



# WOLD ECOLOGY LTD

2 Redwood Gardens, Driffield, East Riding of Yorkshire. YO25 6XA.  
www.woldecology.co.uk

---

## The Grange, Gardham Lane Bewholme

Bat Survey, August 2019.

	Staff Member	Position
Lead surveyor(s) :	Chris Toohie M Sc., MCIEEM Chris Scott Daniel Lombard B Sc., MCIEEM	Ecologist.
Report prepared by :	Chris Toohie M Sc., MCIEEM	Ecologist.
Authorised by :	Chris Toohie M Sc., MCIEEM	Signature protected
Notes :	This report contains sensitive information concerning protected species and caution should be exercised when copying and distributing to third parties.	
Disclaimer :	This report and its content are copyright © 2019 Wold Ecology Ltd. All rights reserved. You may not distribute or commercially exploit the content of this report until a non-draft version of this document has been issued. Any unauthorised redistribution or reproduction of part or all the contents of this report will constitute an infringement of copyright.	

---

# **TABLE OF CONTENTS**

<b>1.0</b>	<b>EXECUTIVE SUMMARY</b>	<b>2</b>
<b>2.0</b>	<b>INTRODUCTION</b>	<b>5</b>
<b>3.0</b>	<b>BACKGROUND TO SPECIES</b>	<b>7</b>
<b>4.0</b>	<b>ASSESSMENT METHODOLOGY</b>	<b>7</b>
<b>5.0</b>	<b>RESULTS</b>	<b>15</b>
<b>6.0</b>	<b>IMPACT ASSESSMENT</b>	<b>28</b>
<b>7.0</b>	<b>MITIGATION &amp; COMPENSATION</b>	<b>30</b>
<b>8.0</b>	<b>REFERENCES</b>	<b>41</b>
<b>9.0</b>	<b>APPENDICES</b>	<b>42</b>

## 1.0 EXECUTIVE SUMMARY

1.1 In January 2019, Wold Ecology was commissioned by Mr and Mrs Lyon to undertake a bat scoping survey at the Grange, Gardham Lane, Bewholme. The site is located at approximate National Grid Reference TA 16534 50901 in East Yorkshire.

1.2 The field surveys during January, May, June and August 2019 revealed the following roosts:

Date	Spp.	Roost type	Structure Reference	Roost Location	Access points (including #)	Dimension of roost or explanation where the roost is
28/01/19	Hibernation	No hibernating bats were observed during the endoscope inspection.				
12/05/18	Common pipistrelle x 1 bat	Day	Outbuilding B <b>Roost 1</b>	Located in a gap above the eaves on the south elevation	External roost x 1 access point	Gap approximately 20mm x 60mm.
	Common pipistrelle x 1 bat	Day	Outbuilding B <b>Roost 2</b>	Located in a gap in the external brickwork on the north elevation.	External roost x 1 access point	Missing mortar in the brickwork approximately 20mm x 30mm.
	Common pipistrelle x 1 bat	Day	Outbuilding B <b>Roost 3</b>	Located inside outbuilding B	Internal roost, access via a gap above the doorway on the east gable.	Roost location unknown.
08/06/19	Common pipistrelle x 1 bat	Day	Outbuilding B <b>Roost 1</b>	Located in a gap above the eaves on the south elevation	External roost x 1 access point	Gap approximately 20mm x 60mm.
29/08/19	Emergence	No roosting bats were observed emerging from outbuilding B.				

		Application Site Status
<p><b>Natural England Development License Required prior to building works – Outbuilding B</b></p>	<b>Bats</b>	<p><b>As outbuilding B supports a common pipistrelle day roosts, any works that will disturb, modify or permanently lose the roosts <u>will</u> require a development licence from Natural England. It is also possible that individual bats could turn up roosting in other parts of the outbuilding and or wider site other times of year.</b> A licence will be obtained prior to the following works commencing on outbuilding B:</p> <ul style="list-style-type: none"> <li>• Exclusion of bats and destructive searches by a bat licensed ecologist</li> <li>• Roof stripping and maintenance work</li> <li>• Erection of scaffolding adjacent to outbuilding B and within 5m of a roost</li> <li>• Pointing of masonry</li> <li>• Soft strip</li> <li>• New windows and doors</li> <li>• Internal conversion</li> </ul> <p>The roosts will be disturbed and destroyed as part of the proposed conversion and structural repair work to outbuilding B. Details of appropriate mitigation to be included in the Natural England licence application are outlined in section 7.0.</p>
<p><b>Proceed with caution, timing constraints</b></p>	<b>Birds</b>	<p>Birds are afforded various levels of protection and levels of conservation status on a species by species basis. The most significant general legislation for British birds lies within Part 1 of the Wildlife and Countryside Act 1981 (as amended). Under this legislation, it is an offence to, kill, injure or take any wild bird, take, damage or destroy the nest of any wild bird while that nest is in use or being built, take or destroy an egg of any wild bird. All nests should remain undisturbed and intact until after the breeding bird season – mid February to early September. Planning consent for a development does not provide a defence against prosecution under this act. Bird's nests were observed in the outbuildings.</p>
<p><b>No roosting bats, Method Statement approach (Section 7.0) – Outbuilding A</b></p>	<b>Bats</b>	<p>The field surveys during January, May and June 2019 revealed no evidence of roosting bats in outbuilding A. As no bats or signs of bats were recorded in outbuilding A, a Natural England European Protected Species development license is not required for this building. The method statement outlined in section 7.11 details the best working practice and precautions to be taken to avoid breaking the law and must be followed and provided to all contractors involved with the renovation of outbuilding A.</p>
<p><b>No constraints</b></p>	<b>Barn owl</b>	<p>There was no evidence of barn owls <i>Tyto alba</i> roosting in the outbuildings. No further surveys or mitigation is recommended.</p>

#### 1.4 **Bat roosts are protected throughout the year, whether bats are present or not.**

1.5 All bats and their roosts are fully protected under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000) and are further protected under the Conservation of Habitats and Species Regulations 2017. Should any bats or evidence of bats be found prior to or during development, work must stop immediately, and Natural England contacted for further advice. This is a legal requirement under the aforementioned acts and applies to whoever carries out the work.

- 1.6 Planning consent for a development does not provide a defence against prosecution under this act.
- 1.7 Habitat enhancement for bats should be implemented as outlined in section 7.0, in order to improve foraging opportunities to bats in the local area.
- 1.8 The data collected to support the output of this report is valid for one year. This report is valid until **August 2020**. After this time, additional surveys need to be undertaken to confirm that the status of the outbuildings, as a bat roost, has not changed.
- 1.9 Species list within this report will be forwarded to the local biodiversity records centre to be included on their national database. No personal information will be sent. Please contact Wold Ecology if you do not wish the species accounts and 10 figure grid references to be shared.

Date	Taxon Name	Common Name	Location	County	Grid reference	Record Type	Abundance
May 2019	Pipistrellus pipistrellus	Common Pipistrelle	Bewholme Grange	E. Yorkshire	TA 16534 50901	Day x 3	3

## 2.0 INTRODUCTION

### 2.1 Background Information

2.1.1 In January 2019, Wold Ecology was commissioned by Mr and Mrs Lyon to undertake a bat scoping survey at the Grange, Gardham Lane, Bewholme. The site is located at approximate National Grid Reference TA 16534 50901 in East Yorkshire.

2.1.2 The Application Site comprises the following:

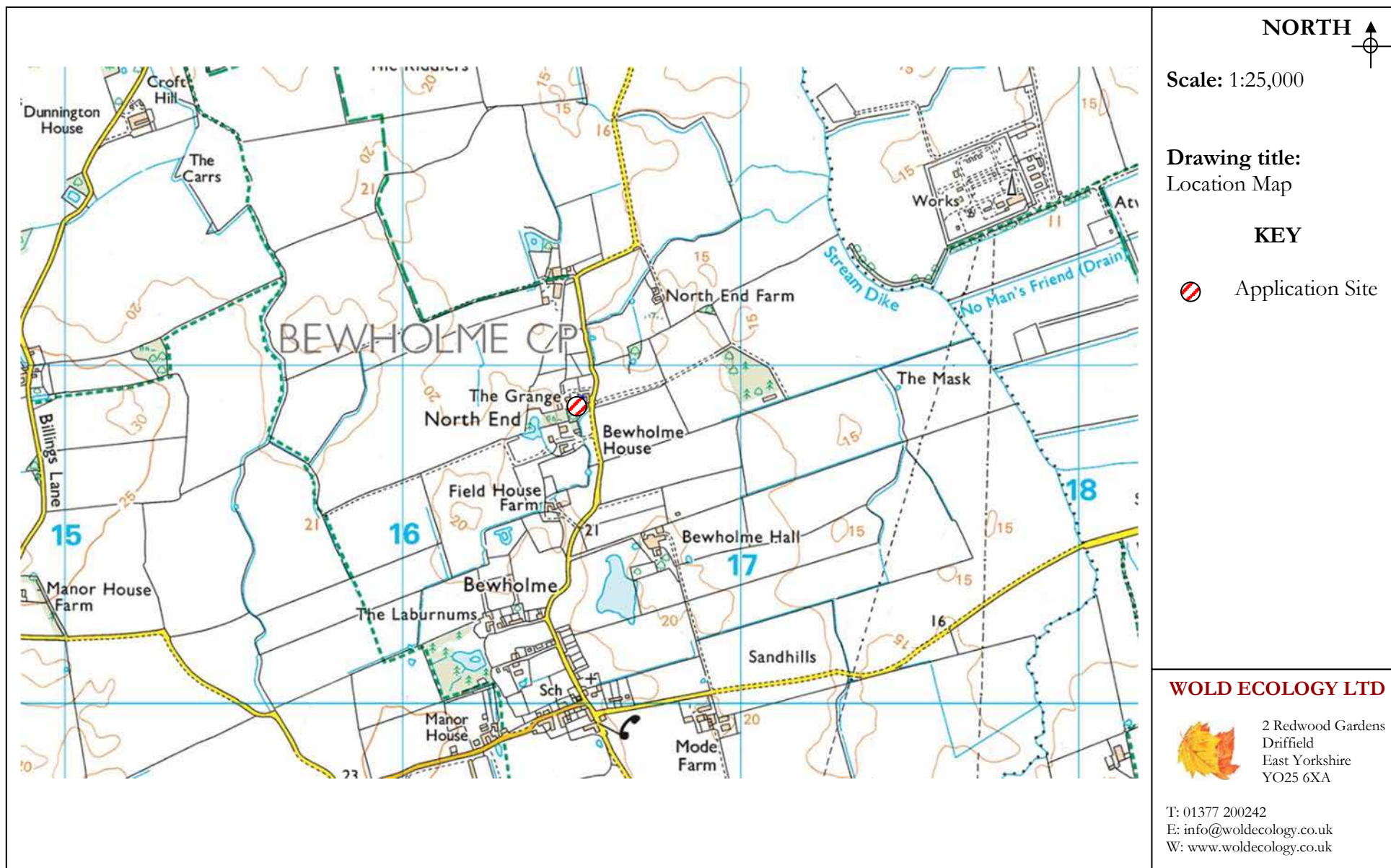
- Outbuilding A
- Outbuilding B

2.1.3 The proposed development includes the conversion of both outbuildings into holiday lets.

### 2.2 Survey Objectives

2.2.1 The site was visited and assessed on 28<sup>th</sup> January 2019, 12<sup>th</sup> May 2019, 8<sup>th</sup> June 2019 and 29<sup>th</sup> August 2019; this was to determine whether the buildings on site contained bat roosts or was suitable to support roosting bats during other times of the year. The work involved the following elements:

Survey objective	Yes/No	Comments
<b>Determine presence/absence of roosting bats</b>	Yes	A daytime, visual inspection for bat roosts and roosting bats. Internal inspection of all roof voids. An assessment of the on-site potential for bats and the likelihood of their presence. Desktop study.
<b>Determine bat usage e.g.s maternity roost, summer roosts</b>	Yes	An assessment of whether bats are a constraint to the development. Emergence (dusk) surveys x 2. Return (dawn) survey. Hibernation survey. Endoscope survey (where accessible)
<b>Identify swarming, commuting or mating sites</b>	Yes	The survey looked at commuting routes from the roost to foraging grounds to ensure works did not impact these.
<b>Other</b>	Yes	The production of a non-technical summary of the legal implications behind bat presence.
		Report the findings of the field survey work and identify recommendations for a potential mitigation strategy.



