



WOLD ECOLOGY LTD

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

Prospect House Farm, Suffield

Preliminary Bat Roost Assessment, 2023.

	Staff Member	Position
Lead surveyor(s) :	Abi Catherall M Sc.	Ecologist.
Report prepared by :	Abi Catherall M Sc.	Ecologist.
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 © 2023 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 and payment in full has been received by Wold Ecology Ltd.

Any unauthorised redistribution or reproduction of part or all the contents of this report will constitute an infringement of copyright.

This report was prepared by Wold Ecology Limited solely for use by Joe Marshall. This report is not addressed to and may not be relied upon by any person or entity other than Joe Marshall for any purpose without the prior written permission of Wold Ecology Ltd. Wold Ecology Ltd, its directors, employees and associates accept no responsibility or liability for reliance upon or use of this report (whether or not permitted) other than by Joe Marshall for the purposes for which it was originally commissioned and prepared.

In producing this report, Wold Ecology Ltd has relied upon information provided by others. The completeness or accuracy of this information is not guaranteed by Wold Ecology Ltd.

DOCUMENT CHECKING

Issue No.	Date.	Status.	Verified by.
1	11/05/2023	Draft for internal review.	Abi Catherall M Sc.
2	12/05/2023	Submission of non-draft version for client.	Chris Toohie MSc MCIEEM

This report contains sensitive information concerning protected species and caution should be exercised when copying and distributing to third parties.

TABLE OF CONTENTS

1.0	EXECUTIVE SUMMARY	3
2.0	INTRODUCTION	5
3.0	BACKGROUND TO SPECIES	7
4.0	ASSESSMENT METHODOLOGY	10
5.0	RESULTS	12
6.0	IMPACT ASSESSMENT – in the absence of mitigation	27
7.0	MITIGATION & COMPENSATION	28
8.0	BIRDS	29
9.0	REFERENCES	31
10.0	APPENDICES	32

1.0 EXECUTIVE SUMMARY

1.1 In May 2023, Wold Ecology Ltd was commissioned by Joe Marshall to undertake a preliminary bat roost assessment at Prospect House Farm, Suffield. The site is located at approximate National Grid Reference SE 99206 90889, in North Yorkshire.

1.2 The preliminary bat roost assessment results are summarised below:

		Application Site Status
Bat Activity Surveys Required - Unit 1 Unit 2 Unit 3	Bats	<p>Bat droppings were discovered in unit 3 and unit 2 during the survey and consequently, there is a risk of bats being present in these buildings and unit 1 at other times of year, especially during the spring to autumn months. Further emergence bat activity surveys should be undertaken between May – late August. This is to ensure bats are not roosting in the buildings prior to demolition and conversion works.</p> <p>These further bat activity surveys have been commissioned for summer 2023.</p>
Proceed with caution, timing constraints	Birds	<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.</p> <p>Bird's nests were observed in the buildings (refer to section 8.0).</p>
No constraints	Barn owl	<p>There was no evidence of barn owls <i>Tyto alba</i> roosting in the buildings. No further surveys recommended.</p>

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

1.4 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 (Amendment) (EU Exit) Regulations 2019. 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.

1.5 Planning consent for a development does not provide a defence against prosecution under this act.

1.6 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.

1.7 This report is valid until **May 2024**. After this time, additional bat activity surveys need to be undertaken to establish the roost type, species, and number of bats roosting in the building.

1.8 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
10/05/23	-	-	Prospect House Farm – Unit 3	N. Yorkshire	SE 99206 90889	Droppings	2
10/05/23	-	-	Prospect House Farm – Unit 2	N. Yorkshire	SE 99206 90889	Droppings	1

2.0 INTRODUCTION

2.1 Background Information

2.1.1 In May 2023, Wold Ecology Ltd was commissioned by Joe Marshall to undertake a preliminary bat roost assessment at Prospect House Farm, Suffield. The site is located at approximate National Grid Reference SE 99206 90889, in North Yorkshire.

