Site: Harden Grange

Report: Bat Survey

Client: Spoke Limited

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Table of Contents

1 INTRODUCTION 5
1.1 Background to Development 5
1.2 Objectives 5
1.3 Agreed Brief 5

2 METHODOLOGY 6
2.1 Desk Study 6
2.2 General 6
2.3 Inspection for Signs of Roosting Bats 6
2.4 Dusk Emergence Surveys 6
2.5 Limitations 7

3 RESULTS 8
3.1 Desk Study 8
3.2 Surrounding Habitat 8
3.3 Inspection for Signs of Roosting Bats 8
3.4 Dusk Emergence Surveys 8
3.5 Summary of Current Bat Status 9

4 RECOMMENDATIONS 10
4.1 Potential Impacts of the Development 10
4.2 Legal and Planning Policy Status 10
4.3 Further Survey 10
4.4 Licensing 10
4.5 Mitigation 11

5 REFERENCES 13
5.1 Cited References 13

6 FIGURES 14
6.1 Figure 1 – Site Location 14
6.2 Figure 2 – Photographs 14
6.3 Figure 3 – Evidence of Bats 14
6.4 Figure 4 – Key Flight Lines 14
6.5 Figure 5 – Mitigation 14

7 APPENDIX 1 – PROPOSED SITE LAYOUT 15

8 APPENDIX 2 – BATS 16
8.1 Biology 16
8.2 Legislation and Planning Policy 16
8.3 Planning Policy 17

8.4 Biodiversity Action Plans and Species of Principal Importance 18
8.5 Glossary of Bat Terms 18
8.6 References 18

9 APPENDIX 3 – DESK STUDY RESULTS 20

10 APPENDIX 4 – METHOD STATEMENT 22
10.1 Introduction 22
10.2 Summary of Mitigation Strategy 22
10.3 Works to be Undertaken by the Ecologist 22
10.4 Works to be Undertaken by the Developer 23
10.5 Population Monitoring, Roost Usage etc 24
10.6 Mechanism for Ensuring Delivery 24
10.7 Indicative Timetable of Works 24

1 Introduction

1.1 Background to Development

1.1.1 A planning application is being prepared which details plans to convert the stables at Harden Grange into five residential properties.

1.1.2 Harden Grange is located in a rural location between Harden and Bingley in West Yorkshire. The stables building surveyed is located at Ordnance Survey Gid Reference SE 09595 38281 and is referred to as 'the site'. The building consists of three sections (north, east and west) surrounding an enclosed courtyard; it is currently used only for storage purposes.

1.1.3 A previous bat scoping assessment and one dusk activity survey were carried out by John Gardner in July 2022. Bat droppings were found within the building to the east and north and several potential roost features were found including structural cracks and gaps around windows and doors. This scoping assessed the building to be of "high" bat roost potential. The subsequent dusk emergence survey observed a brown long-eared bat (*Plecotus auritus*) hanging from a roof truss in the north-east and potential common pipistrelle (*Pipistrellus pipistrellus*) emergences from the east aspect, therefore the building was confirmed to be a bat roost and further survey and a Natural England licence was recommended.

1.2 Objectives

1.2.1 The purpose of this report is to identify ecological constraints to a potential development at Harden Grange, Bingley. The assessment therefore sought to establish the location of roosts, establish the value of the species identified, and assess the potential for development. This information will be used to inform a planning application.

1.3 Agreed Brief

1.3.1 On 15th August 2022, BL Ecology Ltd was commissioned to undertake a bat assessment of the site. The agreed brief was to:

- Undertake a desk study with West Yorkshire Bat Group;
- Undertake two dusk emergence surveys of the building impacted by the proposed development; and
- Submit a full technical report with associated mapping, highlighting the methods, results, legal and planning policy constraints and how these may be overcome through mitigation and licensing.

2 Methodology

2.1 Desk Study

2.1.1 A desk study was undertaken with the West Yorkshire Bat Group who provided records within 2km of the site. Desk studies are undertaken to find historic records of roosting bats within the immediate vicinity of the proposed development in order to assess the likely impact on bats.

2.2 General

2.2.1 A survey area was defined which included the stables building at Harden Grange. No work is currently planned to involve the trees around the site, therefore no trees were included in the assessment.

2.3 Inspection for Signs of Roosting Bats

2.3.1 The building was surveyed for updated signs of bat presence, which involved an internal inspection. The walls, the floor, windows and ledges were assessed for signs of roosting bats using binoculars and a high-powered torch. Signs searched for included bat droppings on surfaces or on roof beams, dead juvenile bats, scratch and grease marks around entrances, and noises of bats calling from within the roost.

2.3.2 Bat droppings found were sent to Warwick University for DNA analysis to determine the species.

2.4 Dusk Emergence Surveys

2.4.1 Ecologists were located around the building to ensure all potential roosts were covered sufficiently. Each surveyor was equipped with an Echo Meter Touch 2 Pro (EMT) bat detector. Surveyors tracked bat movements around the site through the use of Binatone long range radios, which allowed audio contact to remain throughout the survey period. A night vision camera was also used during the surveys allowing further confirmation of bat sightings, during the first survey set up in the courtyard and the second survey on the upper floor in the north-east corner of the building. The surveyors watched the potential roost exit or entry points constantly and noted any bats emerging from or returning to potential roost points. All activity was marked on a map.

2.4.2 Two dusk emergence surveys were undertaken on the 16th August 2022 and the 1st September 2022. Four ecologists were present during the first visit and five during the second, comprising the following surveyors:

- Bill Lever BSc (Hons) MCIEEM who holds a Natural England (NE) Class 2 Bat Licence (2015-12645-CLS-CLS) and has 17 years of bat activity survey and bat mitigation work experience. Bill has also held bat licences for developments;
- Jennifer Clarke BSc (Hons) MSc MCIEEM who holds a NE Class 2 Bat Licence (2015-15183-CLS-CLS) and has 17 years of bat activity survey and bat mitigation work experience. Jenny has also held bat licences for developments;
- Arabella Catlow BSc (Hons) ACIEEM an ecologist who has eight years of bat activity survey and mitigation experience;
- Ben Brown BSc (Hons) ACIEEM an ecologist who has six years of bat survey experience;
- Mateusz Lewis BSc (Hons) who has four years of bat survey experience;
- Phill Brown who has two years of bat survey experience; and
- Sue Brown who has one year of bat survey experience.

2.4.3 Timings and other survey parameters are provided within Table 1 below.

Table 1: Survey Timings

Date	16/08/2022		01/09/2022	
Sunset time	20:35		19:59	
	Start	**End**		
Survey timings	20:20	22:30	19:45	21:45
Temperature	16°C	14°C	15°C	14°C
Precipitation	Dry	Dry	Dry	Dry
Wind speed	Beaufort 1-2	Beaufort 1-2	Beaufort 2	Beaufort 2
Cloud cover	8/8 Oktas	8/8 Oktas	8/8 Oktas	8/8 Oktas

2.5 Limitations

2.5.1 The survey data is valid for a period of two years, after which point repeat surveys would be required for any planning submissions.

3 Results

3.1 Desk Study

3.1.1 During the desk study, 59 records were returned from the West Yorkshire Bat Group, consisting of two whiskered bats (*Myotis mystacinus*), one noctule (*Nyctalus noctula*), 17 common pipistrelles, 17 pipistrelles species (exact species unidentified) and 22 unknown species.

3.1.2 The nearest record was from 2002, at Harden Grange itself (the building immediately south-east of the site), which consisted of a common pipistrelle roost estimated at 20 adults.

3.1.3 The results of the desk study can be seen illustrated on Figure 1 and full details can be found within Appendix 2.

3.2 Surrounding Habitat

3.2.1 The site is located within a rural setting on the outskirts of Harden village, connected to the wider landscape by various linear features. Harden Beck exists approximately 200m from the site which would provide areas suitable for foraging as well as commuting links. Trees are present surrounding the site which would also provide suitable for foraging as well as extensive woodland approximately 250m south of the site.

