BAT EMERGENCE SURVEY REPORT

at

Heckmondwike Trade Centre
New North Road
Heckmondwike
West Yorkshire
WF16 9DP

Client:
J A Oldroyd & Sons Ltd

Client Address:
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WF15 6NS

Client Contact:
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JCA Ref:
20584a/ADo

Date of Report:
31/08/23

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	28/03/23	James Robinson	30/08/23	Alex Donovan	31/08/23	Alex Donovan	07/09/23	Adam West

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	
Bio-security Procedure Completed	
Lone Worker Procedure Completed	

Summary

JCA Ltd was commissioned by **J A Oldroyd & Sons Ltd** to provide ecological advice to inform works at **Heckmondwike Trade Centre**, hereafter referred to as 'the site'. The site is located at **New North Road, Heckmondwike, West Yorkshire, WF16 9DP**, Ordnance Survey (OS) National Grid Reference **SE 21466 23961**. The bat scoping survey undertaken on 28/03/23 identified one building with **low Bat Roost Potential (BRP)** which would be demolished as part of the planned proposal. Further surveys were recommended to determine the presence/likely absence of a roost.

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 30/08/23 to identify any bat use of the building. The surveys found no evidence of bat roosts in the building and low activity around the site.

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.

Contents

1. Introduction

1.1 Background

1.1.1 In February 2023, JCA Ltd was commissioned by **J A Oldroyd & Sons Ltd** to undertake a bat scoping survey of a site located at **Heckmondwike Trade Centre, New North Road, Heckmondwike, West Yorkshire, WF16 9DP** hereafter referred to as 'the site'. The bat scoping survey identified one building on site and no trees with bat roost potential that would likely be disturbed as part of the proposed work.

1.2 Details of Proposed Development

1.2.1 The scheme is development and erection of residential dwellings. To facilitate this development, the building currently on site will be demolished.

1.3 Site Location

1.3.1 The site is located at Ordnance Survey (OS) National Grid Reference **SE 21466 23961**, with nearby postcode **WF16 9DP**. The site lies approximately 375 meters Northeast of Heckmondwike town centre.

1.3.2 The site is bordered on all sides by residential development, with sporadic buildings related to light industrial use. In addition, there is a small area of broadleaf woodland habitat, approximately 45 meters to the southwest of the site, that boarders the Spen Valley green way, a linear habitat corridor travelling from the southeast to southwest of the site.

1.4 Scope of Works

1.4.1 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 – one dusk survey 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 Aims

1.5.1 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.

1.5.2 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.

1.5.3 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

1.6.1 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.

1.6.2 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.

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

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 March 2023. The local biological records centre, West Yorkshire Ecology Service (WYES), 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 2023.

2.2.2 The surveys were led by Alex Donovan (Graduate Ecologist, JCA Ltd) and assisted by Eleanor Clark (Assistant Ecologist, JCA Ltd), Lorraine Spink, and Magda Cygan.

2.3 Emergence Surveys

2.3.1 Dusk emergence 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 scoping survey conducted on 28/03/23 (JCA Report Ref: 20584/JR) the building on site was subject to an internal and external survey to establish the suitability of the structure to support roosting bats in accordance with Collins (2016). Dusk emergence and 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.

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	Low	1

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, depending on activity levels recorded during the survey.

2.3.6 During the surveys, the building was monitored using two Sannce 4CH 1080N Security Camera Systems. The site was illuminated by Tonton Infrared Illuminators.

2.3.7 Bat calls were monitored using Anabat Scout 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

2.3.8 Recorded bat calls were later analysed with Anabat Insight software.

2.4 Survey Constraints

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 survey.

Date	Sunset/sunrise time	Start & finish time	Temp - Start and Finish (ºC)		Wind speed (mph)	Cloud cover (%)	Precipitation
30/08/23	20:02	19:47 – 21:32	16	13	11	15	None

2.4.3 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.

3. Results

3.1 Desktop study results

3.1.1 Local Data Centre Records: WYES 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 WYES. **Table 5** summarises all bat roost records within 2km of the site received from WYES.

