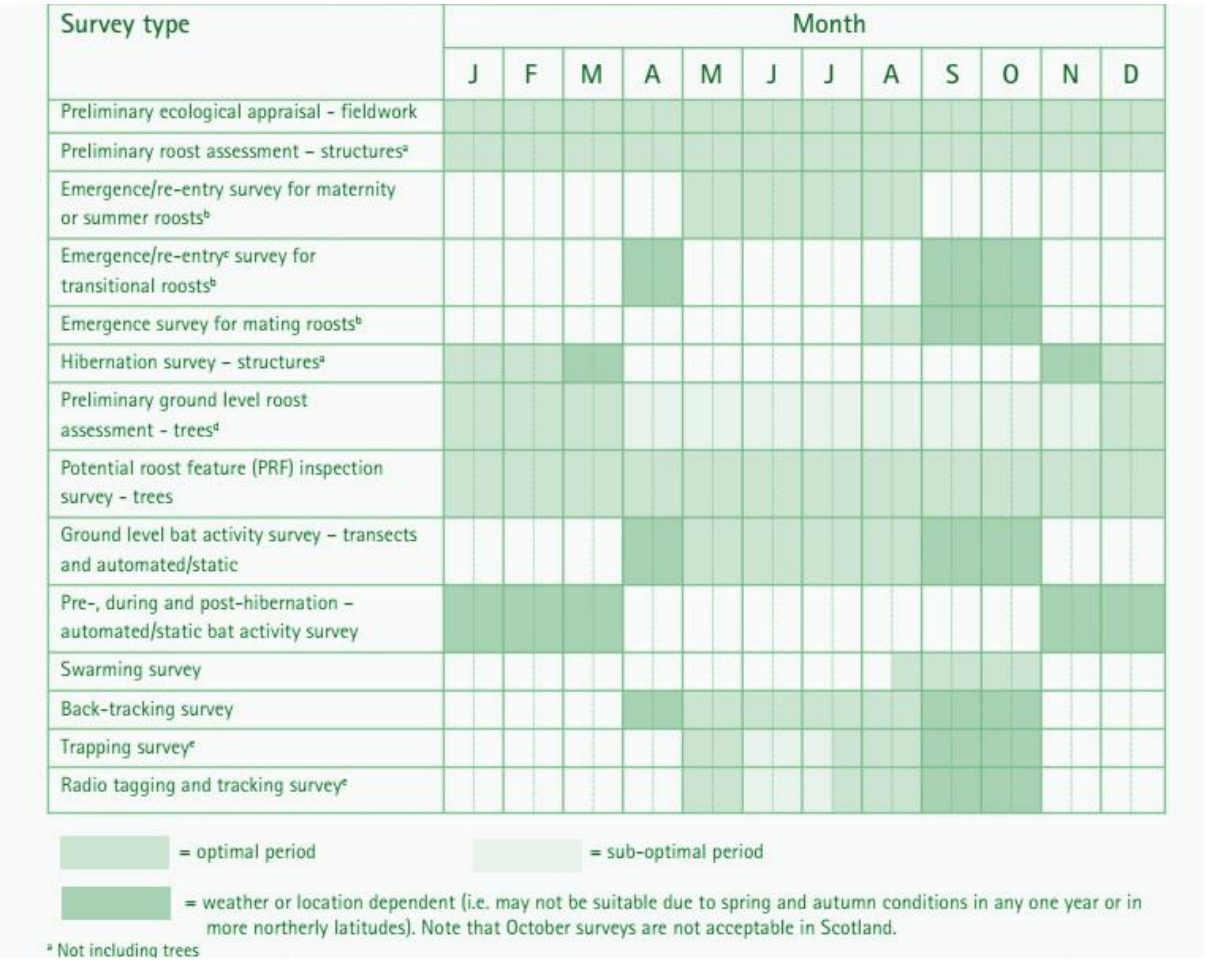


Photo 1: Entry point for the grey squirrel observed, the gap in the roof visible on the western aspect of the building,

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Appendix 5: Bat Survey Calendar

Figure 1: Survey timings calendar (taken from BCT: Bat surveys for professional Ecologists, Good Practice Guidelines; 3rd Edition).