3.3 Inspection for Signs of Roosting Bats

3.3.1 The internal inspection found similar results to the survey by John Gardner. A collection of fresh droppings was located in the north-east corner of the building underneath a roof apex, as shown on Photographs 1 and 2 of Figure 2 and Figure 3. Additional droppings were found scattered throughout the northern and eastern voids.

3.3.2 DNA analysis of the droppings only confirmed the presence of brown long-eared bats (see Appendix 3).

3.4 Dusk Emergence Surveys

Dusk Survey – 16/08/2022

3.4.1 The first bat heard was a common pipistrelle (*Pipistrellus pipistrellus*) seen commuting to the east of the building at 20:33, which was two minutes prior to sunset and therefore had emerged from a nearby building or tree (based on an average emergence time of 20-30 minutes after sunset for this species). A **common pipistrelle was observed emerging** from out of the roof structure on the east aspect of the building at 20:35. Pipistrelles were then observed foraging on a regular basis around the building external and within the courtyard, many of which were seen flying from the southern direction and flying in and out of the open windows in the eastern area of the building courtyard. One common pipistrelle was observed **swarming and entering a roost** under the guttering on the east section within the courtyard at 21:07, which was **briefly joined by a second pipistrelle** but after a few social calls one of the bats exited again. Pipistrelle activity reduced after this period. A maximum of two common pipistrelles were observed at any one time.

3.4.2 In the second half of the survey period bats were observed flying within the upper floor of the eastern section of the building and flying in and out of the open windows of this section, into the courtyard (see Photograph 4 of Figure 2). The bats were not echolocating and it is assumed, given the droppings analysis, that these were brown

long-eared bats (*Plecotus auritus*). **Up to seven bats (brown long-eared) were observed emerging** from the open windows.

3.4.3 Figure 4 illustrates the key flight lines observed.

Dusk Survey – 01/09/2022

3.4.4 Activity was generally lower on the second visit. The first bat heard was a noctule (*Nycalus noctula*) heard at the time of sunset (20:00) to the east of the building. Up to **two common pipistrelles were observed emerging** from within the courtyard, at 20:20 from an open window, and at 20:21 potentially from the tower on the eastern roof (which contains open slats). Several foraging bats were observed to the north and east aspects from 20:16 to 20:43. Common pipistrelles were observed foraging to the west aspect from 20:21 to 21:31 with bats entering and exiting the western open entrance of the building as well as foraging within the building briefly.

3.4.5 Up to **three brown long-eared bats were observed emerging** from the known roost location and one brown long-eared bat was observed resting on the internal roof within the eastern section, see Photograph 5 of Figure 2.

3.5 Summary of Current Bat Status

3.5.1 The building contains common pipistrelle day roosts, located within the internal roof structure on the first floor of the eastern and northern side of the building. Up to three bats were observed emerging at any one time.

3.5.2 A further common pipistrelle day roost was observed under the guttering in the courtyard on the east section, up to two bats were observed using the feature at any one time.

3.5.3 Given the early emergence times for pipistrelles observed and amount of pipistrelle activity within the first half of the survey periods, it is possible that a pipistrelle maternity roost still remains within a building near to the site, as identified within the data search. The pipistrelles observed roosting within the site would form part of the same colony.

3.5.4 A small brown long-eared maternity roost was observed roosting within the internal roof structure in the north-east corner of the building. Up to seven brown long-eared bats were observed emerging at any one time, however it should be noted that the first survey was undertaken towards the end of the maternity period and it is possible that a higher peak count would be observed during the optimal maternity period (June and July).

3.5.5 The presence of a breathable roofing membrane provides evidence that the building has been re-roofed in recent years, it is therefore possible that the building was previously used by a larger number of bats but no longer sustains that usage.

4 Recommendations

4.1 Potential Impacts of the Development

4.1.1 The proposed development involves complete renovation of the building to provide five dwellings. The new development will include reconfiguration of the internal layout, re-roofing, replacement windows and doors and re-mortaring of external brickwork.

4.1.2 In the absence of mitigation, renovation would remove the common pipistrelle day roosts and brown long-eared maternity within the internal roof structure of the building, potentially killing/injuring bats if they were present at the time of the development works.

4.2 Legal and Planning Policy Status

4.2.1 Full details of the legislation and planning policy relating to bats can be found in Appendix 2. In summary the following legislation makes it an offence to injure or kill a bat and also to deliberately, recklessly or intentionally disturb a bat whilst in its roost or to destroy/obstruct a roost:

- The Conservation of Habitats and Species Regulations 2017 (as amended);
- Wildlife and Countryside Act 1981 (as amended); and
- The Countryside and Rights of Way Act 2000.

4.2.2 In addition, the National Planning Policy Framework (NPPF) (Revised, 2021. Section 15, paragraph 174(d)) requires planning authorities to use the planning system to contribute to and enhance the natural and local environment by minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

4.2.3 Eight species of bats are found to exist within the Bradford District. The species of bats listed within the Bradford Biodiversity Action Plan (BAP) include pipistrelle species (*Pipistrellus sp.)*. The action plan aims to “protect and enhance their status in the Bradford District” (City of Bradford Metropolitan District Council, 2022).

4.3 Further Survey

4.3.1 Whilst the current survey information is considered sufficient to effectively design the required mitigation for planning purposes, because the development will commence after May 2024 an update bat activity survey will be required to ensure the licence application (see Section 4.4 below) contains information from the most recent survey period. The survey should be undertaken in the peak maternity period of mid-June to July in the year of the bat licence submission (i.e if works are due to take place in winter 2023/2024 the survey should take place in June or July 2023, if the works are due to take place in winter 2024/2025 the survey should take place in June or July 2024 to ensure the data is as up-to-date as possible.

4.4 Licensing

4.4.1 In order to adhere to national legal policy and regional planning policy, a licence from Natural England **will** be required for the works on the roof of the building. To obtain a licence the applicant has to show consideration of the following two regulations set out in the Conservation of Habitats and Species Regulations 2017 (as amended):

- **Regulation 55(2)(e): The ‘Purpose’ Test.** The applicant must provide evidence as to why the development is of ‘Imperative reasons of overriding public interest’; and

- **Regulation 55(9)(a): The ‘No Satisfactory Alternative’ Test.** Applicants must demonstrate that all alternatives have been considered, including the ‘do nothing’ alternative.

4.4.2 The ecologist then has to satisfy the third test below. This can be achieved by the outline method statement in Appendix 4.

- **Regulation 55(9)(b): The Conservation Status Test**. The applicant must demonstrate that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range

4.4.3 Licences can take 6-12 weeks from application to decision and comprise the following elements:

- A Licence Application Form to be signed by the applicant;
- A Reasoned Statement that the applicant must complete; and
- A Method Statement that the ecologist should write.

4.5 Mitigation

4.5.1 In order to adhere to national legal policy and regional planning policy, mitigation must be undertaken to maintain the 'favourable conservation status' of bats on site and to avoid killing and injuring individual bats. A like-for-like replacement of the brown long-eared maternity roost will be required. A working method must be undertaken in conjunction with the derogation licence from Natural England. Until the Natural England licence is gained, no work likely to disturb a bat roost can occur as part of the development.

4.5.2 Works to the roof and upper floor of the east section of the building can only be undertaken between **October and April** inclusive, outside the maternity period. Works to the west and north sections can be undertaken outside this period, however the doorway between the north and east sections must be boarded up first and a buffer of at least 3m must be left between the northern and eastern sections of the building, as illustrated on Figure 5.

4.5.3 The mitigation required will involve:

- Checking all suitable roosting opportunities in the internal of the buildings with an endoscope by a licensed bat worker.