### **3.0 BACKGROUND TO SPECIES**

#### **3.1 Ecological overview**

3.1.1 There are seventeen species of bat that currently breed in the UK. There is a wide variety of roost type and ecological characteristics between species and for this reason it is necessary to determine the species of bat and the type of roost resident in a structure prior to development. Roosts are utilised by different species of bat, at different times of year for different purposes i.e. summer, breeding, hibernating, and mating etc. (for more detailed information see section 9.0).

3.1.2 Bat populations have undergone a significant decline in the latter part of the 20<sup>th</sup> century; the main factors cited for causing loss and decline include:

- A reduction in insect prey abundance, due to high intensity farming practice and inappropriate riparian management.
- Loss of insect-rich feeding habitats and flyways, due to loss of wetlands, hedgerows, and other suitable prey habitats.
- Loss of winter roosting sites in buildings and old trees.
- Disturbance and destruction of roosts, including the loss of maternity roosts due to the use of toxic timber treatment chemicals.

#### **3.2 Legal Framework**

3.2.1 A bat survey is required prior to planning permission being granted for a development, in order to prevent the potential disturbance, injury and /or death of bats and the disturbance, obstruction and/or destruction of their roosting places. This is in compliance with the Conservation of Habitats and Species Regulations 2017, provision 41 states an offence is committed if a person:

- (a) Deliberately captures, injures, or kills any wild animal of a European protected species (i.e. bats),
- (b) Deliberately disturbs wild animals of any such species,
- (c) Deliberately takes or destroys the eggs of such an animal, or
- (d) Damages or destroys a breeding site or resting place of such an animal.

3.2.2 Section 9 of the Wildlife and Countryside Act (1981) states:

- It is an offence for anyone without a licence to kill, injure, disturb, catch, handle, possess or exchange a bat intentionally. It is also illegal for anyone without a licence to intentionally damage or obstruct access to any place that a bat uses for shelter or protection.

3.2.3 Bat roosts are protected throughout the year, whether or not bats are occupying a roost site.

#### **3.3 Planning Policy Guidance**

3.3.1 A bat survey is a requirement of the Local Planning Authority (LPA), as part of the planning application process. This is specified in the following legislation:

- National Planning Policy Framework (NPPF): Conserving and Enhancing the Natural Environment.



- 3.3.2 To protect and enhance biodiversity and geodiversity, plans should:
- a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation.
  - b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.
- 3.3.3 When determining planning applications, local planning authorities should apply the following principles:
- a) if significant harm to biodiversity 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;
  - b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact 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;
  - c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
  - d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.
- 3.3.4 The LPA has to assess whether the development proposal would breach Article 12(1) of the Habitats Directive. If Article 12(1) would be breached, the LPA would have to consider whether Natural England was likely to grant a European protected species licence for the development; and in so doing the LPA would have to consider the three derogation tests:
- a) ‘Preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment’.
- In addition, the LPA must be satisfied that:
- (b) ‘That there is no satisfactory alternative’
  - (c) ‘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’.
- 3.3.5 Relevant Case Law
- Woolley v Cheshire East Borough (2009).
  - R. (Morge) v Hampshire County Council (2011).
  - Prideaux v. Buckinghamshire County Council and Fcc Environmental UK Limited (2013).

- 3.3.6 The rulings summarise that if it is clear or perhaps very likely that the requirements of the Directive cannot be met because there is a satisfactory alternative or because there are no conceivable ‘other imperative reasons of over-riding public interest’ then the authority should act on that and refuse permission.’
- 3.3.7 The conclusion of the judgement is that LPAs must ensure that the option/alternative that best takes into account all the relevant considerations (not just EPS) should be the preferred option assuming that the other two tests specified in Article 16 (1) are also met.
- 3.3.8 The judgements also clarified that it was not sufficient for planning authorities to claim that they had discharged their duties by imposing a condition on a consent that requires the developer to obtain a licence from Natural England. Natural England considers it essential that appropriate survey information supports a planning application prior to the determination. Natural England does not regard the conditioning of surveys to a planning consent as an appropriate use of conditions.

## 4.0

## ASSESSMENT METHODOLOGY

## 4.1 Status of species present in Yorkshire

Bat Specie	UK Status	UK Distribution	Yorkshire Distribution
Common Pipistrelle	Not threatened	Common & widespread	Common & widespread.
Soprano pipistrelle	Not threatened	Common & widespread	Less common than common pipistrelle but fairly widespread.
Nathusius's pipistrelle	Rare	Restricted. Throughout British Isles.	Scarce, bat detector records only.
Brown long-eared	Not threatened	Widespread	Widespread.
Daubenton's	Not threatened	Widespread	Widespread.
Natterer's	Not threatened	Widespread (except N & W Scotland)	Present
Brandt's	Endangered	England and Wales	Few confirmed records.
Whiskered	Endangered	England, Wales, Ireland & S Scotland.	Present.
Noctule	Vulnerable	England, Wales, S Scotland.	Widespread
Leisler	Vulnerable	Widespread throughout the British Isles, except N Scotland.	Rare (locally common in West Yorkshire).
Barbastelle	Rare	England.	No records since 1950's.

Source - <http://www.yorkbats.freeseerve.co.uk/bats.htm>

## 4.2 Data Review and Desk Study

4.2.1 Currently, there is no pre-existing information on bats at the site.

4.2.2 Wold Ecology employees, field surveyors and network of associate ecologists have recorded brown long-eared *Plecotus auritus*, noctule *Nyctalus noctula*, Natterer's *Myotis nattereri*, Daubenton's *Myotis daubentonii*, whiskered *Myotis mystacinus*, soprano pipistrelle *Pipistrellus pygmaeus* and common pipistrelle *Pipistrellus pipistrellus* within 5km of the Application Site. Wold Ecology bat records date from 2006 and include over 1000 bat activity surveys.

4.2.3 There are no known Natural England development licenses relating to bats within 2km of the Application Site (source – [www.magic.gov.uk](http://www.magic.gov.uk)).

### 4.3 Daytime and Visual Inspection

4.3.1 The daytime assessment identified whether the area had any signs of occupancy and/or bat usage. This took the form of a methodical search, both internally and externally, for actual roosting bats and their signs. Specifically, the visual survey involved:

- Assessment for droppings on walls, windowsills and in roof spaces
- Endoscope survey.
- Hibernation survey.
- Scratch marks and staining on beams, other internal structures and potential entrance and exit holes
- Wing fragments of butterfly and moth species underneath beams and other internal structures
- The presence of dense spider webs at a potential roost can often indicate absence of bats
- Assessment of crevices and cracks in the buildings to assess their importance for roosting bats
- The duration of the daytime, visual inspection was 65 minutes

#### 4.3.2 Summary of daytime inspection and visual survey

Date of each survey visit	Structure reference/location	Equipment used/available	Weather
28/01/19	Outbuilding A Outbuilding B	Binoculars, 1million candle power clu-lite torch, micro Dart endoscope, Dewalt DW03050 Laser Measure. 3.9m telescopic ladders Phantom 4 Drone	5°C, 0% cloud. Beaufort 3, SW. No recent rain.
<b>Comments (to include # of surveyors used for each visit):</b> 1 surveyor undertook the visual inspection.			
12/05/19	Outbuilding A Outbuilding B	Binoculars, 1million candle power clu-lite torch, micro Dart endoscope, Dewalt DW03050 Laser Measure. 3.9m telescopic ladders	10°C, 0% cloud. Beaufort 0. No recent rain.
<b>Comments (to include # of surveyors used for each visit):</b> 2 surveyors undertook the visual inspection.			
08/06/19	Outbuilding A Outbuilding B	Binoculars, 1million candle power clu-lite torch, micro Dart endoscope, Dewalt DW03050 Laser Measure. 3.9m telescopic ladders	14°C, 100% cloud. Beaufort 0. No recent rain.
<b>Comments (to include # of surveyors used for each visit):</b> 2 surveyors undertook the visual inspection.			

29/08/19	Outbuilding B	Binoculars, 1million candle power clu-lite torch, micro Dart endoscope, Dewalt DW03050 Laser Measure. 3.9m telescopic ladders	17°C, 10% cloud. Beaufort 0. No recent rain.
<b>Comments (to include # of surveyors used for each visit):</b> 1 surveyor undertook the visual inspection.			
<b>Personnel:</b> Chris Toohie (Class 2 bat license - 2015-12688-CLS-CLS and RC027) – 28 <sup>th</sup> January 2019 and 12 <sup>th</sup> May 2019. Chris Scott (Class 1 bat licence - 2016-22829-CLS-CLS) – 12 <sup>th</sup> May 2019 and 8 <sup>th</sup> June 2019 Dan Lombard (Class 1 bat licence – 2015-11490-CLS-CLS) – 29 <sup>th</sup> August 2019			

#### 4.4 Activity Surveys

4.4.1 Emergence surveys are used to determine bat presence in a building and can also give a good estimate of the numbers present. Bats can emerge up to 15 minutes before sunset and 2 hours after sunset. The survey times ensured that bats would have emerged from their roost sites and would be foraging (see section 9.4 and 9.5).

##### 4.4.2 Summary of emergence survey(s)

Date of each survey visit	Start/end times and times of sunset	Structure reference/location	Equipment used/available	Weather
12/05/19	Sunset: 2056 Start: 2035 Finish: 2255	Outbuilding A Outbuilding B	Cluson CB2 1 million candle power lamps Digital thermometer Heterodyne bat detectors Anabat Walkabout Wildlife Acoustics EM Touch 2 PRO EM3 Anabat Express Night vision scope	10°C - 8°C, 0% cloud. Beaufort 0. No recent rain.
<b>Comments (to include # of surveyors used for each visit):</b> 4 surveyors were positioned around the site so that all potential access points, identified in the daytime, visual inspection, could be observed.				
29/08/19	Sunset: 2000 Start: 1930 Finish: 2200	Outbuilding B	Cluson CB2 1 million candle power lamps Digital thermometer Heterodyne bat detectors Anabat Walkabout Wildlife Acoustics EM Touch 2 PRO EM3 Anabat Express Night vision scope	17°C - 14°C, 10% cloud. Beaufort 0. No recent rain.

**Comments (to include # of surveyors used for each visit):** 2 surveyors were positioned around the site so that all potential access points, identified in the daytime, visual inspection, could be observed.