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

Common Name	Scientific Name	On site	Within 500m	500-1000m	1001-2000m	Notes
Unidentified bat of the genus *Myotis*	*Myotis* sp.	×	×	✓	✓	2 records were indicated the nearest record is 515m with the furthest been approximately 1100m away.
Noctule	*Nyctalus noctula*	×	✓	×	✓	4 records have been highlighted the nearest been 414 meters away and the furthest approximately 1875 meters away.
Common pipistrelle	*Pipistrellus pipistrellus*	×	✓	×	✓	2 records have been highlighted both been approximately 1170 meters away.
Soprano pipistrelle	*Pipistrellus pygmaeus*	×	×	✓	×	1 record has been highlighted, 515 meters away from the site.
Brown long-eared bat	*Plecotus auritus*	×	×	✓	×	1 record has been highlighted, 515 meters away from the site.
Leisler's bat	*Nyctalus leisleri*	×	×	×	✓	1 record has been highlighted approximately 1876 meters away.
Pipistrelle sp.	*Pipistrellus* sp.	×	✓	✓	✓	16 records have been highlighted the nearest been 414 meters away, and the furthest been approximately 1960 meters away.

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

Common Name	Scientific Name	On site	Within 500m	500-1000m	1001-2000m	Notes
Vesper bat species	*Vespertilionidae*	×	×	×	✓	Five roosts have been recorded between 2000 and 2006. The nearest being 1224 meters away, with a count of approximately 100 adults noted to be using the roost. In 2002 a maternity roost was identified 1543 meters from the site with over 200 counts of adults using the roost. Two of the records appear to be of the same roost 1932 meters away, recorded a year apart between 2005 and 2006, no abundance has been noted for either record.
Common pipistrelle	*Pipistrellus pipistrellus*	×	×	×	✓	1 roost highlighted in 2003, 1364 meters away. But no abundance or usage was noted for the roost.
Pipistrelle sp.	*Pipistrellus sp.*	×	×	×	✓	Four roosts were notified with the nearest been 1079 meters away, recorded in 2014 with a count of 2 been noted, this is likely to be a day roost. Two of the records appear to be of maternity roosts, the nearest been 1300 meters away, in a residential dwelling, no details of abundance or usage has been notified. The further of the two was 1960 meters away, again within a residential dwelling, with no details of abundance or usage been noted.

3.2 Field Survey Results

3.2.1 30/08/23 dusk emergence survey Building 1 – Location 1

Two bats were detected during the survey. The first detection was made at 21:13, 71 minutes after sunset. One species was identified: common pipistrelle. Commuting behaviour only was recorded. No species were observed to emerge from the building being surveyed.

3.2.2 30/08/23 dusk emergence survey Building 1 – Location 2

Five bats were detected during the survey. The first detection was made at 20:38, 36 minutes after sunset. One species was identified: common pipistrelle. Commuting and foraging behaviour was recorded. No species were observed to emerge from the building being surveyed.

3.2.3 30/08/23 dusk emergence survey Building 1 – Location 3

Four bats were detected during the survey. The first detection was made at 20:37, 35 minutes after sunset. One species was identified: common pipistrelle. Commuting and foraging behaviour was recorded. No species were observed to emerge from the building being surveyed.

3.2.4 30/08/23 dusk emergence survey Building 1 – Location 4

Three bats were detected during the survey. The first detection was made at 20:37, 35 minutes after sunset. One species was identified: common pipistrelle. Commuting behaviour only was recorded. No species were observed to emerge from the building being surveyed.

4. Interpretation of Survey Results

4.1.1 No bats were observed emerging from the surveyed building. The number of commuting passes/foraging activity recorded during the survey suggests a low activity level in this area of the site.

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 1.6 and **Appendix 1**).

5.1.2 The limited level of bat activity observed during the survey suggests that the building is situated in an area not favoured by bats, so the impact will be minor.

5.1.3 The site is not well used by commuting and foraging bats, therefore disturbance to local bat populations during works will be correspondingly minor.

6. Recommendations

5.1.4 Should the proposed scheme change, and any of the other trees or buildings on site be programmed to be directly impacted, the advice of a suitably qualified ecologist must be sought prior to the commencement of works. If such trees or buildings have PRFs it may be necessary to undertake bat surveys to determine presence or likely absence of roosts in these trees and/or buildings. Surveys can be undertaken between May-September, inclusive.

5.1.5 In the unlikely event a bat is found within the building 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.

5.1.6 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.

5.1.7 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 Bat Conservation Trust and Institute of Lighting Professionals (2023) will aid in planning lighting schemes with the aim of limiting the impact that lighting may have on local bat populations. New lighting schemes should be approved by an appropriately experienced ecologist prior to construction.