2.1.2 The Application Site comprises the following:

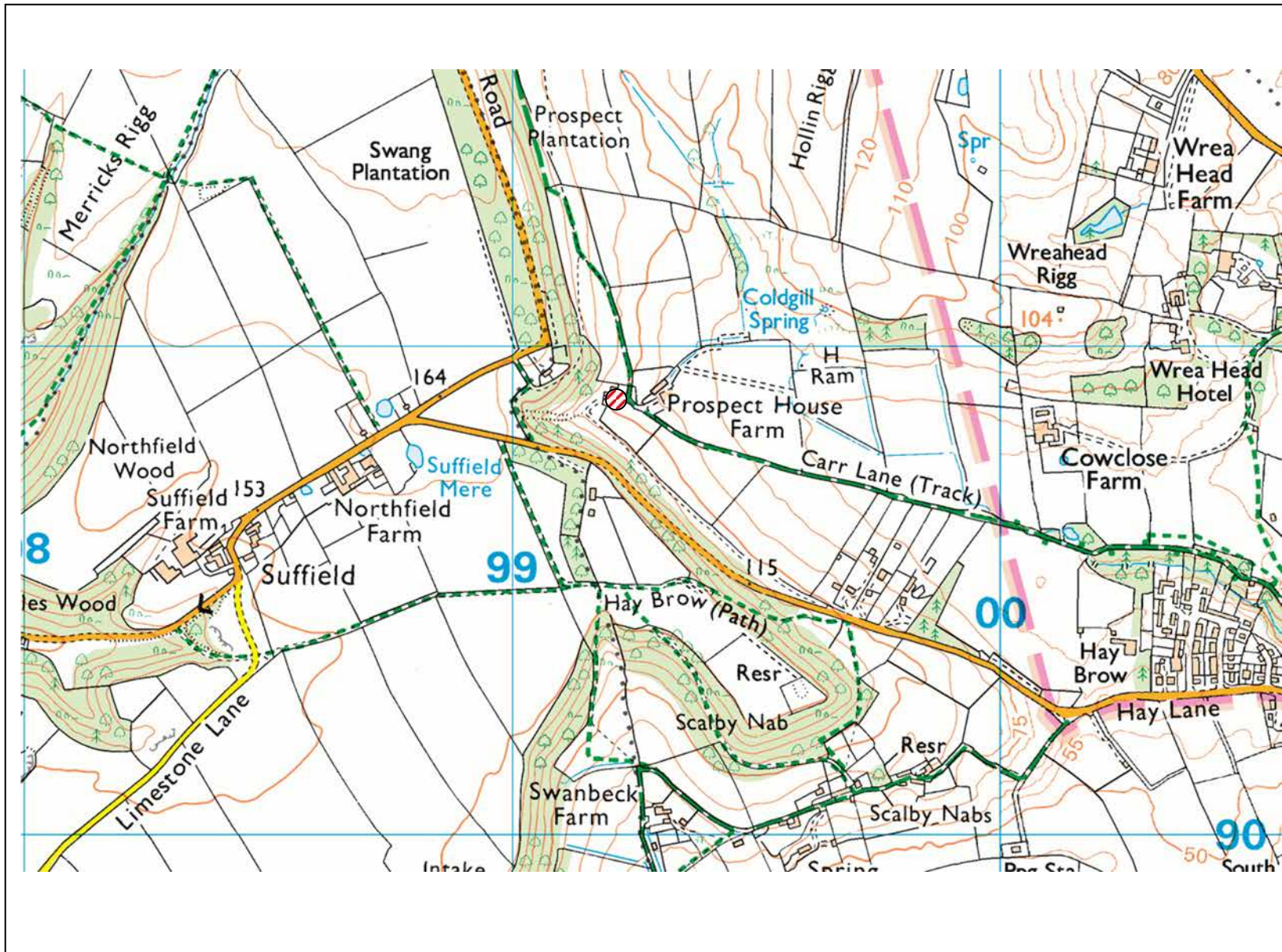
- Units 1 - 3

2.1.3 The proposed development includes the partial demolition and conversion into holiday lets.

2.2 Survey Objectives

2.2.1 The site was visited and assessed on 10th May 2023; 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
Determine presence/absence of roosting bats	Yes	A daytime, visual inspection for bat roosts and roosting bats. An assessment of the on-site suitability for bats and the likelihood of their presence. Desktop study.
Determine bat usage e.g.s maternity roost, summer roosts	Yes	An assessment of whether bats are a constraint to the development. A bat activity survey has not been undertaken.
Identify swarming, commuting, or mating sites	No	N/A
Other	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.
Birds	Yes	The visual inspection also recorded any other visible active/disused nests and bird activity within the buildings.



