BAT EMERGENCE SURVEY REPORT

at
Glenaire
21 Bryan Road
Huddersfield
West Yorkshire
HD2 2AJ

Client:
Alan Stopher

Client Address:
Glenaire
21 Bryan Road
Huddersfield
HD2 2AJ

Client Contact:
07500 828123 (Tel)

JCA Ref:
20859a/AWe

Date of Report:
05/08/2023

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	18/05/23	Adam West	04/07/23 & 01/08/23	Adam West (lead surveyor)	05/08/23	Adam West	07/08/23	Alex Donovan

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	

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Summary

JCA Ltd was commissioned by **Alan Stopher** to provide ecological advice to inform works at **Glenaire**, hereafter referred to as 'the site'. The site is located at **21 Bryan Road, Huddersfield, West Yorkshire, HD2 2AJ**, Ordnance Survey (OS) National Grid Reference SE 12942 18126. The Preliminary Bat Roost Potential (BRP) survey undertaken on 11/05/23 identified two buildings, a residential dwelling and a garage, with Moderate Bat Roost Potential (BRP) which would be disturbed during the proposed works. Further surveys were recommended on both buildings to determine the presence/likely absence of a roost in either 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 04/07/23 and 01/08/23 to identify any bat use of the house and garage. The surveys found no evidence of bats roosting in either building and only low levels of bat activity across 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.

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1. Introduction

1.1 Background

1.1.1 In May 2023, JCA Ltd was commissioned by **Alan Stopher** to undertake a Bat Roost Potential (BRP) survey of a site located at **Glenaire, 21 Bryan Road, Huddersfield, West Yorkshire, HD2 2AJ,** hereafter referred to as 'the site'. The BRP survey identified the two buildings on site 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 for the existing residential building on site to be retrofitted to a high environmental standard on its existing footprint. This will involve external insulation including reroofing.

1.3 Site Location

1.3.1 The site is located at Ordnance Survey (OS) National Grid Reference SE 12942 18126, with nearby postcode **HD2 2AJ.** The site is bordered on all sides by residential properties, most with large, vegetated gardens. Tree cover around the site is extensive and provides good connectivity to areas of good bat foraging habitat in the vicinity.

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 – two dusk emergence surveys, on separate days, during the summer to assess whether bats are using the building 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

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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.

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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.

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2. Methodology

2.1 Desktop Study

2.1.1 A desktop study was carried out as part of the BRP survey undertaken by JCA in May 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 July and August 2023.

2.2.2 The surveys were led by Adam West, who holds an NE Level 2 bat survey class licence (registration number **2016-24724-CLS-CLS**).

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 11/05/23 (JCA Report Ref: 20859/AWe) all 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). Dusk emergence 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	Moderate	2
Building 2	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, depending on activity levels recorded during the survey.

2.3.1 During the survey, the building was monitored using a Sannce 4CH 1080N Security Camera System. The site was illuminated by Tonton Infrared Illuminators.

2.3.2 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 exiting the buildings.
- Recoded bat calls were later analysed and verified using Anabat Insight analysis software.

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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 surveys are given in **Table 3** below:

Table 3 Weather Conditions during the surveys.

Date	Sunset time	Start & finish time	Temp - Start and Finish (°C)		Wind speed (Bf)	Cloud cover (%)	Precipitation
04/07/23	21:39	21:18-23:09	14	12	1	40	None
01/08/23	21:04	20:49-22:34	17	15	2	100	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.

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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	Within 1km	Within 2km	Notes
Leisler's	*Nyctalus leisleri*	×	×	×	✓	Two field records from 2015.
Noctule	*Nyctalus noctula*	×	×	✓	✓	Four field records between 2013 and 2017, including one record of foraging.
Common pipistrelle	*Pipistrellus pipistrellus*	×	✓	✓	✓	Nine field records between 2010 and 2017, including three records of foraging.
Unidentified bat species	*Vespertilionidae* spp.	×	×	×	✓	Single field record from 2017.