**Personnel:**

Chris Toohie (Class 2 bat license - 2015-12688-CLS-CLS and RC027) – 12<sup>th</sup> May 2019  
 Chris Scott (Class 1 bat licence - 2016-22829-CLS-CLS) – 12<sup>th</sup> May 2019  
 Graham Coulbeck and Ethan Scott – 12<sup>th</sup> May 2019  
 Dan Lombard (Class 1 bat licence – 2015-11490-CLS-CLS) – 29<sup>th</sup> August 2019  
 Josh Saunders – 29<sup>th</sup> August 2019

4.4.3 Return surveys conducted at sunrise are particularly useful as bats tend to swarm outside their roosts for up to 2 hours before entering, thus allowing the surveyor more time to identify the bat and entrance locations. Bats will return to roosts approximately 90 minutes before sunrise and 15 minutes after. The timing of the survey ensured that returning bats would be recorded (see section 9.4 and 9.5).

4.4.4 Summary of return survey(s)

Date of each survey visit	Start/end times and times of sunrise	Structure reference/location	Equipment used/available	Weather
08/06/19	Sunrise: 0437 Start: 0240 Finish: 0500	Outbuilding A Outbuilding B	Cluson CB2 1 million candle power lamps Digital thermometer Heterodyne bat detectors Anabat Walkabout Wildlife Acoustics EM Touch 2 PRO EM3 Anabat Express Night vision scope	14°C, 100% cloud. Beaufort 0. No recent rain.

**Comments (to include # of surveyors used for each visit):** 3 surveyors were positioned around the site so that all potential access points, identified in the daytime, visual inspection, could be observed.

**Personnel:**

Chris Scott (Class 1 bat licence - 2016-22829-CLS-CLS) – 8<sup>th</sup> June 2019  
 Graham Coulbeck and Ethan Scott – 8<sup>th</sup> June 2019

**4.5 Summary of personnel**

Personnel	Experience	Licence No.
Chris Toohie MCIEEM	Project Manager of Wold Ecology with over 11 years' experience surveying bat roosts for development licences. Chris has conducted over 800 bat surveys since 2006, held over 60 development licenses and is one of only 186 (April 2019) Natural England Registered Consultants who can hold a Bat Mitigation Class Licence.	RC027 and 2015-12688-CLS-CLS
Chris Scott	Experienced Wold Ecology Ltd bat surveyor, Chris has conducted over 150 bat activity surveys for Wold Ecology since 2009.	2016-22829-CLS-CLS

Daniel Lombard MCIEEM	Experienced bat surveyor since 2010, Daniel has assisted with over 300 bat surveys for Wold Ecology and is currently working towards his bat handling license.	2015-11490- CLS-CLS
Josh Saunders	Experienced Wold Ecology Ltd bat surveyor with over 2 years of bat activity survey experience undertaken under the tuition of Wold Ecology licensed bat ecologists.	N/A
Graham Coulbeck Ethan Scott	Wold Ecology Ltd associates with bat activity survey experience undertaken under the tuition of Wold Ecology licensed bat ecologists.	N/A

## 5.0 RESULTS

### 5.1 Habitat description

5.1.1 The Application Site is located 850m north of the small village of Bewholme; in a rural location. The Application Site and grounds are less than 1 ha and the studied outbuildings are immediately surrounded by mature private gardens and Bewholme Grange residential dwelling. The Grange is a residential dwelling that also has bat roosting potential and is currently occupied.

#### 5.1.2 Adjacent Landscapes

5.1.2.1 Bewholme is surrounded by mixed agricultural land dominated by arable with grazed pastures. Woodland cover within 2km is low and occurs as shelterbelts adjacent to farms and small holdings, singleton trees and plantations. Whilst the Application Site is not directly connected to any optimum bat foraging habitat, connectivity within 500m is provided by hedgerows that bound most arable fields and woodland cover. A number of watercourses are present within 2km.

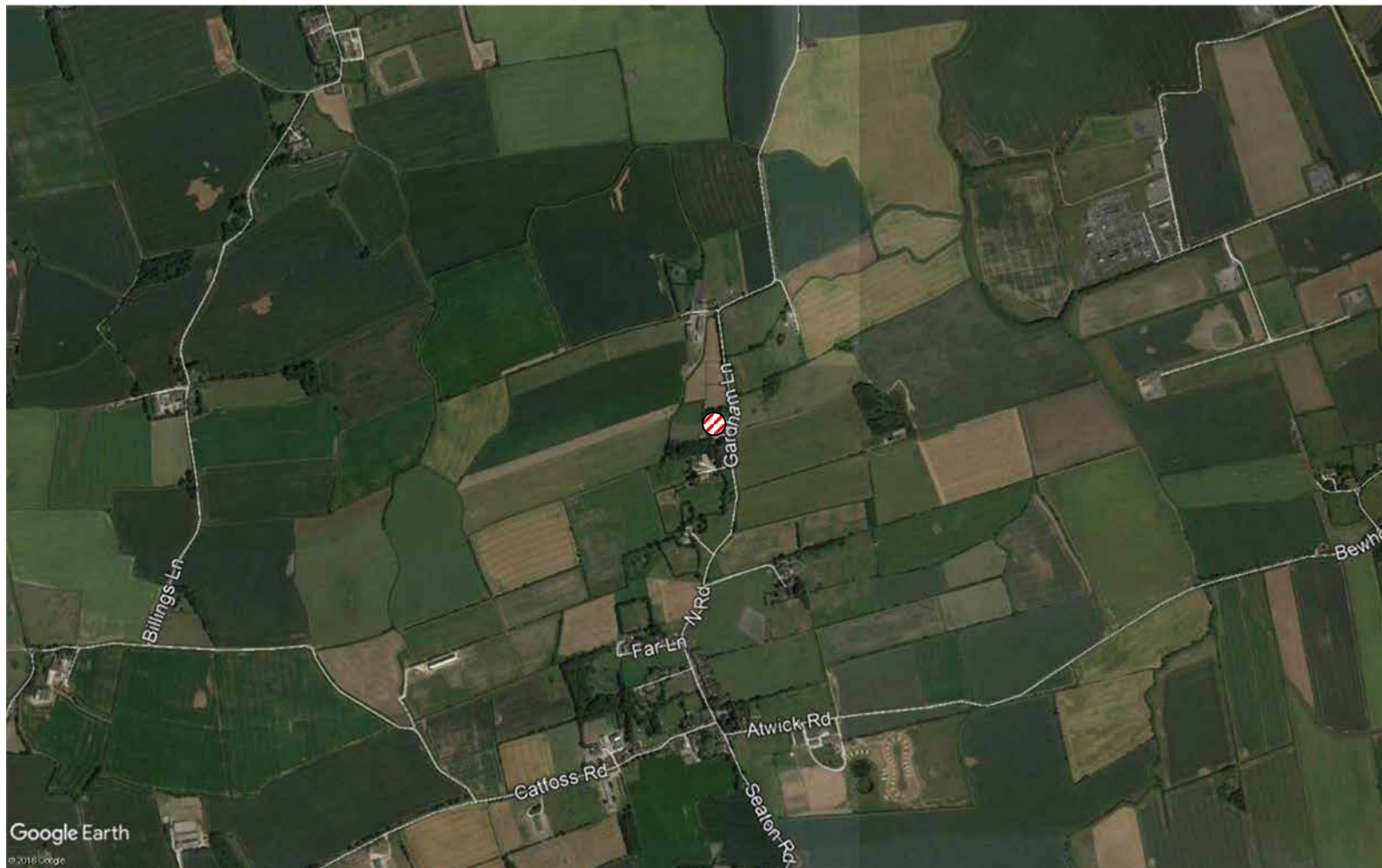
5.1.2.2 Wold Ecology concludes that the adjacent habitats could be used by small numbers of commuting and foraging bats. These habitats are not extensive and are similar to surrounding mature private gardens and consequently, the Application Site and adjacent habitats are not considered to be integral to the favourable conservation status of local bat populations.

#### 5.1.3 Habitat Summary

5.1.3.1 A summary of the surrounding habitat is (radius of < 2km from the site):

- Buildings – farm buildings and residential properties
- Hedgerow
- Hedgerows with trees
- Mature trees and woodland
- Arable
- Mature private gardens
- Ponds and watercourses
- Stream Dike
- No Man's Friend Drain
- Dunnington Sewer
- Grazed pasture






NORTH 

Scale: 1:25,000

Drawing title:  
Aerial Photograph

**KEY**

 Application Site

**WOLD ECOLOGY LTD**



2 Redwood Gardens  
Driffield  
East Yorkshire  
YO25 6XA

T: 01377 200242  
E: [info@woldecology.co.uk](mailto:info@woldecology.co.uk)  
W: [www.woldecology.co.uk](http://www.woldecology.co.uk)

## 5.2 Building descriptions

5.2.1 The bat survey and assessment targeted the following (see section 5.5):

- a. **Outbuilding A** – the ‘L’ shaped outbuilding is single storey and comprises brick walls and a pitched roof. The roof is supported by smooth sawn timbers and is partially underdrawn with a bitumen felt product. The building is used for storage.
- b. **Outbuilding B** – is two storeys and comprises red brick walls and a pitched roof covered with pan tiles. The roof is supported by smooth sawn timbers and is underdrawn with a bitumen felt product. The building is used for storage.

5.2.2 **Outbuilding A** (see 5.5 plates 1 - 3) - the following roosting opportunities were present within the fabric of the outbuilding:

- Gaps beneath the ridge tiles where mortar has been displaced.
- The majority of the ridge tiles are missing.
- Loose fitting pan tiles with gaps beneath.
- Missing/slipped pan tiles.
- Gaps in missing mortar below gable tiles.
- Gaps above the eaves.
- Missing mortar in the brick work.
- Subsidence cracks.
- The timber doors and timber window frames were tight fitting.
- Gaps above the internal wall plates.
- Gaps above the ridge beam.
- Gaps between felt and pan tiles above.
- Gaps in the internal brick work.
- Gaps in the roof structure and mortice joints.
- Access into the building is provided by open doors and windows.
- Ivy *Hedera helix* is growing on the building but is of insufficient structure to support roosting bats.
- No evidence of bats was observed.
- The building has been assessed as having a MODERATE SUITABILITY to support bats.

5.2.3 **Outbuilding B** (see 5.5 plates 4 - 8) - the following roosting opportunities were present within the fabric of the outbuilding:

- Gaps beneath the ridge tiles where mortar has been displaced.
- There are no missing ridge tiles.
- Loose fitting pan tiles with gaps beneath.
- Gaps in missing mortar below gable tiles.
- Gaps above the eaves.
- Missing mortar in the brick work.
- Gaps adjacent to timber doors and timber windows.
- Gaps adjacent to and within timber lintels.
- Gaps behind timber barge boards.
- Gaps above the internal wall plates.
- Gaps between felt and pan tiles above.
- Gaps in the internal brick work.
- Access into the building is provided by gaps above the eaves.

- There was no open doors/window access into the building.
- Ivy *Hedera helix* is growing on the building but is of insufficient structure to support roosting bats.
- The following evidence of bats was observed:
  - 15 bat droppings were observed on the first floor of the outbuilding. The location of the bat droppings suggests an internal roost located above the wall plate on the east gable.
  - 10 bat droppings were observed on the first floor of the outbuilding. The location of the bat droppings suggests an internal roost located above the internal eaves on the south elevation – roost 1.
  - A scattering of bat droppings was observed throughout the first floor of the outbuilding.
- The outbuilding has been assessed as having a HIGH SUITABILITY to support bats.