- Bats will be excluded from the building internal. Exclusion will involve covering windows and doors with plastic sheeting that is lifted only from 15 minutes prior to sunset until approximately two hours after sunset to allow bats to escape but not return during the night;

- Soft-stripping the building externals and internals by hand under the watching brief of a licensed bat worker. Works to the east section can only occur between October and April inclusive and only when the night-temperatures exceed 8°C consecutively for four nights to ensure bats are not in deep hibernation. It is not envisaged that the majority of the building will require re-roofing due to works taking place within the last 10 years;

- If any bats are found during soft stripping they will be removed by hand and placed within a bat box on a nearby tree (see below);

- Checking all suitable roosting opportunities in external walls with an endoscope by a licensed bat worker, including underneath the guttering if the guttering is due for removal. Any bats found will be excluded using one-way valves;

- Provision of temporary roosting opportunities by installing at least two bat boxes on nearby retained trees, to be used by bats as an undisturbed roost during the construction phase. These should consist of boxes such as the Greenwood's Ecohabitats Two Crevice Bat Box (suitable for small groups of crevice-dwelling species such as pipistrelles) and a Medium Hollow Bat Box

(suitable for larger groups of bats who prefer a wider cavity, such as brown long-eared); and

- Integration of a bat tube (Vivara Pro Build-in Woodstone Bat Tube or similar) into the western wall of the western part of the building, to compensate for the loss of the pipistrelle day roost under the guttering within the courtyard; and

- Permanent roosting opportunities will be provided on site via the retention of a bat loft with provision of access points in the roof and at the eaves, use of non-breathable roofing membrane (bitumen felt or similar), and provision of bat boxes inside the void. The loft will incorporate the brown long-eared roost in-situ. The bat loft must be suitable for use by bats prior to the next maternity season, i.e. **ready for use by May 2024** (although the remaining building work can continue in other sections of the building past this date).

4.5.4 Any timber treatment required would need to use 'bat friendly' products, a list can be found on the www.gov.uk website.

4.5.5 Full details of the mitigation strategy can be found in the Method Statement in Appendix 4.

Lighting

4.5.6 Artificial lighting has a detrimental effect on bats, particularly brown long-eared bats. Lighting should therefore ideally be as minimal as guidelines permit and where lighting is not needed it should not be used. In order to reduce interference from lighting associated with the development, any lighting should be shaded and pointed away from potential bat roosting and foraging habitat, in particular avoided where there are exit points from the bat loft.

4.5.7 In the case of security lighting, a maximum of 2000 lumens (150W) lamp should be used, which ideally should be fitted with a movement sensor with the timer set to the minimum amount of 'lit time' (Institute of Lighting Professionals, 2018).

4.5.8 Other technological specifications in relation to lighting design should include:

- Use narrow spectrum light sources to lower the range of species effected by lighting;
- Use light sources that emit minimal ultra-violet light;
- Lights should peak higher than 550nm or use glass lantern covers to filter UV light;
- Avoid white and blue wavelengths of the light spectrum to reduce insect attraction and where white light sources are required in order to manage the blue short wavelength content they should be of a warm / neutral colour temperature <3,700 kelvin; and
- For pedestrian lighting, use low level lighting that is as directional as possible and below 3 lux at ground level but preferably below 1 lux.

5 References

5.1 Cited References

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5.1.10 West Yorkshire Ecology *WYE* (2008). Minimum Standards for a Bat Survey in West Yorkshire (v3 Sept 2009). WYE, Wakefield.

6 Figures

6.1 Figure 1 – Site Location

6.2 Figure 2 – Photographs

6.3 Figure 3 – Evidence of Bats

6.4 Figure 4 – Key Flight Lines

6.5 Figure 5 – Mitigation

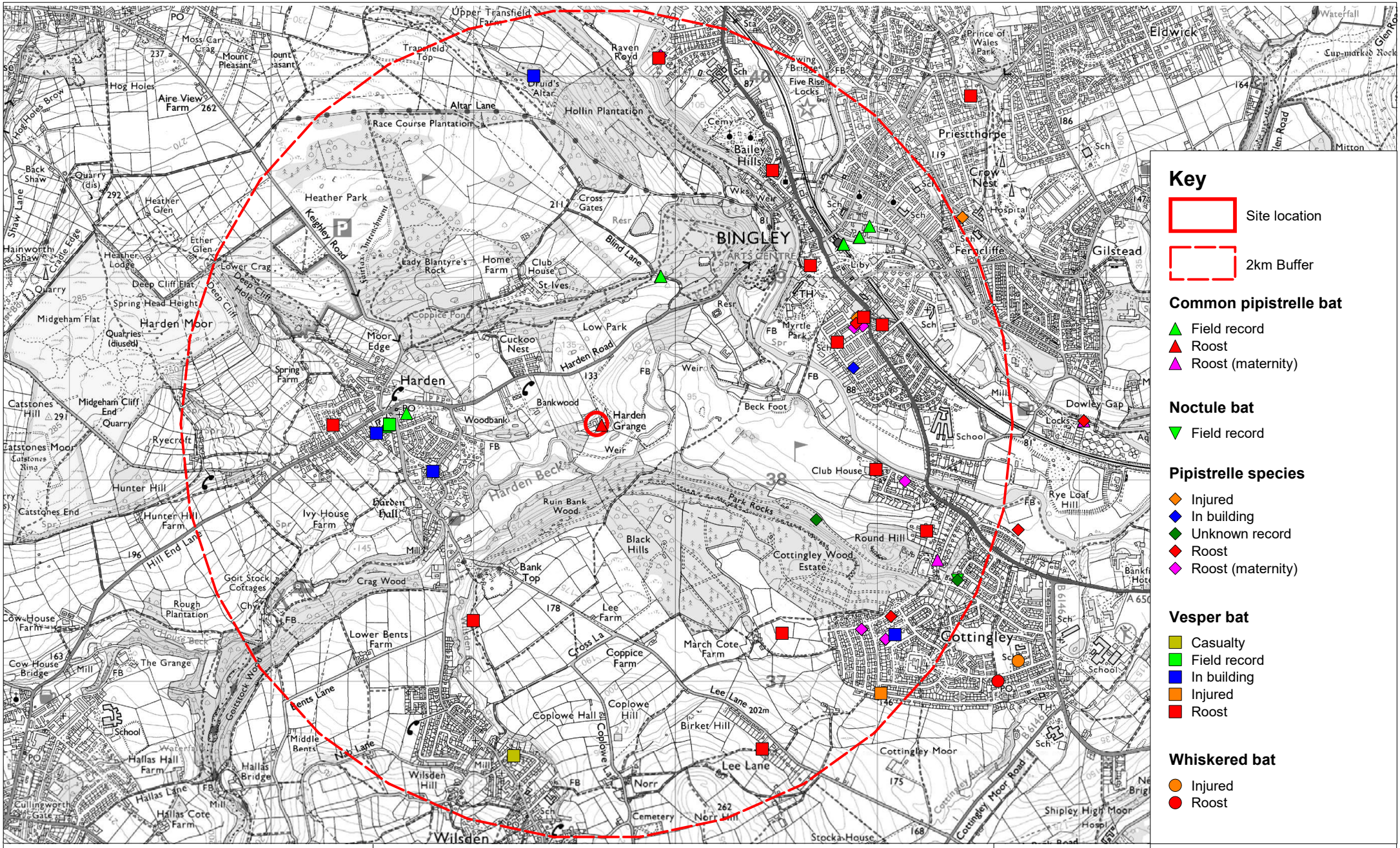

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Figure 1 - Site Location and Desk Study Results