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
Common pipistrelle	*Pipistrellus pipistrellus*	×	×	✓	×	Two roosts recorded in 2013 and 2018. The 2018 record is a hibernation roost 633m from site. The 2013 record is an unclassified roost 524m from site.
Unidentified bat of the genus *Pipistrellus*	Pipistrellus sp.	×	×	×	✓	One maternity roost recorded 1525m from the site in 2019.

3.2 Field Survey Results

3.2.1 04/07/23 dusk emergence survey Building 1 – Location 1

Eight bat recordings were made during the survey. The first detection was made at 22:09, 30 minutes after sunset. One species was identified: common pipistrelle. Commuting and foraging behaviour was recorded. No species were observed to emerge from buildings being surveyed.

3.2.2 04/07/23 dusk emergence survey Building 2 – Location 2

Six bat recordings were made during the survey. The first detection was made at 22:09, 30 minutes after sunset. One species was identified: common pipistrelle. Commuting and foraging behaviour was recorded. No species were observed to emerge from buildings being surveyed.

3.2.3 04/07/23 dusk emergence survey Building 2 – Location 3

15 bat recordings were made during the survey. The first detection was made at 22:09, 30 minutes after sunset. One species was identified: common pipistrelle. Commuting behaviour was recorded. No species were observed to emerge from buildings being surveyed.

3.2.1 04/07/23 dusk emergence survey Building 1 – Location 4

17 bat recordings were made during the survey. The first detection was made at 22:09, 30 minutes after sunset. One species was identified: common pipistrelle. Commuting and foraging behaviour was recorded. No species were observed to emerge from buildings being surveyed.

3.2.2 01/08/23 dusk emergence survey Building 1 – Location 1

Five bat recordings were made during the survey. The first detection was made at 21:11, six minutes after sunset. One species was identified: common pipistrelle. Commuting behaviour only was recorded. No species were observed to emerge from buildings being surveyed.

3.2.3 01/08/23 dusk emergence survey Building 2 – Location 2

Six bat recordings were made during the survey. The first detection was made at 21:53, 49 minutes after sunset. Two species were identified: noctule and common pipistrelle. Commuting behaviour only was recorded. No species were observed to emerge from buildings being surveyed.

3.2.4 01/08/23 dusk emergence survey Building 2 – Location 3

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Seven bat recordings were made during the survey. The first detection was made at 21:12, seven minutes after sunset. One species was identified: common pipistrelle. Commuting behaviour was recorded. No species were observed to emerge from buildings being surveyed.

3.2.5 01/08/23 dusk emergence survey Building 1 – Location 4

Ten bat recordings were made during the survey. The first detection was made at 21:11, six minutes after sunset. One species was identified: common pipistrelle. Commuting and foraging behaviour was recorded. No species were observed to emerge from buildings being surveyed.

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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 on this 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 A).

5.1.2 Given the low levels of bat activity across the site it is not anticipated that the proposed works will have a negative impact on local bat populations.

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6. Recommendations

5.1.3 As bats have not been confirmed to be roosting at **Glenaire**, a Bat Mitigation Licence from Natural England is not required. As no roosts were found in the building, bats do not pose any constraint to the development.

5.1.4 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.

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7. References

Bat Conservation Trust and Institute of Lighting Professionals (2018) *Guidance Note 08/18: Bats and artificial lighting in the UK*. ILP, Rugby

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

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

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Appendices

Appendix 1: Legislation Pertaining to the Protection of Bats

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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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Appendix 2: Surveyor Locations

Address: Glenaire, 21 Bryan Road, Huddersfield, HD2 2AJ
JCA Ref: 20859/AWe

NOT TO SCALE

KEY	
	Surveyed building
	Surveyor location
	Buildings (not surveyed)