5.3 Based on the field survey and the criteria in table 4.1 (Bat Surveys for Professional Ecologists – 3<sup>rd</sup> Edition, p35. Bat Conservation Trust, 2016), the Application Site and studied outbuildings have the following suitability for bats:

	Negligible	Low	Moderate	High
Application Site habitats (<2km)		X		
Outbuilding A			X	
Outbuilding B				X

**Table 4.1 Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement.**

Suitability	Description Roosting habitats	Commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions <sup>a</sup> and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation <sup>b</sup> ).  A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential. <sup>c</sup>	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat.  Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions <sup>a</sup> and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.  Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions <sup>a</sup> and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge.  High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland.  Site is close to and connected to known roosts.

Source - Bat Surveys for Professional Ecologists – 3<sup>rd</sup> Edition, p35. Bat Conservation Trust, 2016.

### 5.3 Justification of activity surveys

5.3.1 The level of survey to give confidence in a negative result is summarised as (Bat Surveys for Professional Ecologists, 3<sup>rd</sup> Edition. Bat Conservation Trust, 2016):

Low Roost Suitability	Moderate Roost Suitability	High Roost Suitability
One survey visit. One dusk emergence or dawn re-entry survey.	Two separate survey visits. One dusk emergence survey and a separate dawn re-entry survey.	Three separate survey visits. At least one dusk emergence survey and a separate dawn re-entry survey. The third visit could either be dusk or dawn.
May to August.	May to September with at least one survey between May to August.	May to September with at least two surveys between May to August.
Activity surveys should be at least 2 weeks apart. Moderate buildings will be assessed according to site location and habitats within the locality and if there is a possibility that late emerging bats are present, a dawn survey will be more appropriate.		

5.3.2 The Application Site requires the following surveys between May and late September:

	Emergence (dusk)			Re-entry (dawn)		
	LOW	MOD	HIGH	LOW	MOD	HIGH
Outbuilding A			x 2			x 1
Outbuilding B		x 1		x 1		

## 5.4 Results of Activity Surveys

### 5.4.1 Emergence Survey

#### 5.4.1.1 12<sup>th</sup> May 2019

- The first common pipistrelle bat was detected at 2106. The bat emerged from a gap in the brickwork on the north elevation of outbuilding B (Roost 2).
- Common pipistrelle, soprano pipistrelle, Natterer's, noctule and brown long-eared bats were detected and/or observed foraging and commuting around the site in low numbers.
- The following bat roosts were observed:
  - **Roost 1** – common pipistrelle roost located in a gap above the eaves on the south elevation of outbuilding B. The roost contains 1 bat (see 5.5 plate 4).
  - **Roost 2** – common pipistrelle roost located in a gap in the brickwork on the north elevation of outbuilding B. The roost contains 1 bat (see 5.5 plate 5).
  - **Roost 3** – common pipistrelle roost located in side outbuilding B, the bat accessed the outbuilding via a gap adjacent to the doorway on the west gable of outbuilding B. The roost contains 1 bat (see 5.5 plate 8).
- No bats were observed emerging from the outbuilding A.

#### 5.4.1.2 29<sup>th</sup> August 2019

- The first common pipistrelle bat was detected at 2027. This was close to the anticipated (< 30 minutes after sunset) emergence time and suggests that a roost is close by. The bat appeared from north of the Application Site.
- Common pipistrelle, noctule and brown long-eared bats were detected and/or observed foraging and commuting around the site in low numbers.
- No bats were observed emerging from the building.

5.4.1.3 For survey results see appendix 9.4 and 9.5.

### 5.4.2 Return Survey

#### 5.4.2.1 8<sup>th</sup> June 2019

- Bat activity was constant low throughout much of the survey with the site used by common pipistrelle and brown long-eared bats.
- The following bat roosts were observed:
  - **Roost 1** – common pipistrelle roost located in a gap above the eaves on the south elevation of outbuilding B. The roost contains 1 bat (see 5.5 plate 4).

5.4.2.2 For survey results see appendix section 9.4 and 9.5.



5.5

Photographs of key features – 28<sup>th</sup> January 2019

Plate 1 – outbuilding A, west elevation.



Plate 2 – outbuilding A, east elevation.



Plate 3 – outbuilding A, internal roof structure.



Plate 4 – outbuilding B, south elevation and west gable.



Plate 5 – outbuilding B, north elevation and west gable.



Plate 6 – outbuilding B, internal roof structure.

Location of bat droppings on the internal gable.





Plate 7 – outbuilding B, internal roof structure.

Location of bat droppings on the internal gable.

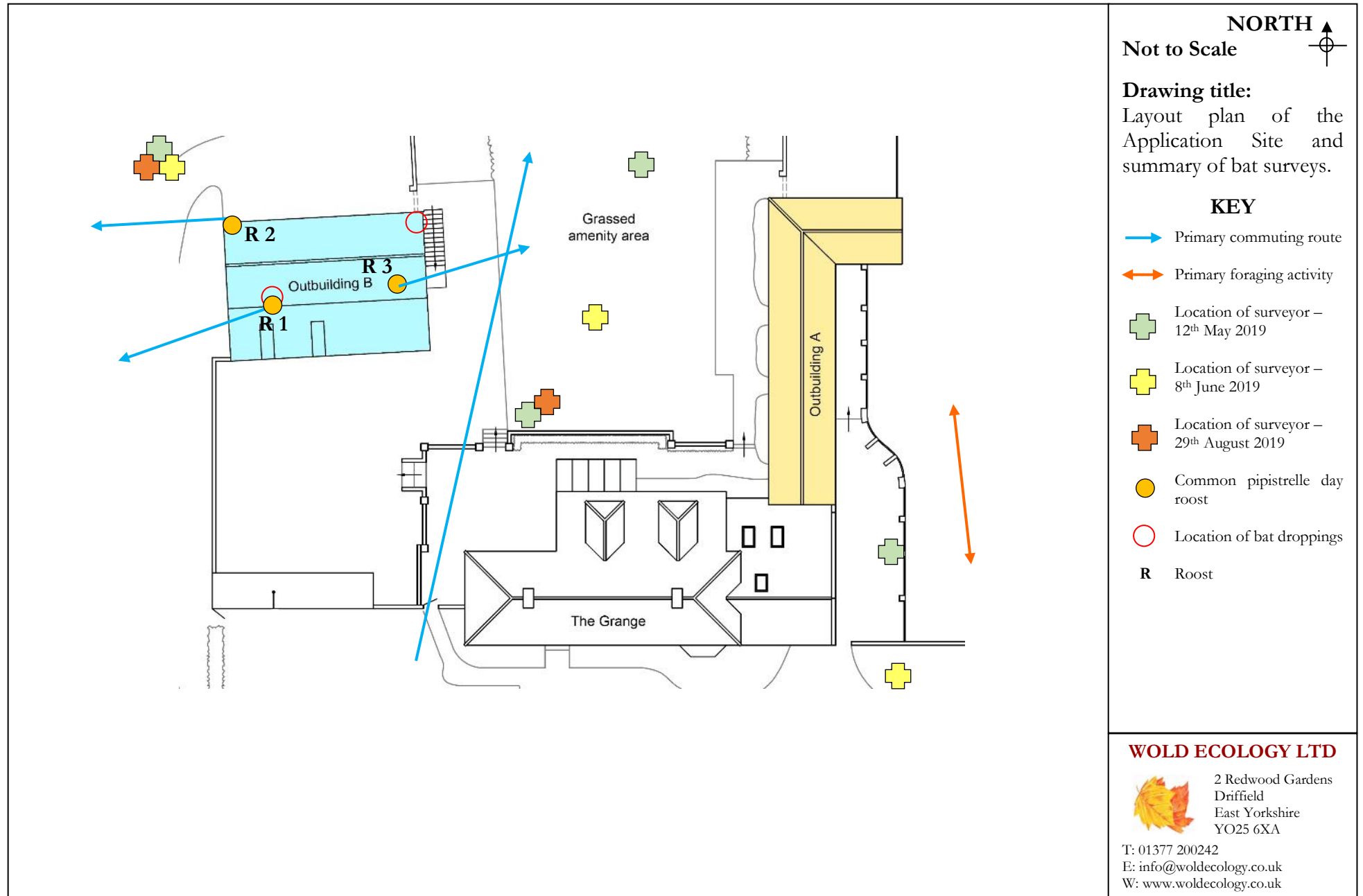


Plate 8 – outbuilding B, south elevation and east gable.



**Roost 3** – common pipistrelle  
x 1 bat access point.





## 5.6 Summary of field surveys conducted in 2019

Date	Type of survey	Results			Building Dimensions (m)		
					L	W	H
28/01/19	Habitat assessment	Wold Ecology concludes that the adjacent habitats could be used by small numbers of commuting and foraging bats. These habitats are not extensive and are similar to surrounding mature private gardens and consequently, the Application Site and adjacent habitats are not considered to be integral to the favourable conservation status of local bat populations.					
	Visual inspection.	<i>Outbuilding A</i> There were no signs of roosting bats or bat activity inside the building, but due to the presence of features with potential to provide roosting opportunities for bats, the building has been assessed as having a MODERATE SUITABILITY to support bats (see 5.3 plates 1 - 3).			18.0	3.6	3.1
<i>Outbuilding B</i> <ul style="list-style-type: none"> <li>The following evidence of bats was observed:               <ul style="list-style-type: none"> <li>15 bat droppings were observed on the first floor of the outbuilding. The location of the bat droppings suggests an internal roost located above the wall plate on the east gable.</li> <li>10 bat droppings were observed on the first floor of the outbuilding. The location of the bat droppings suggests an internal roost located above the internal eaves on the south elevation – roost 1.</li> <li>A scattering of bat droppings was observed through the first floor of the outbuilding.</li> </ul> </li> </ul> Outbuilding 2 has been assessed as having HIGH SUITABILITY to support bats, due to the presence of bat droppings and other features which have potential to provide roosting opportunities for bats (see 5.3 plates 4 - 8).			11.8	4.9	4.6		
28/01/19		Hibernation	No hibernating bats were observed during the endoscope inspection.				
Date	Spp.	Roost type	Structure Reference	Roost Location	Access points (including #)	Dimension of roost or explanation where the roost is	
12/05/18	Common pipistrelle x 1 bat	Day	Outbuilding B <b>Roost 1</b>	Located in a gap above the eaves on the south elevation	External roost x 1 access point	Gap approximately 20mm x 60mm.	
	Common pipistrelle x 1 bat	Day	Outbuilding B <b>Roost 2</b>	Located in a gap in the external brickwork on the north elevation.	External roost x 1 access point	Missing mortar in the brickwork approximately 20mm x 30mm.	
	Common pipistrelle x 1 bat	Day	Outbuilding B <b>Roost 2</b>	Located inside outbuilding B	Internal roost, access via a gap above the doorway on the east gable.	Roost location unknown.	

08/06/19	Common pipistrelle x 1 bat	Day	Outbuilding B <b>Roost 1</b>	Located in a gap above the eaves on the south elevation	External roost x 1 access point	Gap approximately 20mm x 60mm.
29/08/19	Emergence	No roosting bats were observed emerging from outbuilding B.				

## 5.7 Interpretation and evaluation

### 5.7.1 Presence/absence

5.7.1.1 The site has been visited four times by Wold Ecology during 2019. The data provides an insight into how bats utilise the site during winter, early, mid and late summer months. The surveys were conducted in optimum conditions with fine weather for a period of 48 hours prior to the surveys. Therefore, bat activity would not have been affected by adverse weather conditions i.e. not emerging or returning to the roost site earlier than usual. The confidence in the results is therefore high.