7. References

Bat Conservation Trust and Institute of Lighting Professionals (2023) *Guidance Note 08/23: Bats and artificial lighting in the UK*. ILP, Rugby

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

Institution of Lighting Professionals (2023) *Bats and Artificial Lighting at Night (GN08/23)* Available at: https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/

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

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

Relevant Legislation:

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

The Conservation of Habitats and Species (Amendment) (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

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.

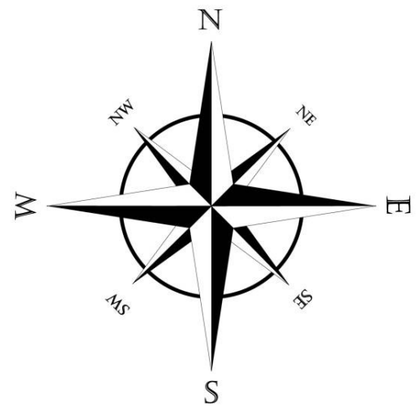
In this interpretation, a bat roost is "any structure or place which any wild [bat]...uses for shelter or protection". Because bats tend to reuse the same roosts, legal opinion is that the roost is protected whether or not the bats are present at the time.

Appendix 2: Site Plan and Surveyor Locations

Site name & address:
Heckmondwike Trade Centre
New North Road
Heckmondwike
WF16 9DP