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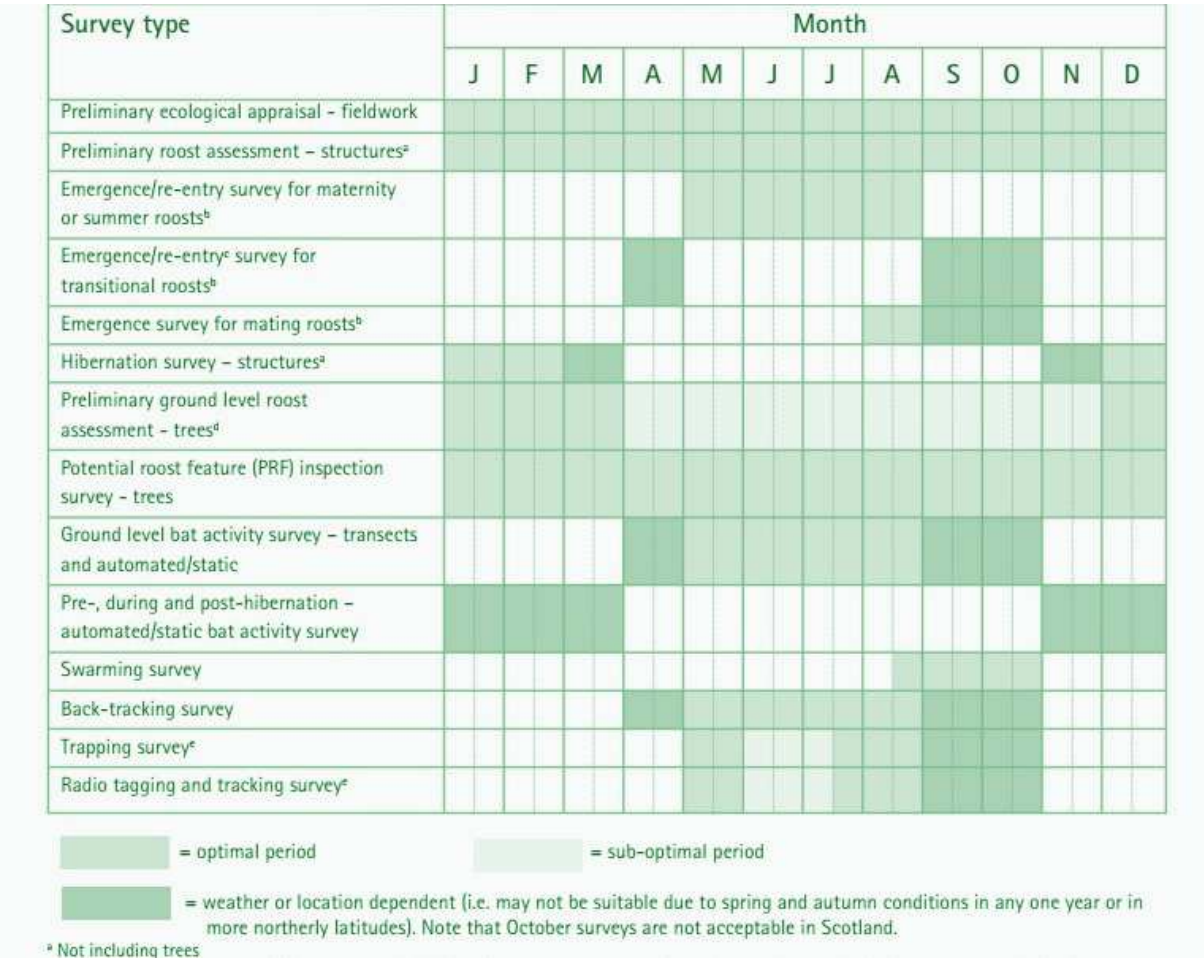
Appendix 3: Bat Survey Calendar

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



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.

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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 5: 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 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.

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.

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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

.....

Adam West *ACIEEM*

05/08/2023

Reviewed by

.....

Alex Donovan

07/08/2023

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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

Web: www.jcaac.com

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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

Unit 80 Bowers Mill,
Branch Road,
Barkisland
Halifax, HX4 0AD

Company Reg No: 05005041