Harden Grange Bat Survey

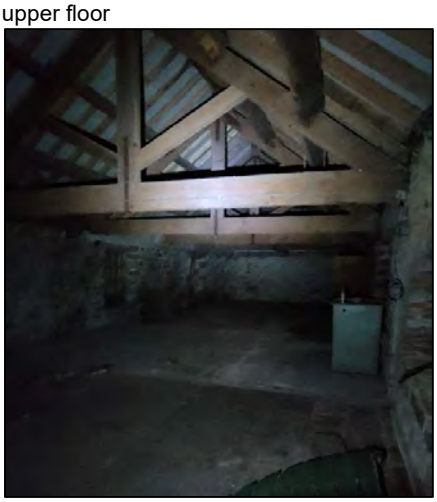
N

Date	23/08/2022
Map reference	0121_22/RE01 - FIG 1 - V1
Drawn/Approved by	AMS/JC
Scale	1:25'000 at A4

Photograph 1: Apex in the north-east of the building under which fresh brown long-eared droppings were found

Photograph 2: Brown-long-eared droppings underneath the apex

Photograph 3: Example of the roof space available on the upper floor



Photograph 4: Photo taken on the night vision camera showing the easterly past of the building with open windows that were locations of bat emergences

Photograph 5: Brown long-eared bat hanging from the roof structure, north-east corner

bl-ecology ecological consultancy	Project	Harden Grange
	Title	Photographs
	Reference	0121_22
	Figure Number	2, Page 1 of 1
	Created by	Alana Wharton

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Figure 3 - Evidence of bats

Harden Grange, Bingley - Bat Survey

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Date	14/12/2022
Map reference	0121_22/RE01 - FIG 3 - V1
Drawn/Approved by	AW/JC
Scale	1:1100 at A4

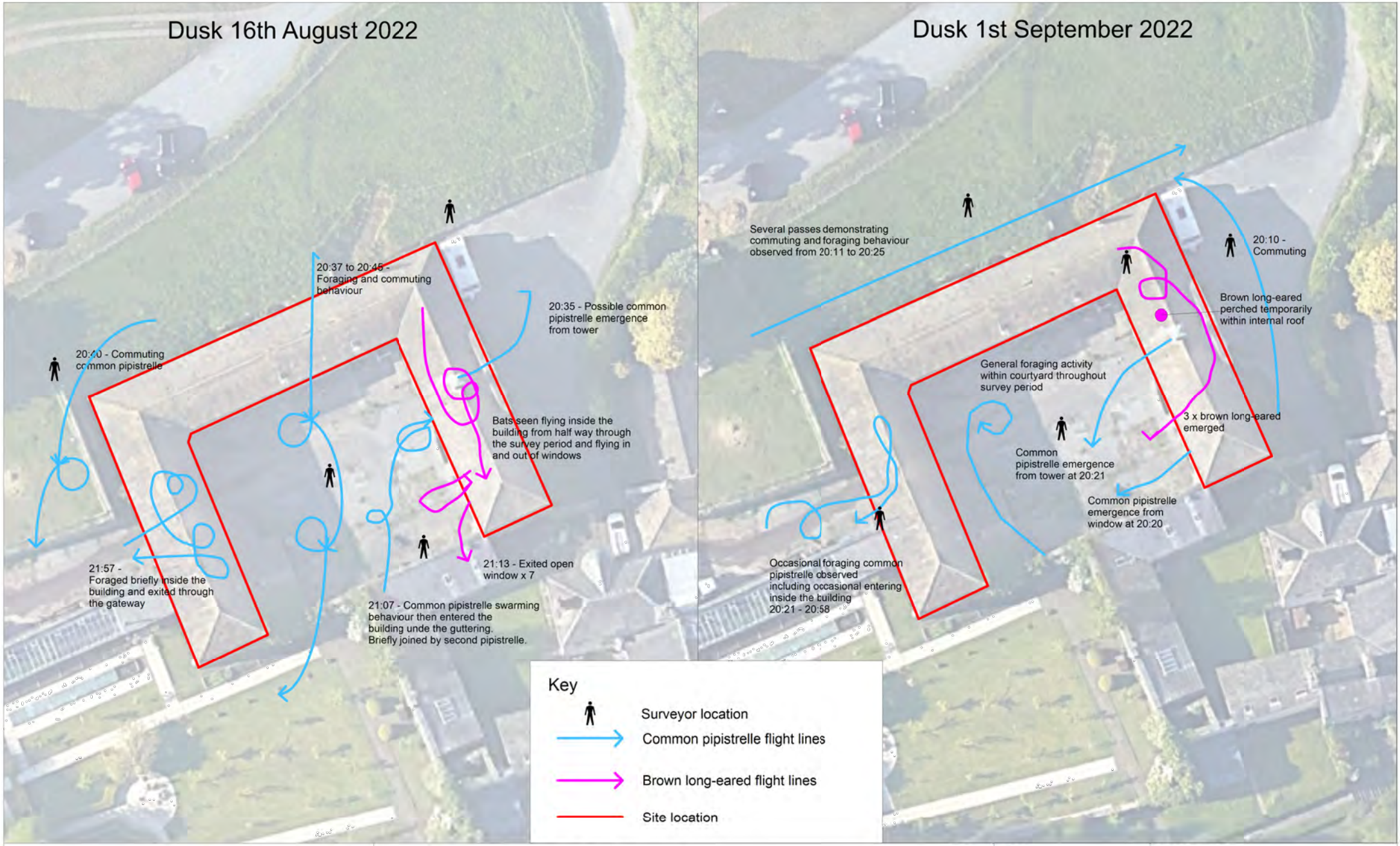

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Figure 4 - Bat Activity Survey Summary

Harden Grange, Bingley - Bat Survey

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Date	14/12/2022
Map reference	0121_22/RE01 - FIG 4 - V1
Drawn/Approved by	AW/JC
Scale	1:1100 at A4

