BAT EMERGENCE AND RE-ENTRY SURVEY REPORT

at

Nether Mill Barn
Barnsley Road
Penistone
South Yorkshire
S36 8AD

Client:
Dawson Williamson Architects

Client Address:
Hope Park Business Centre
Bradford
BD5 8HH

Client Contact:
01274 551300 (Tel)

JCA Ref:
18369a/HC

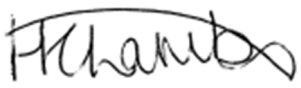
Date of Report:
07/09/22

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	11/05/22	Audrey Bourdais Paull	06/05/22	Megan Brown	07/09/22	Helen Chambers	09/08/22	Audrey Bourdais Paull
			03/08/22	Adam West (lead surveyor)				
			23/08/22	Adam West (lead surveyor)			14/09/22	Adam West
			06/09/22	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	
Bio-security Procedure Completed	
Lone Worker Procedure Completed	

Summary

JCA Ltd was commissioned by **Dawson Williamson Architects** to provide ecological advice to inform works at **Nether Mill Barn**, hereafter referred to as 'the site'. The site is located at **Barnsley Road, Peniston, South Yorkshire, S36 8AD,** Ordnance Survey (OS) National Grid Reference SE 24567 03898. The Preliminary Ecological Appraisal (PEA) undertaken on 06/05/22 identified one building with Bat Roost Potential (BRP) which would be disturbed by the development. Further surveys were recommended on 16/05/22 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 03/08/22, 23/08/22 and 06/09/22 to identify any bat use of the building. The surveys found moderate levels of activity along the southwest edge of the building and one common pipistrelle was observed emerging from the building during the emergence survey on 23/08/22.

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 April 2022, JCA Ltd was commissioned by **Dawson Williamson Architects** to undertake a Preliminary Ecological Appraisal (PEA) of a site located at **Nether Mill Barn**, **Barnsley Road** hereafter referred to as 'the site'. The PEA/bat scoping survey identified one building 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 the conversion of Nether Mill Barn into a veterinary surgery on behalf of Donaldson's Vets Ltd with associated public parking spaces.

1.3 Site Location

1.3.1 The site is located at Ordnance Survey (OS) National Grid Reference SE 24567 03898, with nearby postcode **S36 8AD**. The site is surrounded largely by a mixture of agricultural fields and residential areas. Bordering the site to the east is a wooded river stretch Scout Dike flowing from Local Wildlife Site (LWS) Scout Dike Reservoir. To the south, the site is bordered directly by Barnsley Road (A628) with the River Don running adjacent on the opposite side of the A road.

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 – three 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

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 PEA undertaken by JCA in May 2022. The local biological records centre, Barnsley Biological Records Centre (BBRC), 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 and September 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 PEA conducted on 06/05/22 (JCA, 2022) all structures/trees/buildings on site were subject to an internal and external survey (where possible) 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.

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	High	3

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 Anabat Scout and Echometer EM3+ 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

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 (°C)		Wind speed (mph)	Cloud cover (%)	Precipitation
03/08/22	05:25	03:55-05:40	18	17	2	100	Light drizzle at the beginning.
23/08/22	20:17	20:02-21:47	19	19	2	30	0
06/09/22	19:45	19:30-21:15	17	16	1	60	0

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: BBRC 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 BBRC. **Table 5** summarises all bat roost records within 2km of the site received from BBRC.

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

Scientific Name	Common Name	Designation	Latest Date	Number of records	Distance from Site (m)
Myotis sp.	Unidentified *Myotis* species	WCA Sch 5 LBAP	2020	6	576
Myotis mystacinus/brandtii	Whiskered/Brandt's bat	WCA Sch 5 LBAP S41	2019	2	1325
Myotis nattereri	Natterer's bat	WCA Sch 5 LBAP	2019	2	1325
Nyctalus	*Nyctalus* bat species	WCA Sch 5 LBAP	2019	2	1325
Nyctalus noctula	Noctule bat	WCA Sch 5 LBAP S41	2020	4	576
Pipistrellus	Pipistrelle bat	WCA Sch 5 LBAP	2021	11	119
Pipistrellus pipistrellus	Common pipistrelle	WCA Sch 5 LBAP S41	2020	11	576
Pipistrellus pygmaeus	Soprano pipistrelle	WCA Sch 5 S41 LBAP	2020	7	576

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

Scientific Name	Common Name	Roost type	Date	Distance from Site (m)
Myotis sp.	Probable whiskered/Brandt's bat	Single individual	2019	1330 m
Pipistrellus pipistrellus	Common pipistrelle	Not recorded	1997	253 m
Pipistrellus pipistrellus	Common pipistrelle	Maternity roost	1988	326 m
Pipistrellus pipistrellus	Common pipistrelle	Maternity roost	1988	326 m
Pipistrellus pipistrellus	Common pipistrelle	Maternity roost	1989	326 m
Pipistrellus pipistrellus	Common pipistrelle	Occasional single individual	1991	326 m
Pipistrellus pipistrellus	Common pipistrelle	Occasional 3 individuals	1991	326 m
Pipistrellus pipistrellus	Common pipistrelle	Occasional single individual	1993	326 m
Pipistrellus pipistrellus	Common pipistrelle	Maternity roost	1988	326 m
Pipistrellus pipistrellus	Common pipistrelle	Maternity roost	1991	461 m
Pipistrellus pipistrellus	Common pipistrelle	Maternity roost	1991	461 m
Pipistrellus pipistrellus	Common pipistrelle	Not recorded	2008	1062 m
Pipistrellus pipistrellus	Common pipistrelle	Maternity roost	2001	1665 m
Pipistrellus pipistrellus	Common pipistrelle	Maternity roost	2002	1665 m