Survey type	Month											
	J	F	M	A	M	J	J	A	S	O	N	D
Preliminary ecological appraisal - fieldwork												
Preliminary roost assessment – structures[a]												
Emergence/re-entry survey for maternity or summer roosts[b]												
Emergence/re-entry[c] survey for transitional roosts[b]												
Emergence survey for mating roosts[b]												
Hibernation survey – structures[a]												
Preliminary ground level roost assessment - trees[d]												
Potential roost feature (PRF) inspection survey - trees												
Ground level bat activity survey – transects and automated/static												
Pre-, during and post-hibernation – automated/static bat activity survey												
Swarming survey												
Back-tracking survey												
Trapping survey[e]												
Radio tagging and tracking survey[e]												

= optimal period = sub-optimal period

= weather or location dependent (i.e. may not be suitable due to spring and autumn conditions in any one year or in more northerly latitudes). Note that October surveys are not acceptable in Scotland.

[a] Not including trees

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Appendix 6: 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.

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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.

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Appendix 7: Author Qualifications

Adam West

Principal Ecologist BSc (Hons) Animal and Wildlife Management.

Adam joined JCA to lead the expanding ecology department. Having returned to education as a mature student, Adam studied Countryside Management for two years before undertaking a Batchelor's degree, for which he was awarded First Class Honours. Adam has many years' experience in ecological consultancy, working on projects ranging from individual planning applications to national infrastructure projects. Adam holds a Natural England Level 1 great crested newt survey class licence, a Natural England Level 2 bat survey class licence (and the Scottish and Welsh equivalents) and a CSCS card.

Amy Donaldson

Bsc (Hons) Zoology (International).

Amy joined JCA in 2022 after graduating with a First Class Honours from the University of Leeds. Amy volunteered for numerous years with the Northumberland Wildlife Trust to develop a variety of field surveying skills. In 2020 Amy began bat surveying, where she gained practical knowledge and experience in the field. Amy is looking forward to developing her report writing and data analysis skills with JCA, and is working towards her Level 1 bat survey class licence.

Audrey Bourdais Paull, Graduate Ecologist

BSc (Hons) Zoology.

Audrey graduated in 2020 in Zoology at the University of Leeds and joined JCA in 2022. Audrey volunteered for many years with various wildlife conservation and rescue organisations, as well as working on various projects to develop a variety of field survey techniques, report writing and data analysis skills. Audrey is looking forward to developing her ecology consultancy experience with JCA, as well as combining her previous dog training and detection work with ecology to expand into ecology detection dogs.

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The information and advice which we have prepared and provided is true and has been prepared and provided in accordance with the CIEEM's Code of Professional Conduct. We confirm that the opinions expressed are our true and bona fide opinions.

Signed



.....

Amy Donaldson

14/09/22

Reviewed by



.....

Audrey Bourdais Paull

14/09/22

Reviewed and authorised by



.....

Adam West *ACIEEM*

26/09/2022

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ECOLOGICAL SERVICES

Ecological Pre-Planning Services

- Phase 1 Habitat Surveys
- Great Crested Newt eDNA Sampling
- Protected species: Bat, Wintering and Nesting Bird, Badger, Amphibian, Otter, Water Vole, White-Clawed Crayfish, Dormice and Reptile Surveys.
- Preparation for Environmental Impact Assessment (EIA)
- Invasive Species Surveys
- Code for Sustainable Homes
- Butterfly & Insect Surveys

Ecological Post-Planning Services

- Biodiversity Enhancement Plans
- Protected Species Mitigation
- Ecological Management (Bat and Bird box installation and inspection)
- Planting Schemes
- Monitoring of bird or bat boxes.

ARBORICULTURAL SERVICES

Guidance for Architects & Developers

- British Standard 5837 Surveys
- Arboricultural Implications Assessments (AIA)
- Arboricultural Method Statements (AMS)

Advice for Engineers, Loss Adjusters and Insurers

- Tree Surveys for Subsidence
- Heave Assessment
- Tree Root Identification

Advice for Local Authorities and Social Housing

- Tree Safety Surveys
- Specialist Decay Detection
- Landscape and Orchard Design

Tree Advice for the Legal Profession

- Subsidence Litigation
- Personal Injury and Accident Investigation
- Expert Witness, Planning Inquiries and Appeals

Veteran Tree Management

- Ancient Woodland Management
- Veteran Tree Management

Tree Health and Pest and Disease Management

- Pest and Disease Surveys
- Tree Health Checks
- Disease Mitigation and Control

JCA Limited

Arboricultural & Ecological Consultants



HEAD QUARTERS

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