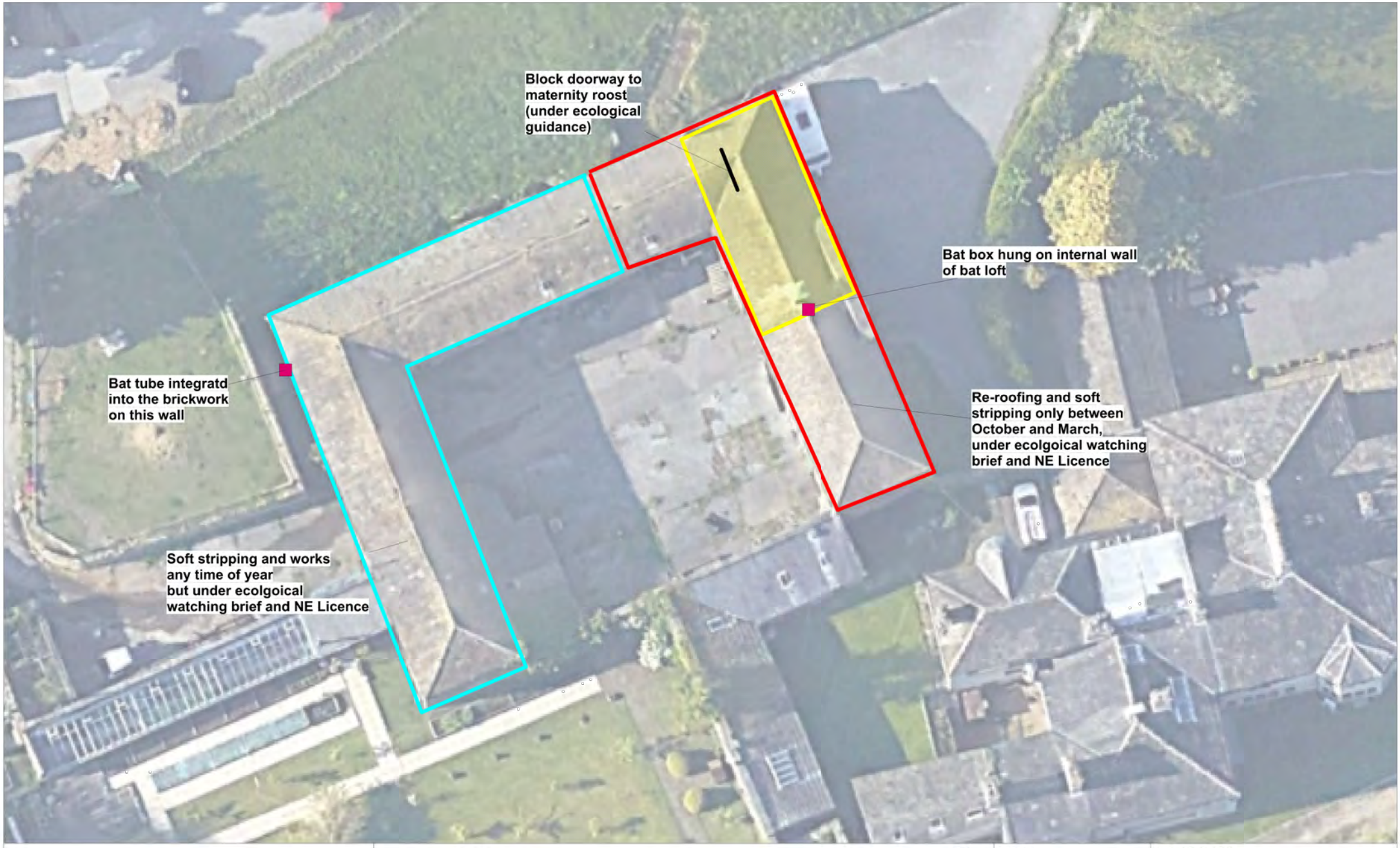

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Figure 5 - Mitigation

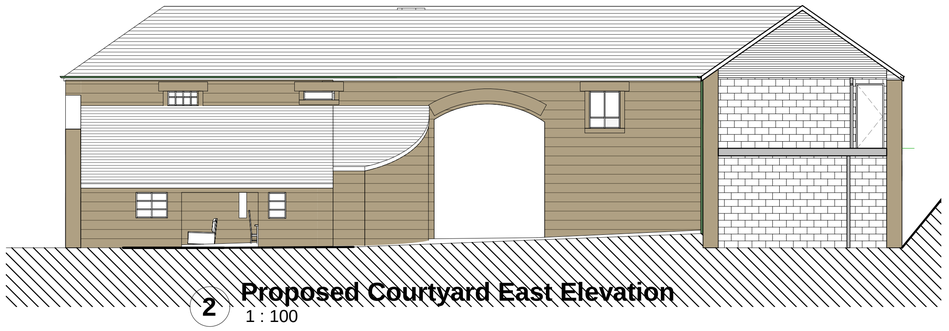
Harden Grange, Bingley
Bat Survey Report

N

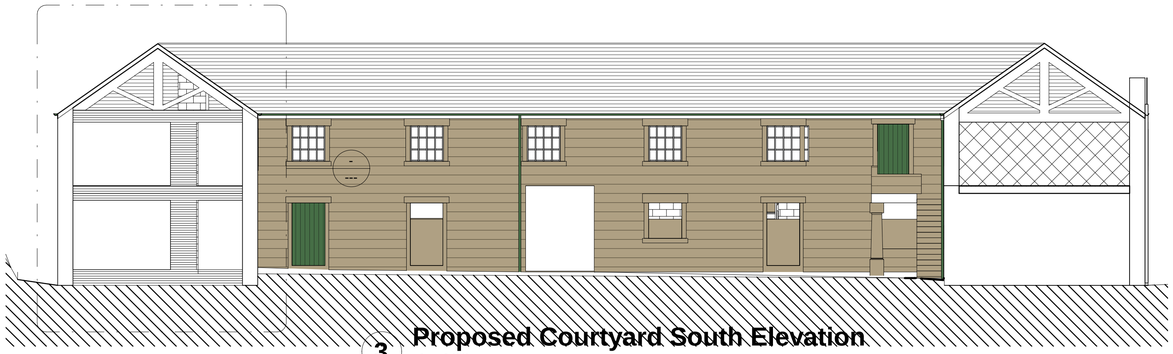
Date	01/03/2023
Map reference	0121-22-RE01 - FIG 5 - V2
Drawn/Approved by	JC
Scale	NTS

7 Appendix 1 – Proposed Site Layout

1 **Proposed Courtyard West Elevation**
1 : 100

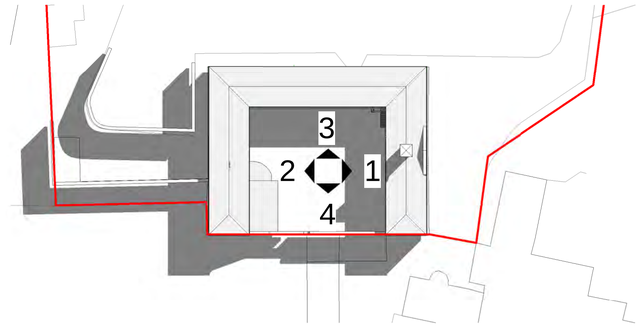


2 **Proposed Courtyard East Elevation**
1 : 100

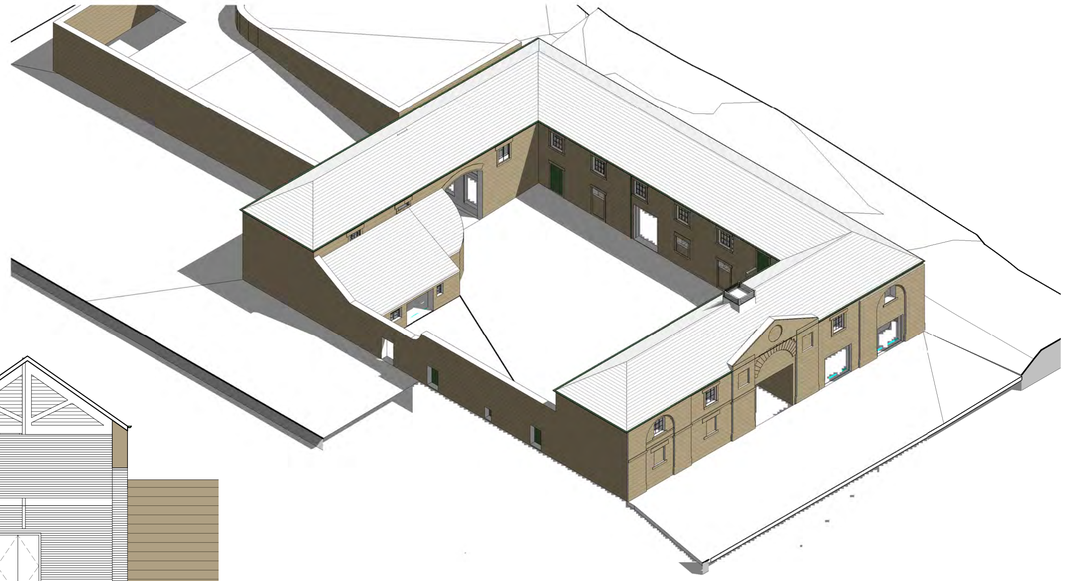


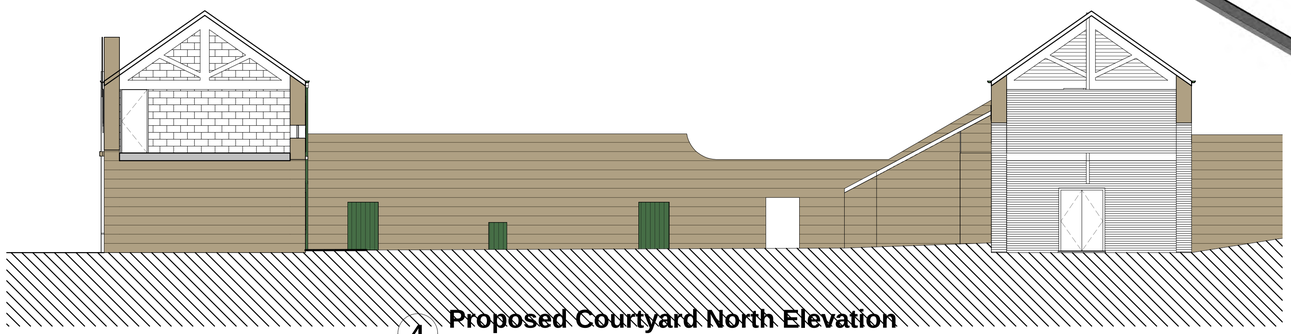
3 **Proposed Courtyard South Elevation**
1 : 100