3.2 Field Survey Results

3.2.1 03/08/22 dawn re-entry survey Building 1 – Location 1

One bat was detected during the survey. The last detection was made at 04:34, 51 minutes before sunrise. One species was identified: noctule. Commuting behaviour was recorded. No bats were observed entering the building surveyed.

3.2.2 03/08/22 dawn re-entry survey Building 1 – Location 2

10 bats were detected during the survey. The last detection was made at 04:48, 37 minutes before sunrise. Two species were identified: common pipistrelle and noctule. Commuting and foraging behaviour was recorded. No bats were observed entering the building being surveyed.

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

Four bats were detected during the survey. The first detection was made at 20:50, 33 minutes after sunset. One species was identified: common pipistrelle. These were unseen during the survey. No bats were observed emerging from the building being surveyed.

3.2.4 23/08/22 dusk emergence survey Building 1 – Location 2

18 bats were detected during the survey. The first detection was made at 20:31, 14 minutes after sunset. One species was identified: common pipistrelle. Commuting, foraging and roosting behaviour was recorded. One common pipistrelle bat was observed to emerge from underneath a roof tile of the building being surveyed (see **Appendix 4, Photo 1-2**).

3.2.5 06/09/22 dusk emergence survey Building 1 – Location 1

Six bats were detected during the survey. The first detection was made at 20:07, 22 minutes after sunset. One species was identified: common pipistrelle. Commuting and foraging behaviour was recorded. No bats were observed emerging from the building being surveyed.

3.2.6 06/09/22 dusk emergence survey Building 1 – Location 2

Six bats were detected during the survey. The first detection was made at 20:08, 23 minutes after sunset. One species was identified: common pipistrelle. Commuting behaviour was recorded. No bats were observed emerging from the building being surveyed.

4. Interpretation of Survey Results

4.1.1 In total, 45 commuting passes/foraging activities were recorded during the surveys. The activity was mostly concentrated towards the rear of the property, at the north-west corner of the building, where surveyor 2 was positioned. Most of the activity consisted of bats using the corridor between the building and the adjacent farmhouse to the rear as foraging grounds and/or a commuting corridor. Two species of bat were detected using the site for commuting and foraging purposes, including common pipistrelle and noctule.

4.1.2 During the dusk emergence survey on 23/08/22, one common pipistrelle bat was observed emerging from underneath a roof tile of the north-western elevation of the building being surveyed (see **Appendix 4, Photo 1**). This is classified as a common pipistrelle day roost. No further bats were recorded in the remaining survey using this building as a roost.

5. Impacts of the Scheme

5.1.1 The emergence/re-entry surveys recorded moderate levels of bat activity around the site. One common pipistrelle bat was observed emerging from the building being surveyed during the dusk emergence survey carried out on 23/08/22 (see **Appendix 4, Photo 1-2**).

5.1.2 As the works include the renovation of the building onsite, this will impact the roost which was identified during the surveys. The roost identified within the building will be permanently lost under the current proposed development plans.

5.1.3 However, it is possible to mitigate the loss of this roost by incorporating a new artificial roost within the development plans of the building onsite. This will allow the bats to remain onsite and continue to use the site for roosting, commuting and foraging purposes.

5.1.4 The site is used by commuting and foraging bats which will be disturbed should night working or additional lighting be required.

6. Recommendations

6.1.1 The emergence/re-entry surveys recorded moderate levels of bat activity around the site and one instance of emergence from the building.

6.1.2 With this in mind, the following recommendations are made with respect to bats at **Nether Mill Barn, Penistone**.

6.1.3 As bats have been confirmed to be roosting at **Nether Mill Barn** a Bat Mitigation Licence must be applied for from Natural England, before renovation and/or demolition works begin and a mitigation plan devised so the development causes as little impact on local bat populations as possible.

6.1.4 The Mitigation Licence should include a sub section on bat enhancement features such as lighting schemes, bat boxes and a temporary roost box positioned on site before the renovation and/or demolition of the buildings begins, to ensure there is no loss of bat roosting locations as a result of the proposed development.

6.1.5 Should the proposed scheme change 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.

6.1.6 In the 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.

6.1.7 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.