NORTH 

Scale: 1:25,000

Drawing title:
Location Map

KEY

 Application Site

WOLD ECOLOGY LTD



2 Redwood Gardens
Driffield
East Yorkshire
YO25 6XA

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

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 20th 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 (Amendment) (EU Exit) Regulations 2019, 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.
- c) Protect and enhance valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan).
- d) recognise the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland.
- e) Minimise impacts on and provide net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.
- f) Prevent new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans.

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.
- 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.freeseve.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*, Brandt's *Myotis brandtii*, 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 1500 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).

4.2.4 Wold Ecology bat activity surveys within 5km of the Application Site have recorded the following roosts:

Date	Taxon Name	Common Name	Location	County	Grid reference	Record Type	Abundance
March 2020	Pipistrellus pipistrellus	Common Pipistrelle	Highdales Farm, Hackness	N. Yorkshire	SE 94971 93028	Hibernation	2
24/08/20	Myotis mystacinus	Whiskered bat	Beacon Farm, Scalby	N. Yorkshire	SE 99093 92504	Day	1
22/09/20	Pipistrellus pygmaeus	Soprano pipistrelle	Beacon Farm, Scalby	N. Yorkshire	SE 99093 92504	Day	9
22/09/20	Plecotus auritus	Brown long-eared bat	Beacon Farm, Scalby	N. Yorkshire	SE 99093 92504	Day	1
17/11/20	Pipistrellus pipistrellus	Common Pipistrelle	Beacon Farm, Scalby	N. Yorkshire	SE 99093 92504	Transitional	1
May 2019	Pipistrellus pipistrellus	Common pipistrelle	White Lodge Farm, Langdale End	N. Yorkshire	SE 93701 91336	Day x 2	2
September 2019	Pipistrellus pipistrellus	Common pipistrelle	White Lodge Farm, Langdale End	N. Yorkshire	SE 93701 91336	Day	3
04/06/19	Pipistrellus pipistrellus	Common Pipistrelle	Beacon Farm, Scalby	N. Yorkshire	SE 99093 92504	Day	13
June/July 2019	Pipistrellus pipistrellus	Common Pipistrelle	Highdales Farm, Hackness	N. Yorkshire	SE 94971 93028	Day x 9	48
June/July 2019	Pipistrellus pipistrellus	Common Pipistrelle	Highdales Farm, Hackness	N. Yorkshire	SE 94971 93028	Maternity	47
June/July 2019	Plecotus auritus	Brown long-eared	Highdales Farm, Hackness	N. Yorkshire	SE 94971 93028	Maternity	19
June/July 2019	Plecotus auritus	Brown long-eared	Highdales Farm, Hackness	N. Yorkshire	SE 94971 93028	Day	1
June/July 2019	Pipistrellus pygmaeus	Soprano pipistrelle	Highdales Farm, Hackness	N. Yorkshire	SE 94971 93028	Day x 2	4
June/July 2019	Myotis Brandt's	Brandt's	Highdales Farm, Hackness	N. Yorkshire	SE 94971 93028	Day	1
May 2018	Plecotus auritus	Brown long-eared	Thirley Coates	N. Yorkshire	SE 97596 95092	Day x 2	5
May 2018	Pipistrellus pipistrellus	Common pipistrelle	Thirley Coates	N. Yorkshire	SE 97596 95092	Day	4
June 2018	Pipistrellus pygmaeus	Soprano pipistrelle	Thirley Coates	N. Yorkshire	SE 97596 95092	Day x 3	3
June 2018	Pipistrellus pygmaeus	Soprano pipistrelle	Thirley Coates	N. Yorkshire	SE 97596 95092	Maternity	144
June 2018	Pipistrellus pygmaeus	Soprano pipistrelle	Thirley Coates	N. Yorkshire	SE 97596 95092	Satellite	36
June 2018	Plecotus auritus	Brown long-eared	Thirley Coates	N. Yorkshire	SE 97596 95092	Maternity	10
May/Aug 2018	Pipistrellus pipistrellus	Common Pipistrelle	St Marks Church, Newby	N. Yorkshire	TA 02333 89877	Day	5
May 2018	Plecotus auritus	Brown long-eared	St Marks Church, Newby	N. Yorkshire	TA 02333 89877	Day	1

June 2016	Pipistrellus pipistrellus	Common Pipistrelle	White Lodge Farm, Langdale End	N. Yorkshire	SE 93701 91336	Day	1
May 2016	Pipistrellus pipistrellus	Common Pipistrelle	Roadside Farm	N. Yorkshire	SE 98054 95368	Day	1

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.
- 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.