Courtyard Elevations Key
1 : 500



Proposed Overview





4 **Proposed Courtyard North Elevation**
1 : 100

A 29/09/2021:- First Issue [AB]

Revision	Description

Location

Conversion of Stables

Shabir Hussain
Harden Grange
Harden Road, Harden
Bingley
BD16 1AX

Title
Proposed Courtyard Elevations & 3D Overview

Scale	Drawing No.	Revision
As indicated @A1	S21331/ P24	A

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SPOKE
ARCHITECTURAL DESIGN

8 Appendix 2 – Bats

8.1 Biology

8.1.1 Bats make up 20% of all mammal species in the world, the order *Chiroptera* has over 1100 species with 17 species of those being native to the UK.

8.1.2 All British bats are insectivores and eat a range of prey from midges and mosquitoes to beetles and spiders. Their nocturnal feeding habits mean they are secretive and often utilise less developed areas such as woodlands, grasslands, watercourses and hedgerows. Bats can however be seen in more urban areas with the most common bats species, common pipistrelle, preferring to roost in buildings throughout the summer.

8.1.3 Bats have varying requirements for roosting throughout the year and this also varies vastly between species. Certain species are fairly restricted to trees throughout the year such as the barbastelle and noctules. General bat roosting habitats can include caves, mines, trees, buildings and churches.

8.1.4 Female bats require warmer temperatures in the summer where they can raise their young, these summer breeding sites are often used year after year and depending on species can range between 20 individuals to several hundred. Some roosts have been recorded at over 1000 individuals. Females begin to find breeding roosts in May and are normally present all summer.

8.1.5 Male bats spend most of the year segregated away from females in solitary roosts or in small numbers. In autumn after the females have had their pups in summer, male bats begin to either seek out breeding females to mate with or create mating roosts or harems. After mating bats disperse to their hibernation sites and fertilisation is delayed until the following spring.

8.1.6 In winter when insect prey is at a minimum, bats begin to seek hibernation sites where they can slow their bodies into torpor and save energy. Hibernation sites tend to support stable temperatures with high humidity, these sites are often in caves, tree hollows or deep in stone walls. Upon warming in spring bats begin their yearly cycle once again and pregnant females begin to form their maternity colonies once more.

8.2 Legislation and Planning Policy

8.2.1 Bat species have suffered a massive decline over the last century due to pressures from deforestation, development and the intensification of farming practices. In addition the roosting habits of bats mean they are highly sensitive to change in roosting conditions. Therefore bats are now a fully European Protected Species (EPS).

8.2.2 All bat species in the UK are protected by law under The Conservation of Habitats and Species Regulations 2017 (as amended) - 'The Habitat Regulations'. In addition the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000) lists all bat species.

8.2.3 The legislation makes it an offence to:

- Deliberately or intentionally capture, injure or kill a bat;
- Deliberately disturb bats in such a way as to be likely significantly to:-
    - Impair their ability to survive, breed or rear or nurture their young, or to impair their ability to hibernate or migrate; or
    - Affect significantly the local distribution or abundance of that species;
- Damage, destroy or obstruct a breeding site or resting place of bats;
- Recklessly disturb a bat (reckless defined as an intentional act undertaken knowing that is will or may disturb a bat).

8.2.4 Actions which are likely to cause one or more of the offences listed above can be licensed by Natural England (as set out in the EC Habitats Directive) providing that:

- The works are for overriding reasons of a public interest;
- There is no satisfactory alternative; and
- The works will maintain bats at a favourable conservation status during and post completion of the works.

8.2.5 In addition to this greater and lesser horseshoe (*Rhinolophus ferrumequinum and Rhinolophus hipposideros*), barbastelle (*Barbastella barbastellus*) and Bechstein's (*Myotis bechsteinii*) bats are included on Annex II of the Habitats Directive as implemented into UK law by the Habitats Regulations 2017 (as amended). This legislation requires that areas Special Areas of Conservation (SACs) are designated in suitable areas to protect the habitat of these species.

8.3 Planning Policy

8.3.1 The National Planning Policy Framework (NPPF) states that impacts to biodiversity should be minimised and net gains provided for biodiversity to contribute to and enhance the natural and local environment. Bats are therefore considered under the NPPF; this document is therefore a material consideration when assessing planning applications. The NPPF outlines the following principles:

8.3.2 If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

8.3.3 Proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site's notified special interest features is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of Sites of Special Scientific Interest;

8.3.4 Development proposals where the primary objective is to conserve or enhance biodiversity should be permitted;

8.3.5 Opportunities to incorporate biodiversity in and around developments should be encouraged;

8.3.6 Planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss; and

8.3.7 The following wildlife sites should be given the same protection as European sites:

- Potential Special Protection Areas and possible Special Areas of Conservation;
- Listed or proposed Ramsar sites; and
- Sites identified, or required, as compensatory measures for adverse effects on European sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

8.3.8 The 'Woolley' case refers to Woolley vs Cheshire East Borough Council and Millennium Estates Ltd (2009). The case outlined that planning authorities must have the regard of Regulation 9(5) of the Habitat Regulations when determining planning applications. As a result the findings outlined that planning authorities must demonstrate that the three tests (see section 1.4.4 above) will be satisfied when issuing planning permissions.

8.4 Biodiversity Action Plans and Species of Principal Importance

8.4.1 Barbastelle, Bechstein's, greater and lesser horseshoe, brown long-eared (*Plecotus auritus*), noctule (*Nyctalus noctula*) and soprano pipistrelle (*Pipistrellus pygmaeus*) are Priority Biodiversity Action Plan (BAP) species. These Priority species are transposed into the Natural Environment and Rural Communities (NERC) Act 2006. The act means all government departments must conserve these species and promote others to conserve them and their habitats.

8.4.2 The NERC Act 2006 outlines that all public bodies whilst exercising its functions must have regard for the conservation and enhancement of biodiversity in the UK, this includes the determination of planning applications. As part of the Act the following species are considered as 'priority': barbastelle, Bechstein's, noctule, soprano pipistrelle, brown long eared, greater horseshoe and lesser horseshoe.

8.5 Glossary of Bat Terms

8.5.1 The following is a list of terms and their definitions commonly utilised within bat reports (BCT, 2016; English Nature, 2004):

- Day roost: A place where individual bats, or small groups of males, rest or shelter in the day but are rarely found by night in the summer;
- Night roost: A place where bats rest or shelter in the night but are rarely found in the day. May be used by a single individual on occasion or it could be used regularly by the whole colony;
- Feeding roost: A place where individual bats or a few individuals rest or feed during the night but are rarely present during the day;
- Transitional/occasional roost: Used by a few individuals or occasionally small groups for generally short periods of time n waking from hibernation or in the period prior to hibernation;
- Swarming site: Where large numbers of males and females gather during late summer to autumn. Appear to be important mating sites;
- Mating site: Where mating takes place from late summer and can continue through winter;
- Maternity roost: Where female bats give birth and raise their young to independence;
- Hibernation roost: Where bats may be found individually or together during winter. They have a constant cool temperature and high humidity;
- Satellite roost: An alternative roost found in close proximity to the main nursery colony used by a few individual breeding females to small groups of breeding females throughout the breeding season; and
- Torpor: Slowing the metabolic rate and entering a state of deep sleep.