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

7. References

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

JCA (2022). Preliminary Ecological Appraisal. JCA Ref: 18369/MB

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

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 (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:

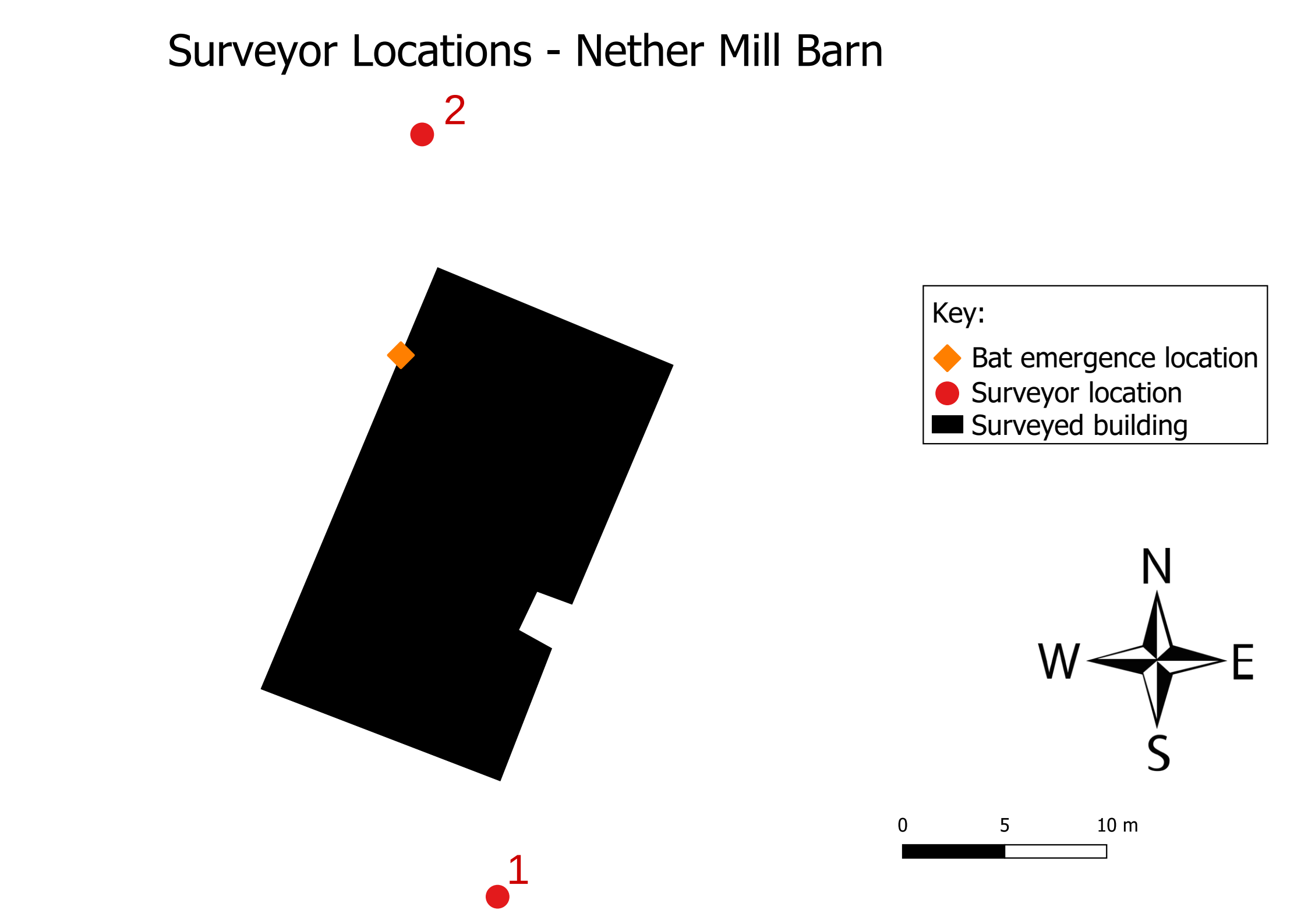
- deliberately or recklessly capture, injure or kill a bat
- deliberately or recklessly disturb in a way that would affect their local distribution or abundance, or affect their ability to survive, breed or rear young
- damage or destroy a bat roost (this is an ‘absolute’ offence)
- intentionally or 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

Surveyor Locations - Nether Mill Barn



Appendix 3: Photographic Evidence

Photo 1: Bat emergence point on building (emergence survey 23/08/22).

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

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.

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.

Helen Chambers, Seasonal Ecologist

MSc by Research in Environmental Studies, BSc (Hons) Wildlife Conservation with Zoo Biology.

Helen joined JCA in 2022 after completing her master's by research degree at the University of Salford. In 2019 Helen graduated with First Class Honours BSc Wildlife Conservation with Zoo Biology, where she gained theoretical knowledge of, and practical experience with, wildlife monitoring and wildlife legislation. She is hoping to further develop her ecological surveying and report writing skills at JCA.

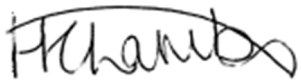
Amy Donaldson, Graduate Ecologist

Bsc (Hons) Zoology.

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.

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



.....

Helen Chambers

07/09/22

Reviewed by

.....

Audrey Bourdais Paull

08/09/22

Reviewed and authorised by

.....

Adam West *ACIEEM*

14/09/2022

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

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