5.7.1.2 Based on field surveys conducted during January, May, June and August 2019, it has been determined that the studied outbuildings at Bewholme Grange contain the following bat roosts (see 9.3):

Structure/reference	Species	Count/estimate	Site status assessment (maternity etc.)	Conservation significance of roost	Use and importance of the site throughout the year
Outbuilding B <b>Roost 1</b>	Common pipistrelle	1	Day roost	LOW	No evidence to suggest a maternity roost or significant numbers of bats. Summer use.
Outbuilding B <b>Roost 1</b>	Common pipistrelle	1	Day roost	LOW	
Outbuilding B <b>Roost 1</b>	Common pipistrelle	1	Day roost	LOW	

5.7.1.3 No signs of roosting bats or bat roosts were recorded in outbuilding A or the adjacent residential house which is outside of the development area.

### 5.7.2 Site Status Assessment

5.7.2.1 Based on a building inspection, two emergence surveys and return survey, it has been determined that outbuilding B supports:

- Three separate common pipistrelle roosts.

5.7.2.2 All roosts are located adjacent to surrounding favourable foraging habitat which will play a significant role in the ecology of the local bat population.

5.7.2.3 The survey results are based on survey work conducted in January, May, June and August 2019. Outbuildings A and B on site has features which have high/moderate suitability to support roosting bats, there remains the possibility that bats could roost in other parts of the site at various times of the year.

5.7.2.4 Wold Ecology concludes that the studied outbuildings are unlikely to support a maternity roost for the following reasons:

- Bat activity was low throughout the surveys.

- No accumulation of droppings or staining's conducive of significant numbers of bats was observed (although these are sometimes hard to detect).
- Only single bats were observed emerging/returning to the roost sites.

5.7.2.5 Wold Ecology considers that outbuildings A and B are unlikely to support hibernating bats for the following reasons:

- The outbuildings are currently unused and are not heated.
- The body temperature of hibernating bats is near the ambient temperature. The composition of the outbuildings will not ensure that consistent temperatures of between 0°C and 5°C will be maintained.
- The brickwork and pan tile structure of the outbuildings ensure that fluctuating temperatures occur; this can result in shorter bouts of hibernation or temperatures too cold for bats survive. Arousals represent 80–90% of the total cost of hibernation, because bats must raise their body temperature to euthermic levels (Thomas et al. 1990).
- No hibernating bats were observed during the January 2019 endoscope survey.

### 5.7.3 Constraints

5.7.3.1 There are no constraints to the survey.

## 6.0 **IMPACT ASSESSMENT** – in the absence of mitigation

6.1 Outbuilding B supports three separate common pipistrelle day roosts. The proposed development to outbuilding B will involve the conversion of the building into a holiday-let. Unsupervised structural work, erection of scaffolding, removal of tiles, re-roofing, re-pointing, new glazing, internal refurbishment and soft strip will result in major disturbance to the roosts. Bats are susceptible to disturbance as a result of a development affecting a roost site. The pre-construction period of the development will result in significant alterations and disturbance to the roost sites.

6.2 **Initial impacts: disturbance** (human presence, noise, vibration, dust, lighting, access obstruction due to scaffolding and plastic sheeting etc.)

- The construction of scaffolding against the roof of outbuilding B which will cause an obstruction to the access points = minor negative at a site level.
- Roof stripping could kill/injure bats if they are resting between tiles and the contractor steps on the tiles to gain higher access = major negative at a site level.
- Lighting during night working could lead to disturbance of emerging and foraging bats, potentially leading to roost abandonment in the short term = moderate negative impact at site level.
- Vibration, noise and dust from building works may impact on roosting bats that may be present and this may lead to roost abandonment = moderate negative at a site level.

6.3 **Long-term impacts: roost modification**

6.3.1 No modification of roosts will occur.

6.4 **Long-term impacts: roost loss**

- Based on current information and in the absence of mitigation, the conversion works to outbuilding B will involve the permanent loss of 3 bat roosts.
- The removal of the roofing and roof timbers will result in major disturbance to the roosts located in the roof structure and there is potential for killing/injuring bats if heavy force is used to remove the roof components = major negative at a site level.
- The works involve re-roofing the roof under which the bats are roosting, if bats are found beneath tiles or if they are roosting on or above the ridge beam, there is the potential for killing/injury of bats = major negative at a site level.
- The sealing up of the access points during pointing up of the external brick work and internal plastering could kill/injure bats through entombment if bats are roosting within the crevice = major negative at a site level.
- New glazing could trap bats inside the building, and this could kill/injure bats that are roosting in the internal structure = major negative at a site level.
- Removal of windows/doors could kill/injure bats if they are resting in gaps adjacent and heavy force is used to remove the frames = major negative at a site level.
- Removal of brick work could kill/injure bats if they are resting in gaps adjacent and heavy force is used to remove the masonry = major negative at a site level.

**6.5 Long term impacts: fragmentation and isolation of roost**

6.5.1 There are no plans to alter the habitat on site and consequently, there will be no fragmentation and isolation during the development as the surrounding, supporting habitat will not be affected.

**6.6 Post development: interference impacts**

- An increase in lighting through the installation of security lighting on the external walls of buildings will affect bat activity in the location of the roost sites. Low level security lighting will be installed on the new buildings on site however this will not shine into the adjacent foraging habitat or bat box locations, ensuring continued usage of the site for commuting and foraging - low negative at a site level.

**6.7 Predicted scale of impacts**

6.7.1 The current information obtained is based on a desk top study, visual inspection and activity surveys conducted in May, June and August.

6.7.2 The common pipistrelle and brown long-eared bat day roosts within outbuilding B at Bewholme Grange are of low conservation significance to Yorkshire. The roosts each contain less than 2 individual bats and are most probably occupied by male bats or none breeding females. Male summer roosts of a common and widespread species are of low conservation significance and therefore, the loss of the roosts will not have a significant impact at a local, regional or national level.

**6.8 Summary of predicted scale of impacts - in the absence of mitigation**

Species and numbers	Roost type	Predicted Scale of Impact (place X in relevant column)			Notes
		Site	County	Regional	
Common pipistrelle x 3	Day x 3	X			In the absence of mitigation, the conversion works would cause the loss of 3 separate day roosts used by 3 bats.

6.8.1 Based on the survey data, assessment and guidance from the Bat Mitigation Guidelines (page 39, English Nature 2004) the overall accumulative impact of the development on bat populations is considered to be **low**.

6.8.2 Outbuilding A did not contain bat roosts. Bat activity surrounding the buildings was also low, with a total of 5 common and widespread species of bat observed foraging and commuting in low numbers.

## 7.0 MITIGATION & COMPENSATION

### 7.1 Legal Protection

7.1.1 Legal obligations towards bats are generally concerned with roost protection. All developments, known to contain bat roosts, require a development licence from Natural England. Under the Wildlife and Countryside Act (1981) and the Habitats and Species Regulations (2017), it is an offence for anyone without a licence to:

- Deliberately take, injure or kill a wild bat
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats.
- Damage or destroy a place used by bats for breeding or resting (roosts) (even if bats are not occupying the roost at the time)
- Possess or advertise/sell/exchange a bat of a species found in the wild in the EU (dead or alive) or any part of a bat.
- Intentionally or recklessly obstruct access to a bat roost.

7.1.2 Planning consent for a development does not provide a defence against prosecution under these acts.

7.1.3 **Bat roosts are protected throughout the year, whether bats are present or not.**

7.1.4 **As outbuilding B supports a common pipistrelle day roosts, any works that will disturb, modify or permanently lose the roosts will require a development licence from Natural England. It is also possible that individual bats could turn up roosting in other parts of the outbuilding and or wider site other times of year.** A licence will be obtained prior to the following works commencing on outbuilding B:

- Exclusion of bats and destructive searches by a bat licensed ecologist
- Roof stripping and maintenance work
- Erection of scaffolding adjacent to outbuilding B and within 5m of a roost
- Pointing of masonry
- Soft strip
- New windows and doors
- Internal conversion

7.1.5 Mitigation is required to avoid or reduce the impact of a development on roosting and feeding bats present on site. Mitigation is designed to meet the requirements of the bat species present in the roost. The Bat Mitigation Guidelines (2004) defines the key principles which will be required in mitigation proposals. These are: modifying the scheme design, altering the timing of the works and the creation of replacement roosts and/or habitats.

7.1.6 Based on current survey data, the site meets the criteria for a Natural England Bat Mitigation Class Licence which was launched in spring 2015 (previously Bat Low Impact Class License) and trials have successfully reduced the burden on the customer by reducing the application paper work, scrutiny of the three tests prior to a licence being granted and speed in which a licence decision is determined. It also enabled a more proportionate approach to licensing to be taken for certain case types which will reduce the delays if roosting bats are present. The licence application process currently requires the input of a qualified bat ecologist/consultant and includes:


- The Bat Mitigation Class Licence requires 3 surveys to be completed within the previous activity survey season.
- It is designed for low impact and low numbers of roosting bats only, e.g. not maternity roosts or hibernacula. The development must also not affect more than three separate roost sites of the seven most common and widespread bat species. The low impact bat class license negates the statutory 6 to 10 week period for a normal license to be considered, although there is still a waiting period of around 5 to 15 working days (the average during the trial was 6 working days).
- A walk over survey/check must be undertaken within 3 months prior to the Natural England application submission to ensure that conditions have not changed since the most recent survey was undertaken. Details of any changes to conditions and habitats and/or structures on site since the surveys were undertaken will be documented.
- The submission of a licence to capture, disturb and/or destroy the roosts or resting places of bats.
- Chris Toohie is one of only 186 bat ecologists (April 2019) in the UK that can hold a Bat Mitigation Class Licence.
- For additional information on licences please refer to Natural England Guidance Leaflet WML-G12 (see [www.naturalengland.org](http://www.naturalengland.org)).

## 7.2 Mitigation Strategy

- 7.2.1 Natural England requires mitigation and compensation to be proportionate to the size of the impact and the importance of the population affected and as a principle:
- There should be no net loss of roost sites and that compensation should provide an enhanced resource since the adoption of new roost sites by bats is not guaranteed.
  - Compensation should ensure that the affected bat population can continue to function as before, so attention may need to be given to surrounding habitats.
  - The strategy should be considered to ensure that the bat populations at the site are maintained at a favourable conservation status.
  - English Nature (page 39, Bat Mitigation Guidelines 2004) provide guidance on proportionate mitigation depending on the number, species and conservation status of bats observed.



English Nature (2004) guidelines for proportionate mitigation. The definition of common, rare and rarest species requires regional interpretation.

Low	<b>Roost status</b>	<b>Mitigation/compensation requirement (depending on impact)</b>
<b>Conservation significance</b> 	Feeding perches of common/rarer species  Individual bats of common species  Small numbers of common species. Not a maternity site	Flexibility over provision of bat-boxes, access to new buildings etc. No conditions about timing or monitoring
	Feeding perches of Annex II species	Provision of new roost facilities where possible. Need not be exactly like-for-like, but should be suitable, based on species' requirements. Minimal timing constraints or monitoring requirements
	Small numbers of rarer species. Not a maternity site	Timing constraints. More or less like-for-like replacement. Bats not to be left without a roost and must be given time to find the replacement. Monitoring for 2 years preferred.
	Hibernation sites for small numbers of common/rarer species	Timing constraints. Like-for-like replacement as a minimum. No destruction of former roost until replacement completed and usage demonstrated. Monitoring for at least 2 years.
	Maternity sites of common species	Oppose interference with existing roosts or seek improved roost provision. Timing constraints. No destruction of former roost until replacement completed and significant usage demonstrated. Monitoring for as long as possible.
<b>High</b>	Maternity sites of rarer species	Oppose interference with existing roosts or seek improved roost provision. Timing constraints. No destruction of former roost until replacement completed and significant usage demonstrated. Monitoring for as long as possible.
	Significant hibernation sites for rarer/rarest species or all species assemblages	
	Sites meeting SSSI guidelines	
	Maternity sites of rarest species	

7.2.2 The roosts within outbuilding B at Bewholme Grange are of low conservation significance and therefore requires 'more or less like for like' replacement with no constraints on timing.