8.6 References

8.6.1 Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

8.6.2 Entwistle, A.C., Harris, S., Hutson, A.M., Racey, P.A., Walsh, A., Gibson, S.D., Hepburn, I., and Johnston, J. (2001) Habitat Management for Bats: A Guide for Land Managers, Land Owners and their Advisors. JNCC, Peterborough.

8.6.3 Highways Agency (1996). Design Manual for Roads and Bridges, Volume 10 Environmental Design and Management: Section 4 The Good Roads Guide- Nature Conservation, Part 6 Nature Conservation Management Advice in Relation to Bats.

8.6.4 HM Government (1995). Biodiversity: The UK Steering Group Volume 2: Action Plans. JNCC, Peterborough.

8.6.5 Mitchell-Jones, A.J. & McLeish, A.P. (1999). Bat Workers' Manual (2nd Edition). Joint

Nature Conservancy Committee, Peterborough

8.6.6 Office of the Deputy Prime Minister (2005). Planning Policy Statement 9; Biodiversity and Geological Conservation.

8.6.7 Russ, J. (1999). The Bats of Britain and Ireland. Alana Ecology, Shropshire.

9 Appendix 3 – Desk Study Results

Table 2: Desk Study Results from West Yorkshire Bat Group

Grid Reference	Date	Common Name	Recommended Name	Abundance	Record Type
SE117371	16/07/2002	Whiskered Bat	*Myotis mystacinus*	1 Count of Adult	Grounded
SE116370	16/07/2002	Whiskered Bat	*Myotis mystacinus*	1 Count of Adult	Roost (possible)
SE114375	00/01/1900	Noctule	*Nyctalus noctula*		aural bat detector
SE107378	00/01/1900	Pipistrellus	*Pipistrellus*		None
SE114375	00/01/1900	Pipistrellus	*Pipistrellus*		None
SE0993040100	02/05/1995	Pipistrellus	*Pipistrellus*	51-100 Count of Adult	Roost (maternity)
SE1092437257	26/05/1995	Pipistrellus	*Pipistrellus*	51-100 Count of Adult	Roost (maternity)
SE1092437257	03/07/1999	Pipistrellus	*Pipistrellus*	>50 Count of Adult	Roost (maternity)
SE1091338773	29/04/2003	Pipistrellus	*Pipistrellus*	12 Count of Adult	Roost
SE1104437207	19/07/2005	Pipistrellus	*Pipistrellus*		Roost
SE1107037320	14/08/2005	Pipistrellus	*Pipistrellus*		Roost
SE11143799	03/08/2013	Pipistrellus	*Pipistrellus*	20 Count of Adult	Roost (maternity)
SE113376	01/07/1998	Common Pipistrelle	*Pipistrellus pipistrellus*	51-100 Count of Adult	Roost (maternity)
SE1048239531	11/09/2000	Common Pipistrelle	*Pipistrellus pipistrellus*	9 Count of Adult	Roost
SE0963638269	19/06/2002	Common Pipistrelle	*Pipistrellus pipistrellus*	20 Count of Adult	Roost
SE1202538290	01/06/2008	Common Pipistrelle	*Pipistrellus pipistrellus*		Roost (maternity)
SE1096439255	07/09/2009	Common Pipistrelle	*Pipistrellus pipistrellus*		Field record
SE0992839007	07/09/2009	Common Pipistrelle	*Pipistrellus pipistrellus*		Field record
SE0993039007	07/09/2009	Common Pipistrelle	*Pipistrellus pipistrellus*		Field record
SE0867038328	07/09/2009	Common Pipistrelle	*Pipistrellus pipistrellus*		Field record
SE0856538262	07/09/2009	Common Pipistrelle	*Pipistrellus pipistrellus*		Field record
SE0858138270	07/09/2009	Common Pipistrelle	*Pipistrellus pipistrellus*		Field record
SE0858138270	07/09/2009	Common Pipistrelle	*Pipistrellus pipistrellus*		Field record
SE1091239199	07/09/2009	Common Pipistrelle	*Pipistrellus pipistrellus*		Field record
SE1091539201	07/09/2009	Common Pipistrelle	*Pipistrellus pipistrellus*		Field record
SE1083239165	07/09/2009	Common Pipistrelle	*Pipistrellus pipistrellus*		Field record
SE1083439166	07/09/2009	Common Pipistrelle	*Pipistrellus pipistrellus*		Field record
SE1083639166	07/09/2009	Common Pipistrelle	*Pipistrellus pipistrellus*		Field record
SE1202538290	01/06/2010	Common Pipistrelle	*Pipistrellus pipistrellus*		Roost (maternity)
SE1088438552	06/05/2006	Pipistrelle Bat species	*Pipistrellus*	1 Count of Adult	in building
SE1202538290	21/06/2006	Pipistrelle Bat species	*Pipistrellus*		Roost
SE1104437208	24/06/2006	Pipistrelle Bat species	*Pipistrellus*	not recorded Range	Roost (maternity)
SE1091238775	27/06/2006	Pipistrelle Bat species	*Pipistrellus*	not recorded Range	Roost (maternity)
SE109388	30/07/2007	Pipistrelle Bat species	*Pipistrellus*	1 Count of Adult	Grounded
SE1142439299	19/09/2007	Pipistrelle Bat species	*Pipistrellus*	1 Count of Adult	Grounded
SE11703775	29/02/2016	Pipistrelle Bat species	*Pipistrellus*		Roost
SE10933876	17/01/2018	Pipistrelle Bat species	*Pipistrellus*		Roost (maternity)
SE090373	00/01/1900	Vesper Bat species	*Vespertilionidae*		Roost (possible)
SE1099638049	15/06/1995	Vesper Bat species	*Vespertilionidae*	Uknown Count of Adult	Roost (possible)

SE1102738766	26/06/1997	Vesper Bat species	*Vespertilionidae*	1 Count of Adult	Roost (possible)
SE1080438680	08/12/1998	Vesper Bat species	*Vespertilionidae*		Roost
SE1091338773	29/04/2003	Vesper Bat species	*Vespertilionidae*	12 Count of Adult	Roost
SE1124637744	16/07/2003	Vesper Bat species	*Vespertilionidae*	150 Count of Adult	Roost
SE1067039060	16/07/2003	Vesper Bat species	*Vespertilionidae*		Roost
SE0830538270	22/07/2003	Vesper Bat species	*Vespertilionidae*	6 Count of Adult	Roost
SE08523823	22/07/2003	Vesper Bat species	*Vespertilionidae*		in building
SE09304000	19/09/2003	Vesper Bat species	*Vespertilionidae*		in building
SE0910236049	14/10/2003	Vesper Bat species	*Vespertilionidae*		Roost
SE11023694	17/10/2003	Vesper Bat species	*Vespertilionidae*	1 Count of Adult	Grounded
SE11093723	23/05/2005	Vesper Bat species	*Vespertilionidae*	1 Count of Adult	in building
SE0936636105	08/07/2005	Vesper Bat species	*Vespertilionidae*	1 Count of Adult	Roost
SE08803804	21/07/2005	Vesper Bat species	*Vespertilionidae*	1 Count of Adult	in building
SE09203663	12/09/2005	Vesper Bat species	*Vespertilionidae*		Casualty
SE1146539900	16/08/2006	Vesper Bat species	*Vespertilionidae*		Roost
SE1048339531	29/08/2006	Vesper Bat species	*Vespertilionidae*		Roost
SE1043236663	29/06/2007	Vesper Bat species	*Vespertilionidae*		Roost
SE0991940088	24/07/2007	Vesper Bat species	*Vespertilionidae*		Roost
SE0858638272	07/09/2009	Vesper Bat species	*Vespertilionidae*		aural bat detector
SE1053037237	01/09/2012	Vesper Bat species	*Vespertilionidae*		Roost

10 Appendix 4 – Method Statement

10.1 Introduction

10.1.1 This method statement aims to satisfy Regulation 55(9)(b) of The Conservation of Habitats and Species Regulations 2017 (as amended), in order to inform the planning decision for the site at Harden Grange.