Key

- Surveyed building
- Surveyor locations

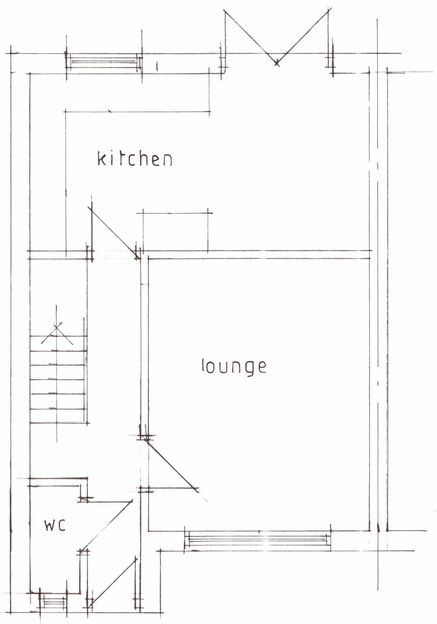


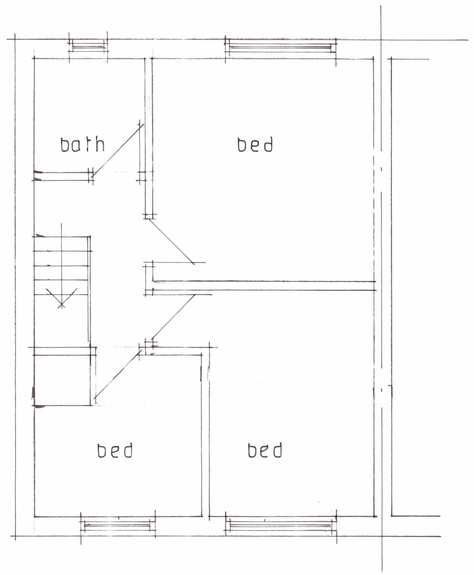
Scale
0 7.5 15 m

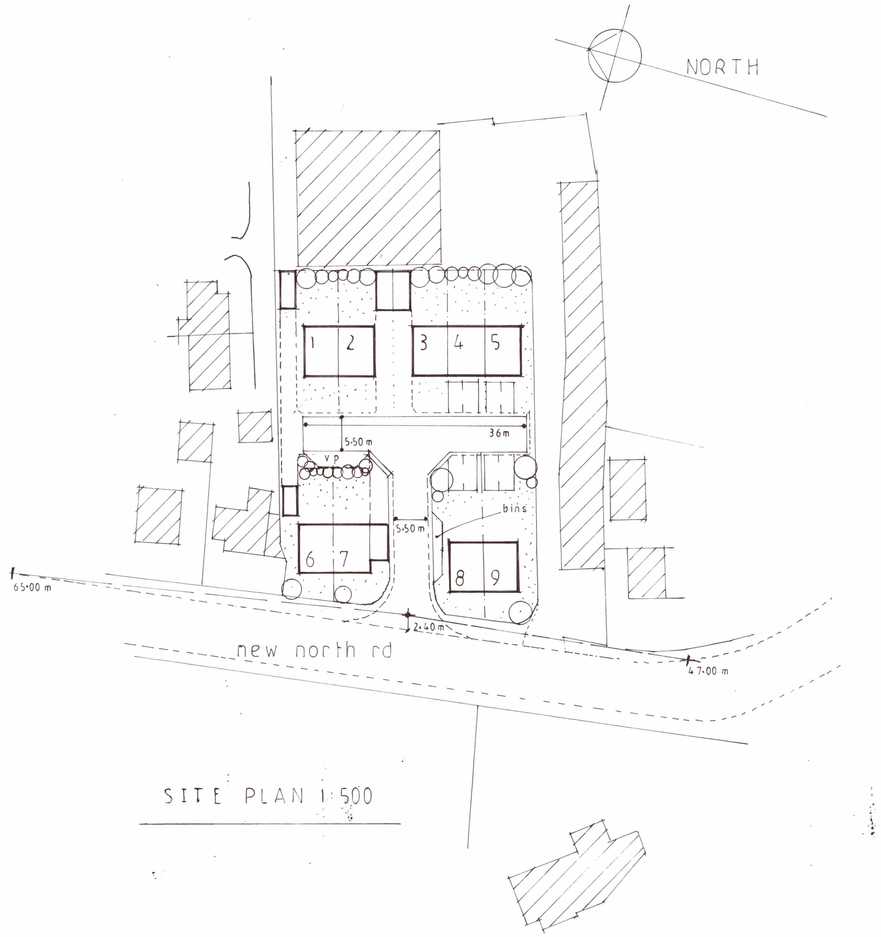
Site: Heckmondwike Trade Centre	Client: J A Oldroyd & Sons Ltd
Project: Bat Emergence Survey	Author: Alex Donovan
Plan ref: 20584a	Revision

Appendix 3: Proposed Development Plan

FRONT







SITE PLAN 1:500

Notes :-

- ALL DIMENSIONS MUST BE CHECKED ON SITE PRIOR TO WORKS STARTING.
- DO NOT SCALE.
- THIS DRAWING AND DESIGN REMAINS THE COPYRIGHT OF J.A.OLDROYD M.R.I.C.S AND MAY NOT BE REPRODUCED WITHOUT PERMISSION.
- ALL WORKS MUST BE CARRIED OUT IN ACCORDANCE WITH CURRENT BUILDING REGULATIONS, CODES OF PRACTICE, AND PLANNING OFFICER'S REQUIREMENTS.
- ALL MATERIALS MUST COMPLY WITH CURRENT BRITISH STANDARDS IN SITUATION USED.

THIS IS A NOTIFIABLE PROJECT UNDER THE CONSTRUCTION & DESIGN REGULATIONS 2007. THE DEVELOPER MUST BY LAW INFORM THE LOCAL HEALTH & SAFETY EXECUTIVE AND ALSO OBTAIN THE SERVICES OF A C.D.M. CO-ORDINATOR.

Party Walls
The Part Wall Act etc. Act 1996 came into effect on 1st July 1997. If someone is planning to carry out building work which involves: work on an existing wall shared with another property; or new building on the boundary with a neighbouring property; or excavating near a neighbouring building, they should find out whether that work falls within the scope of the Act. If it does, they must serve the statutory notice on all affected owners. The government has produced an explanatory leaflet which is available from planning services.

A		
	Date	Revisions

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Drawing Title
PRELIM

scale 1 : 50

date AUG '22 | drawn by

Drg No 22145 | Rev

Appendix 4: 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

Appendix 5: 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.

Appendix 6: Author Qualifications

Alex Donovan, Graduate Ecologist

MBIOL, BSc Biology (Industrial).

Alex joined JCA in 2023 after graduating from the University of Leeds with a First Class Honours Integrated Master's degree in Biology. As part of his degree programme, Alex spent an industrial placement year working in the Uplands Research Department of the Game and Wildlife Conservation Trust, assisting on various ecological surveys and projects. Alex is a registered Trainee Bird Ringer, licensed through the BTO, and has previously conducted seasonal bat emergence and transect surveys.

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 in Animal and Wildlife Management, 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 and a Natural England Level 2 bat survey class licence.

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

.....

Alex Donovan

31/08/23

.....

Adam West *ACIEEM*

07/09/2023

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

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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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