### 7.3 Method Statement

7.3.1 **The method statement has been produced based on current survey data. The information will guide any modifications required to the scheme design, outline necessary timing of the works and recommend the creation of replacement roosts and/or habitats. The information contained within the following method statement will be used as guidance to support any subsequent Natural England development license.**

#### 7.3.2 Timing

7.3.2.1 There are no mandatory timing constraints when low numbers of summer roosting bats are observed.

7.3.2.3 The building works must be carefully programmed so that roosting opportunities are permanently available during the development. Permanent and/or temporary roost sites will be provided prior to building works. Bat boxes will be placed on trees or buildings within 50m of the existing roost sites to ensure roosting opportunities are available throughout the development period.

#### 7.3.3 Site Induction

7.3.3.1 Prior to works commencing on site, the bat ecologist will present a tool box talk to the license holder, client, site manager, contractors and those involved with site works that may impact upon bats. The toolbox talk, and accompanying method statement will include, but not restricted to the following:

- Introduction to bats on site
- Background to bats
- Legislation relating to bats
- Description of bat roost locations as described in table 5.6.
- Licensable activities
- Method Statement
- Mitigation\*
- What to do if bats are discovered
- Figure E2a – Location of roost sites.
- Figure E3 – Location of mitigation\*.
- Figure D – Impacts Plan and licensable works.
- Work Schedule.
- Natural England Annex License\*.

\* If applicable

7.3.3.2 The toolbox talk will only be presented by the named bat ecologist on the Natural England license documentation and the method statement and license will be kept on site at all times.

### **7.3.4 Pre-Works Surveys**

- 7.3.4.1 A dusk survey (under suitable weather conditions ( $>6^{\circ}\text{C}$ )) will be undertaken to assess activity.
- 7.3.4.2 An endoscope will be used to conduct a thorough inspection of all features with bat roosting potential including known roost sites, internal roof timbers, roof structures and masonry of the building; this is in order to detect any roosting bats, prior to works. Empty crevices and gaps will be blocked immediately with pieces of foam prior to disturbance works.
- 7.3.4.3 A safe working platform will be required so that a thorough and safe inspection can be undertaken. This will be either scaffolding, mobile elevated work platform or similar.

### **7.3.5 Exclusion of Roosts**

- 7.3.5.1 To enable the exclusion to take place in outbuilding B, an assessment will be made to determine the current level of bat activity. If bats are roosting, an exclusion of roosts will be undertaken. The method to be implemented will aim to exclude bats from the roost by closing access points and allow for them to leave un-stressed on their own accord but not enabling their return, therefore eliminating the chance of bats being present during the development. Capture and removal by hand will only be used where absolutely necessary and possible. The capture of bats is not planned as a method during the exclusion of bats from outbuilding B and will only be required as an absolute last option.
- 7.3.5.2 A device will be used to exclude roosts 1 - 3. Exclusion of bats will be undertaken if suitable weather conditions prevail (night time temperatures for four consecutive nights are  $> 6^{\circ}\text{C}$ ).
- 7.3.5.3 The exclusion devices will either be constructed from a plastic sheet (or similar material) or a section of smooth drainage pipe (or similar) with a diameter of 50mm. This will be secured around the roost in order to allow the bat to leave the roost but prevent its return, exclusion devices will remain for 72 hours.
- 7.3.5.4 Once the bat ecologist is satisfied that the roosts are empty, the roost access points will then be blocked immediately. Gaps and cracks with potential to be used as roosts will also be checked with an endoscope and blocked during exclusion.
- 7.3.5.5 If necessary, the common pipistrelle bats will be excluded by blocking the access to outbuilding B through the east gable doorway. A timber framed, plywood board will be constructed and fitted to the door to ensure there are no gaps. Other openings that have potential points of access into the outbuilding will also be sealed during the exclusion process. The east door will be opened 30 minutes prior to sunset until the bats have left the interior of the outbuilding. At the end of this period an emergence survey (under suitable weather conditions ( $>8^{\circ}\text{C}$ )) will be undertaken to assess whether the bats have vacated the outbuilding. Anabat will be left in the barn to monitor activity and help confirm exclusion.

- 7.3.5.6 After successful exclusion, the following will take place:
- Doorways will remain blocked from 30 minutes before sunset until sunrise whilst the work is in progress, or until the outbuilding no longer provides potential roosting habitat. This will be determined by the bat ecologist.
  - All exclusion devices will be removed, and roosts blocked using expanding foam or a similar substance.

### **7.3.6 Destructive Search**

7.3.6.1 In order to further reduce any unnecessary disturbance, injury, or death of any late discoveries of individual bats roosting in outbuilding B, all external fittings and fixtures with bat roosting potential (roof coverings, roof timbers, masonry, doors/window frames, timbers with bat roosting potential etc.) will be carefully removed, by hand under the watching brief of a bat ecologist.

7.3.6.2 All roof coverings with bat roosting potential will be removed by hand. During the spring, summer and autumn period, only half of the roof should be removed on the first day and the second half 24 hours later. This will create unfavourable conditions for any bats still roosting within the roof structure and encourage the bats to leave on their own accord.

### **7.3.7 Late discoveries**

- 7.3.7.1 In the event that bats are discovered, the following will be implemented:
- Immediately stop the work that you are undertaking.
  - Do not expose the bat or cause it to fly out of the roost on its own accord.
  - Contact Wold Ecology on 01377 200242 or 07795 071504 for advice.
  - Advise colleagues in the vicinity of your work why you have stopped and advise them to be aware of the potential for bats being disturbed, injured or killed.
  - Immediately report the matter to your site manager/line manager who will inform relevant personnel.
  - Grounded bats must be carefully placed in a lidded, ventilated box with a piece of clean cloth and a small shallow container with some water. The box must be kept in a safe and quiet location.
  - Any underweight or injured bats must be taken into temporary care by an experienced bat carer and looked after until such time that the bat can be transferred to a suitable replacement roost at the same site, or weather conditions are suitable for release at the same site.
- 7.3.7.2 Bats should only be handled by a licensed bat ecologist, wearing gloves, who has received a rabies vaccination. The bat will be placed either into a holding box, with water provided and re-released close to the site at dusk or placed into a bat box located on site.
- 7.3.7.3 Injured bats will be taken into care (as directed by the Bat Workers Manual, section 7.3, pages 64 – 66: 3<sup>rd</sup> edition 2004) and fed and cared for until such time when conditions are suitable (night time temperature are  $>6^{\circ}\text{C}$ ) for them to be released at dusk on site. Bats will only be handled by an ecologist, licensed to handle bats.
- 7.3.7.4 If building and re-roofing work is taking place during winter, there remains the low possibility of encountering hibernating bats. The capture of bats is not planned as

a method of exclusion during winter months and will only be required as an absolute last option i.e. if the bat is at risk of injury and death.

7.3.7.5 In the unlikely event that hibernating bats are discovered, a minimum buffer area of 3m<sup>2</sup> will be created around the roost. If applicable, all work lighting will face away from the roost to ensure that light contamination and heat do not disturb the bat. The bat will be left undisturbed in situ until night time temperatures are >6°C consistently for approximately four nights and the bat can either move by its own accord or can be excluded from the roost.

7.3.7.6 If any torpid bats are disturbed and aroused, they will be placed in a Schwegler 1FW hibernation box on site. The 1FW bat box will be located within 50m of the roost and at an accessible height (<5m above ground level) for the bat ecologist to access easily.

7.3.7.7 If the night time temperature is above 6°C and the bat is active, it will be first placed in a holding bag and transferred to a Schwegler bat box that will be located within 50m of the bat roosts and at an accessible height (<5m above ground level) for the bat ecologist to access easily.

## **7.4 Mitigation**

7.4.1 This mitigation strategy is based on survey data currently held. The mitigation strategy will ensure that the bat populations on site are maintained at a favourable conservation status by the retention of the original roost sites where possible. In addition, new roosting opportunities will be created through the provision of bat boxes and roosting opportunities. There should be a net gain in roosting opportunities post development.

7.4.2 Timber treatment should be carried out using Permethryn type chemicals on the Natural England list of approved safe chemicals. New pre-treated timbers i.e. tanalised timber will be allowed to dry thoroughly before use, if applicable. New timbers used at specific roost sites in ridge area will be thoroughly brushed with a stiff yard brush to remove any crystalline residues before use. A list of Natural England approved paints and timber treatments are available at <https://www.gov.uk/guidance/bat-roosts-use-of-chemical-pest-control-products-and-timber-treatments-in-or-near-them>

## **7.5 In situ retention of bat roosts**

7.5.1 There will be no in situ retention of bat roosts.

## **7.6 Modification of existing roosts**

7.6.1 There will be no modification of existing bat roosts.

## **7.7 New Roost Creation**

7.7.1 It is usually recommended that the original roost site is re-created and in addition, new roosting opportunities will be created. However, the design of the building and building control restrictions, re-creation of the original roost sites is not possible for this site.

## 7.8 Bat boxes

7.8.1 Wold Ecology recommends that two Schwegler 1FQ bat boxes are sited on the south elevation and west gable of outbuilding B; close to existing roost sites. Schwegler Bat Boxes are recommended and well tested boxes. The boxes should be located close to the roof line or ridge apex.

7.8.2 The 1FQ is an attractive box designed specifically to be fitted on the external wall of a house, barn or other building. Equally appealing to bats as a roost or a nursery, it features a special porous coating to help maintain the ideal temperature inside along with a rough sawn front panel to enable the bats to land securely.

7.8.3 The majority of Schwegler bat boxes are self-cleaning as they are designed so that the droppings fall out of the entrance. This reduces the possibility of smell during the summer months. For more information on designs and installation of bat boxes see: [www.schwegler-natur.de](http://www.schwegler-natur.de) and [www.bct.org.uk](http://www.bct.org.uk).

## 7.9 Lighting

7.9.1 Lighting has a detrimental effect on bat activity; many bats will actually avoid areas that are well lit. Lighting can cause habitat fragmentation by preventing bats from commuting between roosts and foraging grounds (A.J Mitchell-Jones 2004).

7.9.2 The impact on bats can be minimised by the use of low pressure sodium lamps or high-pressure sodium instead of mercury or metal halide lamps where glass glazing is preferred due to its UV filtration characteristics. Lighting to be used should not emit Ultra Violet radiation so that they don't attract insects and consequently, they will have a minimal effect on bats.

7.9.3 Luminaire and light spill accessories - Lighting should be directed to where it is needed, and light spillage avoided. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only.