10.1.2 In order to adhere to national legal policy and regional planning policy, a bat licence from Natural England **will** be required for the development to proceed. This method statement is not intended to replace the bat licence, but will act as a precursor.

10.2 Summary of Mitigation Strategy

- Tool box talk together with a summary sheet erected within the site cabins;
- Exclusion of bats using plastic sheeting over windows and doors for at least four nights in October;
- Soft stripping of building, with features considered to have potential for bat roosts removed by hand under an ecological watching brief;
- Removal of roof tiles by hand (if required) under an ecological watching brief;
- Removal of all other features of bat under an ecological watching brief;
- Removal of bats by hand, with provision made for different weather conditions;
- Timing of works so the most destructive works take place in Autumn to avoid the maternity and hibernation periods;
- One Greenwood 'Ecohabitats Two Crevice Bat Box' and one 'Medium Hollow Bat Box' will be attached to a nearby tree;
- Provision of a bat loft inside the east aspect of the building;
- Provision of a bat tube integrated into the western wall of the western part of the building;
- No night work will be undertaken; and
- Monitoring of mitigation for two years post-development.

10.3 Works to be Undertaken by the Ecologist

General

10.3.1 Before works commence a tool-box talk will be provided by the ecologist to all workers on site. This will outline the presence and location of bat roosts, the law pertaining to bats, and the mitigation plan that will be undertaken on site. A summary sheet will be created that will be erected in the site offices, which will additionally provide contact telephone numbers. A copy of the bat licence, including the Method Statement, will be kept in the site offices.

10.3.2 Works considered likely to impact bats will be restricted to autumn or spring, thereby avoiding the most sensitive periods for bats.

10.3.3 Prior to works taking place, two bat boxes will be attached to a nearby tree to provide an undisturbed roosting place during the construction phase, and also a location in which to place any bats found during soft stripping (see Section 10.4.1 below for more details).

Exclusion

10.3.4 It is proposed that bats are excluded from the building using plastic sheeting installed over all windows and doors. The sheeting should be lifted up at least 30 minutes prior to sunset and left open for bats to emerge from roosts at dusk. The sheeting should be returned back over the windows and doors at least two hours after sunset (when all bats are considered likely to have left the roost) to prevent re-entry. This should take place over four nights in October, when night temperatures consistently exceed 8°C for at least the four nights beforehand.

10.3.5 A thorough search of the building internal and external will be made by the bat ecologist to check for bats as each stage of the development progresses. The ecologist will undertake a detailed check for the presence of bats behind guttering, window and door frames, in the internal roof structure, and any other gaps considered to have potential for bat presence using a flexible endoscope.

10.3.6 If bats are found in the external brickwork prior to re-mortaring they will be excluded via one-way valves, which will be left in place for at least two nights in suitable weather conditions, or until bats are confirmed absent. Once bats are confirmed absent the gap will be permanently blocked.

10.3.7 It is unlikely the roof will require replacement as part of this development because it was re-roofed within the last 10 years. A detailed inspection of the roof will take place prior to the installation of insulation, and the guttering and window/door frames will be removed carefully by hand under the watching brief of the licensed ecologist or suitably qualified ecologist listed as an accredited agent under the licence, hereby referred to as the SQE.

10.3.8 The roof above the new bat loft (see Section 10.4.2 below) will require re-roofing due to the presence of a breathable roofing membrane, which over time becomes deadly to bats as the strong fibres are teased out by their claws and they become tangled. This work can only be undertaken outside the maternity period, therefore between October and April inclusive. The connecting doorway between the east and north sections will be boarded up to avoid bats moving around inside the building.

Capture

10.3.9 If any bats are found during soft stripping these will be removed by hand and transported within a holding bag. The bat will be directly placed within a bat box on a nearby tree. If a torpid bat is found that was disturbed to the degree that it wakes up, the bat will be taken into care and fed until weather conditions are suitable for its release. Licensed bat workers involved in the mitigation works have training on the care of injured and grounded bats.

10.4 Works to be Undertaken by the Developer

New Roost Creation

10.4.1 One Greenwood ‘Ecohabitats Two Crevice Bat Box’ (suitable for small groups of crevice-dwelling species such as pipistrelles) and a ‘Medium Hollow Bat Box’ (suitable for larger groups of bats who prefer a wider cavity, such as brown long-eared) bat boxes will be attached to a nearby tree. Any bats found during soft demolition will be placed within one of these boxes. The boxes will remain on site permanently although the primary purpose is to allow alternative roosting sites during the development works.

10.4.2 In the long-term, part of the roof void in the eastern section of the building will be made into a bat loft that will incorporate the existing brown long-eared maternity roost. The loft will be 2m in height, 5.5m in width and 14m in length. Access will be via a specific access tile in the roof and via the slatted clock tower, which was seen to be used by bats previously. The roofing membrane for this section of the roof will be bat-friendly, ideally bitumen felt. One Greenwood bat box will be erected onto a gable wall inside the bat loft suitable for pipistrelle usage. The loft hatch will be 0.5m x 0.5m to prevent usage of the loft by the new residents for storage. The floor of the loft will be created sufficient thickness and of materials to ensure that droppings or staining do not become a problem for the residents below.

10.4.3 One bat tube (Vivara Pro Build-in Woodstone Bat Tube or similar) will be integrated into the western wall of the western part of the building, to compensate for the loss of the pipistrelle day roost under the guttering within the courtyard. The western part of the building has been chosen due it being on the same aspect as the original roost but will be in a part of the building that experiences lower light levels than the courtyard will post-development. The tube will be placed as near to the eaves as possible, away from windows and any security lighting.

General Mitigation

10.4.4 No night work will be undertaken on the site during the construction period to avoid disturbance to foraging bats. No lighting or materials will be stored near to the known roost.

10.4.5 Security lighting on the renovated building will be on a timer that is set to the minimum amount of 'lit' time. A lamp no greater than 2000 lumens (150W) will be utilised (Institute of Lighting Professionals, 2018) and any lighting will be shaded and pointed away from potential roosting and foraging habitat. The riverside habitat will remain unlit.

10.4.6 Other technological specifications in relation to lighting design will include:

- Use narrow spectrum light sources to lower the range of species effected by lighting;
- Use light sources that emit minimal ultra-violet light;
- Lights should peak higher than 550nm or use glass lantern covers to filter UV light;
- Avoid white and blue wavelengths of the light spectrum to reduce insect attraction and where white light sources are required in order to manage the blue short wave length content they should be of a warm / neutral colour temperature <4,200 kelvin; and
- For pedestrian lighting, use low level lighting that is as directional as possible and below 3 lux at ground level but preferably below 1 lux.

10.5 Population Monitoring, Roost Usage etc

10.5.1 The bat loft will be monitored for two years in July following construction completion; the monitoring will include a dusk emergence survey and internal inspection.

10.6 Mechanism for Ensuring Delivery

10.6.1 The planning application is yet to be decided; delivery can be ensured by the inclusion of a condition to the planning permission and the licence documents issued by Natural England.

10.7 Indicative Timetable of Works

10.7.1 The timetable of works is shown in Table 3 below and the date of monitoring is shown in Table 4. This is indicative only.

Table 3: Development activities and timing

Activity	Timing	Responsibility
Installation bat boxes on a nearby tree	September/October 2023 (prior to works commencing)	The developer or Ecologist
Inspection of building using an endoscope and exclusion of bats if found	October 2023 (must occur in Autumn when bats are still active)	Ecologist
Soft stripping of roof and installation of new roof including bat access tiles	October-November 2023 (eastern section must occur during this period, rest of building can be more flexible)	The developer under ecological watching brief
Installation of ceiling for the bat loft and bat tubes inside	Before May 2024 (before the start of the next maternity period after works commence)	The developer

Table 4: Post-development monitoring

Timing	July 2024	July 2025
Details	Dusk survey and inspection of roof void	Dusk survey and inspection of roof void