7.9.4 If applicable, the height of lighting columns in general should be as short as is possible as light at a low level reduces the ecological impact. However, there are cases where a taller column will enable light to be directed downwards at a more acute angle and thereby reduce horizontal spill. For pedestrian lighting, this can take the form of low level lighting that is as directional as possible and below 3 lux at ground level. Aim for lighting column of 5m or less, hooded and cowed to prevent light spill, for main lighting columns

7.9.5 Security lighting power, it is rarely necessary to use a lamp of greater than 2000 lumens (150 W) in security lights. The use of a higher power is not as effective for the intended function and will be more disturbing for bats. Many security lights are fitted with movement sensors which, if well installed and aimed, will reduce the amount of time a light is on each night. This is more easily achieved in a system where the light unit and the movement sensor are able to be separately aimed. If the light is fitted with a timer this should be adjusted to the minimum to reduce the amount of 'lit time'. The light should be aimed to illuminate only the immediate area required by using as sharp a downward angle as possible. This lit area must avoid being directed at, or close to, any bats' roost access points or flight paths from the roost. A shield or hood can be used to control or restrict the area to be lit. Avoid

illuminating at a wider angle as this will be more disturbing to foraging and commuting bats as well as people and other wildlife.

- 7.9.6 At this site, lights will **not** be mounted where they will shine directly on to bat boxes or the surrounding woodland/hedgerow habitat used by foraging and commuting bats.

## **7.10 Habitat enhancements**

- 7.10.1 Freshwater, woodland, grassland, urban gardens, trees and amenity green space are suitable foraging habitats for bats whilst linear habitats such as hedgerows and streams are particularly important commuting routes between roosts and foraging ground.

- 7.10.2 It is recommended that the natural landscape remains largely unchanged. Landscaped areas can provide good foraging grounds for bats and the retention of adjacent trees is recommended. Ornamental, semi natural and managed habitats can be improved by growing night-scented flowers and other flowers favoured by insects. Suitable species include:

- Foxglove *Digitalis purpurea*
- Cowslip *Primula veris*
- Red campion *Silene dioica*
- Marjoram *Origanum vulgare*
- Ox-eye daisy *Leucanthemum vulgare*
- Red clover *Trifolium pratense*
- Evening primrose *Oenothera biennis*.
- Honeysuckle *Lonicera perichlymenum*.
- Wild Clematis *Clematis virginiana*

- 7.10.3 More information on suitable planting to encourage bats obtained from The Bat Conservation Trust ([www.bats.org](http://www.bats.org)).

## 7.11 Method Statement – Outbuilding A

7.11.1 **This statement should be copied to contractors and all those involved with timber treatment, roofing and building works, whose work may affect bats and their roosts on site. Even though bats have not been found, conversion works to outbuilding A should occur as though bats could be present.**

### 7.11.2 Timing

7.11.2.1 There are no mandatory timing constraints when roosting bats have not been found.

### 7.11.3 Locating Bats

7.11.3.1 Bats are by nature highly secretive, mobile mammals; therefore, bats and their roosts can be very difficult to detect. A pipistrelle bat is capable of roosting in a crack measuring 20mm. In order to reduce any unnecessary disturbance, injury or death of any late discoveries of individual bats roosting in the buildings the following procedures should be implemented. Common roosts locations must be checked. These include:

- Underneath tiles
- Underneath ridge tiles
- Crevices in brick work and gaps in mortar
- Mortise joints in roof timbers
- Above the eaves and internal wall plates
- Around window/door frames
- Behind ivy growing on buildings
- Roof timbers including ridge beams and rafters

### 7.11.4 Working Approach

7.11.4.1 Careful removal by hand of all fittings and fixtures as describe in 7.11.3.1. Wall cavities should be checked prior to demolition (if applicable) and pointing.

7.11.4.2 Remove roof coverings by hand. Only half of the roof should be removed on the first day and the second half 24 hours later. This will create unfavourable conditions for any bats still roosting within the roof structure and encourage the bats to leave on their own accord.

7.11.4.3 It is good practice, where bats may come into contact with roof timbers, to carry out timber treatment using Permethryn type chemicals on the Natural England list of approved safe chemicals. New pre-treated timbers i.e. tanalised timber will be allowed to dry thoroughly before use, if applicable. A list of Natural England approved paints and timber treatments is available at <https://www.gov.uk/guidance/bat-roosts-use-of-chemical-pest-control-products-and-timber-treatments-in-or-near-them>

7.11.4.4 In the unlikely event that bats are discovered in any buildings, you must:

- Immediately stop the work that you are undertaking.
- Contact Wold Ecology on 01377 200242/07795 071504 for advice.



- Advise colleagues in the vicinity of your work why you have stopped and advise them to be aware of the potential for bats being disturbed, injured or killed.
- Immediately report the matter to your site manager/line manager who will inform relevant people.
- Grounded bats should be covered with a box (not airtight) and all works within 5m should cease until a bat ecologist arrives to move the bat.

7.11.4.5 Bats will only be handled by a licensed bat ecologist, wearing gloves, who has received a rabies vaccination. The bat will be placed either into a holding box, with water provided, and re-released close to the farm at dusk, or placed into a bat box located on site.

7.11.4.6 Injured bats will be taken into care (as directed by the Bat Workers Manual, section 7.3, pages 64 – 66: 3<sup>rd</sup> edition 2004) and fed and cared for until such time when conditions are suitable (night time temperature are  $>6^{\circ}\text{C}$ ) for them to be released at dusk in the mitigation area.

- Bat Conservation Trust. 'Bats in Churches' leaflet.
- Bat Conservation Trust. 'Bat Surveys for Professional Ecologists, 3<sup>rd</sup> Edition (2016).
- Bat Conservation Trust. 'Biodiversity for Low and Zero Carbon Buildings: A Technical Guide to New Build'. Dr Carol Williams, 2010.
- Mitchell-Jones A.J. (2004). 'Bat Mitigation Guidelines'. English Nature, Peterborough.
- English Nature (2003). 'Focus on Bats'.
- English Nature (1993) 'Bats in Roofs; A Guide for Surveyors'.
- English Nature Northumbria Team (2004) 'Bat surveys for development proposals in North-East England'. English Nature.
- Habitat Management for Bats. (2001). A guide for land managers, land owners and their advisors. JNCC.
- Horacek, I. Notes on the ecology of bats of the genus *Plecotus*. Vestník Československé Společnosti Zoologické.
- Mitchell-Jones, A.J. & McLeish, A.P. (1999) 'The bat workers' manual' 2<sup>nd</sup> edition. Joint Nature Conservation Committee.
- Mitchell-Jones, A.J. (2004) 'Bat mitigation guidelines'. English Nature, Peterborough.
- The Bat Conservation Trust [www.bats.org.uk](http://www.bats.org.uk) Much additional information is available on bats at this website.
- Thomas, D.W. 1995. The physiological ecology of hibernation in vespertilionid bats. Symposia of the Zoological Society of London 67: 233–244.
- Town and Country Planning Association 'Biodiversity Positive: Eco-towns biodiversity positive'. 2011. <http://www.tcpa.org.uk/pages/biodiversity.html>
- UK Mammals: Species Status and Population Trends. JNCC / Tracking Mammals Partnership. 2005
- [www.bats.org.uk](http://www.bats.org.uk)
- <https://www.gov.uk/government/collections/bat-licences>

## 9.0 APPENDICES

### 9.1 Background to Bats - Bat Biology.

- 9.1.1 Bats roost in a variety of places such as caves, mines, trees, and buildings. Woodlands, pasture, ponds and slow flowing rivers or canals provide suitable feeding areas for bats as they support an abundance of suitable insect forage. Bats tend to feed during the first two to three hours after sunset and again before dawn, when insect activity is at its most intense (JNCC 2004).
- 9.1.2 Bat activity over the course of a year reflects the seasonal climate and the availability of food as follows (The Bat Conservation Trust, undated):  
**January - March** - insect prey is scarce, and bats will hibernate alone or in small groups.  
**April - May** - insects are more plentiful and bats will become active. They may become torpid (cool and inactive) in bad weather. Females will start to form groups and will roost in several sites.  
**June - July** - females gather in maternity roosts and give birth to young, which are suckled for several weeks. Males roost alone nearby.  
**August - September** – mothers leave the roost before the young. Bats mate and build up fat for the winter.  
**October - December** – Bats search for potential hibernacula. They become torpid for longer periods and then hibernate.
- 9.1.3 Bats do not stay in the same roost throughout the year. They have different requirements of roosts at different times of the year. During late April/May the bats leave their winter roosts and the females come together to form ‘nursery roosts’, these usually consist of pregnant females along with a few non-breeding and immature females. At this time the males roost either singly or in small numbers. The single offspring is born during late June early July and can fly within 3-5 weeks.
- 9.1.4 Typical roost sites are cracks and crevices in buildings and other structures but more typically under hanging tiles, slates, soffits and cavity walls of fairly modern buildings or holes and splits in trees.
- 9.1.5 The conditions needed by bats for hibernation require the maintenance of a relatively stable low temperature (2 – 6<sup>o</sup>). Suitable sites include; old trees, caves, cellars, tunnels, and icehouses.
- 9.1.6 Whilst the summer roosts consist of single species (although 2 – 3 species can be found within one large structure but occupying separate roost sites), winter sites often consist of 4 – 6 different species of bat, although there is often niche separation.
- 9.1.7 Bats have a complex social structure based on ‘meta populations’ and also utilise other transitional or intermediate roost sites. The several different types of roost, which bats occupy throughout the year, are as follows:
- **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 by day.
- **Transitional/occasional roost:** used by a few individuals or occasionally small groups for generally short periods of time on 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 sites:** sites where mating takes place from later 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. These have to be cold and free from any temperature fluctuation with high humidity. The coldness enables bats to lower their body temperature and become torpid. This saves a lot of energy, enabling them to survive on the fat stores within their bodies that they have built up throughout the summer.
- **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.

9.1.8 The main threats to bats include:

- Habitat loss (e.g. deforestation)
- Loss of feeding areas as a result of modern forestry and farming practices.
- Use of toxic agrochemicals and remedial timber treatment chemicals.
- Disturbance and damage to bat roosts.

9.1.9 Bats have been in decline both nationally and internationally during the latter part of the 20<sup>th</sup> Century. Bats require a variety of specific habitats in order to meet the basic needs of feeding, breeding, and hibernating and are therefore extremely vulnerable to change such as the loss of flight lines through the removal of hedgerows. It is thought that even the two most common and widespread bats, the common pipistrelle and the soprano pipistrelle, have declined by an estimated 70% (1978-1993 figures). There are a number of bat species, which are now considered seriously threatened with one species, the greater mouse-eared bat being classed as extinct as it is no longer breeding in the U.K.

9.1.10All European bats are listed in Annex IV of the EC Directive 92/94/EEC ‘The Conservation of Natural Habitats and of Wild Fauna and Flora’ as needing “strict protection”. This is translated into British Law under the Habitats and Species Regulations 2017. British bats are included under Schedule 5 of the Wildlife & Countryside Act 1981. They can therefore be described as a ‘fully protected’ or ‘protected’ species.

9.1.11 A summary of the legal protection afforded to bats under both European and British law is provided by the Bat Conservation Trust (BCT, 2010): ‘All European bat species and their roosts are listed in Annex IV of the EC Directive 92/94/EEC ‘The Conservation of Natural Habitats and of Wild Fauna and Flora’ as needing “strict protection”. This is implemented in Britain under the Conservation of Habitats and Species Regulations 2017 which has updated the Conservation (Natural Habitats &c.) Regulations (as amended). In summary, in the UK, it is an offence to:

- Deliberately capture, injure, or kill a bat;
  - Deliberately disturb a bat in a way that would affect its ability to survive, breed or rear young, hibernate or migrate or significantly affect the local distribution or abundance of the species;
  - Damage or destroy a roost (this is an absolute offence); and
  - Possess, control, transport, sell, exchange or offer for sale/exchange any live or dead bat or any part of a bat.’
- 9.1.12 The species is also listed in Appendix II of the Bonn Convention (and its Agreement on the Conservation of Bats in Europe) and Appendix II of the Bern Convention (and Recommendation 36 on the Conservation of Underground Habitats). Although these are recommendations and not statutory instruments.
- 9.1.13 Natural England is the Government body responsible for nature conservation. Local planning authorities must consult them before granting planning permission for any work that would be likely to result in harm to the species or its habitat. Natural England issue “survey” licenses for survey work that requires the disturbance or capture of a species for scientific purposes. They also issue “conservation” licenses that are required for actions that are intended to improve the natural habitat of a European protected species or to halt the natural degradation of its habitat.
- 9.1.14 ‘Development’ licences are issued by Natural England for any actions that may compromise the protection of a European protected species, including bats, under the Conservation of Habitats and Species Regulations 2017. This includes all developments and engineering schemes, regardless of whether or not they require planning permission.
- 9.1.15 The UK Biodiversity Action Plan states that although the pipistrelle is one of the most abundant and widespread bat species in the UK, it is still thought to have undergone a significant decline in the latter part of this century. The main factors cited for causing loss and decline include:
- A reduction in insect prey abundance, due to high intensity farming practice and inappropriate riparian management.
  - Loss of insect-rich feeding habitats and flyways, due to loss of wetlands, hedgerows, and other suitable prey habitats.
  - Loss of winter roosting sites in buildings and old trees.
  - Disturbance and destruction of roosts, including the loss of maternity roosts due to the use of toxic timber treatment chemicals.
- 9.2 Significance of bat roosts, appraising the nature conservation value;**
- 9.2.1 The significance of bat roosts should be appraised against the following table. Where the extent of the bat roost is unclear a precautionary approach should be taken in evaluating the significance of the roost and the highest potential category should be selected.

Table 9.2.1 Appraisal of significance of bat roosts.

Scale	Summary	Examples
International	Any significant roosting sites for European Annex 2 species	Barbastelle bat roosts are only known applicable feature in East Anglia.
National	Any roosts qualifying as SSSI under the EN criteria.	Details of criteria are given in 9.1.2 Site Selection Guidelines for Biological SSSI's.
Regional	Any significant bat roosts and features, equivalent in interest to qualifying a site as a Country Wildlife Site.	Breeding and hibernation roosts of most species.
Local	All other sites supporting feeding bats as Wildlife and Countryside Act protected species.	Bats foraging within a structure, night roosts and minor transition roosts.

9.3 Summary of conservation significance of roost types (Bat Mitigation Guidelines, 2004).

Roost type	Development effect	Scale of impact		
		Low	Medium	High
Maternity	Destruction			✓
	Isolation caused by fragmentation			✓
	Partial destruction; modification		✓	
	Temporary disturbance outside breeding season	✓		
	Post-development interference			✓
Major hibernation	Destruction			✓
	Isolation caused by fragmentation			✓
	Partial destruction; modification		✓	
	Temporary disturbance outside hibernation season	✓		
	Post-development interference			✓
Minor hibernation	Destruction			✓
	Isolation caused by fragmentation			✓
	Partial destruction, modification		✓	
	Modified management		✓	
	Temporary disturbance outside hibernation season	✓		
	Post-development interference		✓	
	Temporary destruction, then reinstatement	✓		
Mating	Destruction		✓	
	Isolation caused by fragmentation		✓	
	Partial destruction	✓		
	Modified management	✓		
	Temporary disturbance	✓		
	Post-development interference	✓		
	Temporary destruction, then reinstatement	✓		
Night roost	Destruction	✓		
	Isolation caused by fragmentation	✓		
	Partial destruction	✓		
	Modified management	✓		
	Temporary disturbance	✓		
	Post-development interference	✓		
	Temporary destruction, then reinstatement	✓		

**NB** This is a general guide only and does not take into account species differences. Medium impacts, in particular, depend on the care with which any mitigation is designed and implemented and could range between high and low.

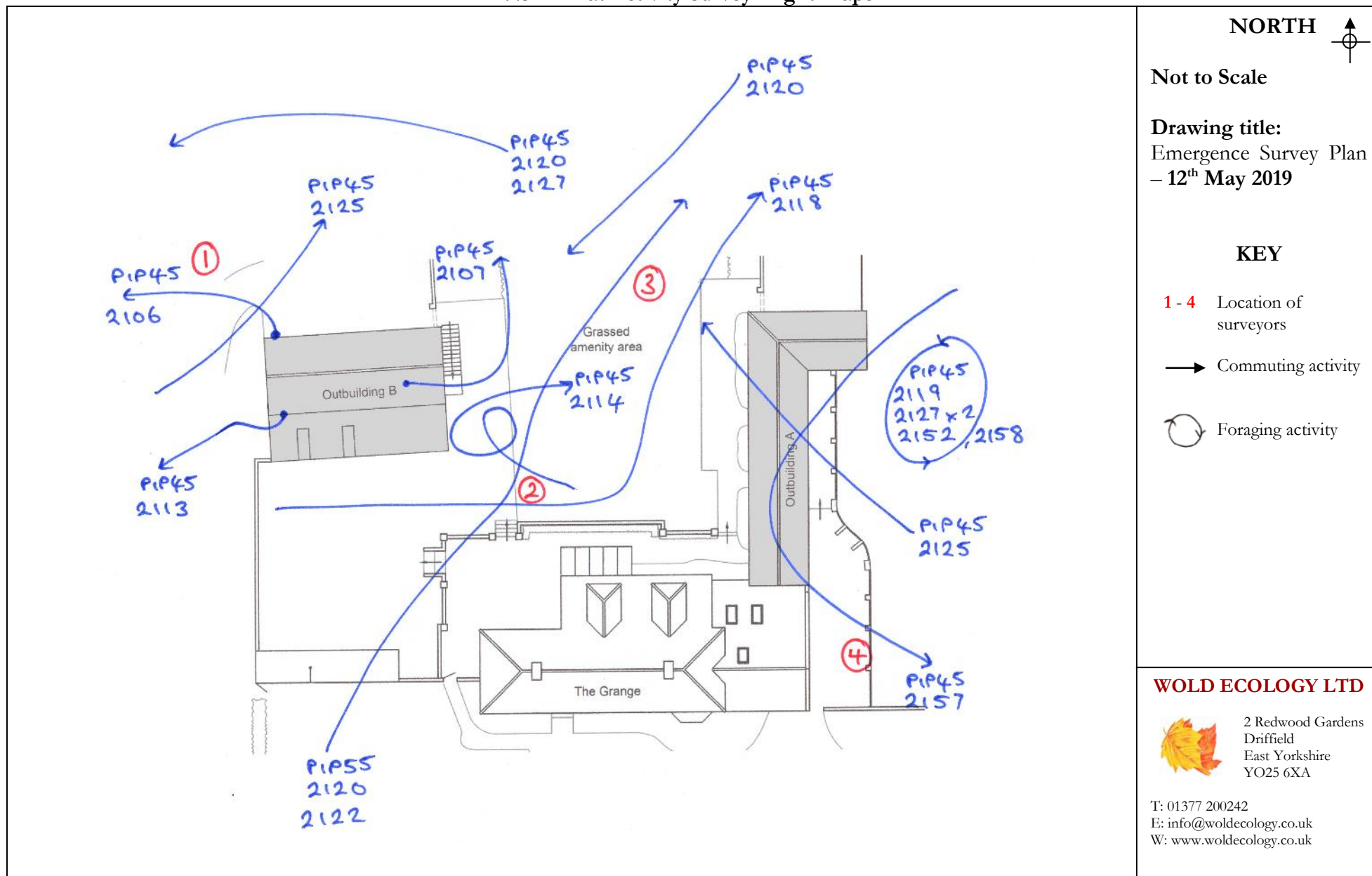
#### 9.4 Bat records for activity surveys conducted in 2019

Date – 12 <sup>th</sup> May 2019					
Loc.	Time	Species	kHz	Direction	Comment
1	2106	C. Pipistrelle	45	W	Emerged from a gap in the brickwork on the north elevation of outbuilding B - <b>Roost 2</b>
2	2107	C. Pipistrelle	45	N	Emerged from inside outbuilding B via a door on the east gable - <b>Roost 3</b>
1	2113	C. Pipistrelle	45	E	Emerged from a gap above the eaves of the south elevation of outbuilding B - <b>Roost 1</b>
2 & 3	2114	C. Pipistrelle	45	N	Commuting
4	2119	C. Pipistrelle	45		Foraging
1	2120	C. Pipistrelle	45	S	Commuting
2	2120	S. Pipistrelle	55	N	Commuting
2	2122	C. Pipistrelle	55	N	Commuting
4, 2 & 3	2125	C. Pipistrelle	45	NW	Commuting
1	2125	C. Pipistrelle	45	E	Commuting
1	2127	C. Pipistrelle	45	S	Commuting
4	2127	C. Pipistrelle	45		Foraging
1	2131	C. Pipistrelle	45	E	Commuting
1	2139	Noctule	20		Audible
1	2152	Brown long-eared	39		Audible
1	2152	C. Pipistrelle	45		Audible
4	2152	C. Pipistrelle	45		Foraging
4	2158	C. Pipistrelle	45		Foraging
3	2158	Natterers	49		Audible
3	2206	S. Pipistrelle	55		Audible
1	2222	Brown long-eared	39		Audible
1	2223	C. Pipistrelle	45		Audible
1	2226	C. Pipistrelle	45		Audible
1	2229	C. Pipistrelle	45		Audible
1	2241	C. Pipistrelle	45		Audible
Date – 8 <sup>th</sup> June 2019					
3	0306	C. Pipistrelle	45		Audible
2 & 1	0315	C. Pipistrelle	45		Audible
1	0325	C. Pipistrelle	45		Audible
2	0327	Brown long-eared	39		Audible
3	0339	C. Pipistrelle	45	E	Commuting

1	0342	C. Pipistrelle	45		Audible
3	0345	C. Pipistrelle	45		Audible
1	0350	C. Pipistrelle	45		Audible
1	0355	C. Pipistrelle	45		Returned to a gap above the eaves on the south elevation of outbuilding B - <b>Roost 1</b>
3	0359	C. Pipistrelle	45		Audible
<b>Date – 29<sup>th</sup> August 2019</b>					
1	2027	C. Pipistrelle	45	W	Commuting
1	2036	C. Pipistrelle	45	S	Commuting
2	2038	C. Pipistrelle	45	W	Commuting
1	2051	C. Pipistrelle	45	W	Commuting
1	2101	C. Pipistrelle	45	W	Commuting
2	2103	C. Pipistrelle	45	W	Commuting
1	2105	C. Pipistrelle	45	E	Commuting
2	2112	C. Pipistrelle	45	E	Commuting
1	2117	C. Pipistrelle	45	E	Commuting
2	2126	C. Pipistrelle	45	E	Commuting
1	2140	C. Pipistrelle	45	S	Commuting
2	2142	Noctule	20	S	Commuting
1	2145	C. Pipistrelle	45	E	Commuting
2	2150	Brown long-eared	39	W	Commuting



## 9.5 Bat Activity Survey Flight Maps



NORTH

Not to Scale

**Drawing title:**  
Emergence Survey Plan  
– 12<sup>th</sup> May 2019

### KEY

- 1 - 4 Location of surveyors
- Commuting activity
- ⊙ Foraging activity

**WOLD ECOLOGY LTD**



2 Redwood Gardens  
Driffield  
East Yorkshire  
YO25 6XA

T: 01377 200242  
E: info@woldecology.co.uk  
W: www.woldecology.co.uk