4.3.2 Summary of daytime inspection and visual survey

Date of each survey visit	Structure reference/location	Equipment used/available	Weather
10/05/23	Unit 1 Unit 2 Unit 3	Binoculars, 1million candle power clu-lite torch, micro Dart endoscope, Dewalt DW03050 Laser Measure. 3.9m telescopic ladders	15°C, 60% cloud. Beaufort 2, SW. No recent rain.
Comments (to include # of surveyors used for each visit): 1 surveyor undertook the visual inspection.			
Personnel: Abi Catherall (Class 1 bat license 2022-10667-CL17-BAT) – 10 th May 2023			

4.3.3 Personnel

Abi Catherall	Experienced bat surveyor, Abi has conducted over 100 bat activity surveys including bat monitoring with the North Yorkshire Bat Group.	2022-10667-CL17-BAT
---------------	--	---------------------

5.0 RESULTS

5.1 Habitat description

5.1.1 The Application Site is located 800m northeast of Suffield village, in a rural location. The Application Site is less than 0.5ha and the studied buildings are immediately surrounded by a farmyard and arable/grazed pasture. There are a number of other buildings on site that also have bat roosting potential but will remain outside of the red line boundary.

5.1.2 Adjacent Landscapes

5.1.2.1 Prospect House Farm is surrounded by woodland and mixed agricultural land dominated by arable with grazed pastures. Woodland cover within 2km is good and occurs as shelterbelts adjacent to farms and small holdings, semi natural woodland and plantations; Broxa Forest is approximately 2.7km north west of the farm. The Application Site is located within 20m of Prospect Plantation and further connectivity within 500m is provided by hedgerows that bound arable fields and woodland cover. In addition, the Sea Cut (1.3km south) and associated riparian woodlands also provide habitat connectivity to the wider countryside.

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
- Grazed pasture
- Suffield Moor
- Inn Moor
- Prospect Plantation
- Swang Plantation
- Northfield Wood
- Thirlsey Wood
- Greengate Wood
- Hilda Wood
- Bellsdale East Wood
- Crossdales Wood
- Intake Wood
- Hawthorn Wood
- Carr Wood
- Low Wood
- Washy Cote Beck
- Crossdales Beck
- North Back Drain
- Sea Cut

- Suffield Mere

5.1.4 Core sustenance zones

5.1.4.1 The following tables ascertain bat species (typical of the locality) core sustenance zone and which habitats are of primary importance for foraging to support the roost

Species	CSZ radius (km)
Brown long-eared bat <i>Plecotus auritus</i>	3
Daubenton's bat <i>Myotis daubentonii</i>	2
Natterer's bat <i>Myotis nattereri</i>	4
Whiskered/Brandt's/Alcathe bat <i>Myotis mystacinus/brandtii/alcathe</i>	1
Common pipistrelle <i>Pipistrellus pipistrellus</i>	2
Soprano pipistrelle <i>Pipistrellus pygmaeus</i>	3
Nathusius pipistrelle <i>Pipistrellus nathusii</i>	3
Noctule <i>Nyctalus noctula</i>	4
Leisler's bat <i>Nyctalus leisleri</i>	3

5.1.5 Wold Ecology concludes that habitats within 3km comprise primary and secondary bat habitats and habitat features including tree lines, hedgerows, scrub, watercourses and woodlands which are important habitat features. These primary and secondary bat habitats are located within 50m of the Application Site; these adjacent habitats are considered to have moderate suitability for commuting and foraging bats. Habitats adjacent to the farm and within 3km of the Application Site are considered to be important to the favourable population status of local bat populations.




NORTH 


Scale: 1:25,000

Drawing title:
Aerial Photograph

KEY

 Application Site

WOLD ECOLOGY LTD

 2 Redwood Gardens
Driffeld
East Yorkshire
YO25 6XA

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

5.2 Building descriptions

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

- a. **Unit 1** – is two storeys and comprises local stone walls and a pitched roof covered with corrugated cement fibre boards. The roof is supported by smooth sawn timbers and is not lined. The building is used for storage. A small lean to adjoins the building and comprises breezeblock and Yorkshire boarding walls and a pitched roof covered with corrugated cement fibre boards.
- b. **Unit 2** – is single storey and comprises local stone walls and a pitched roof covered with slates and corrugated cement fibre boards. The roof is supported by smooth sawn timbers and is not lined. The building is used for storage.
- c. **Unit 3** - is two storeys and comprises local stone walls and a pitched roof primarily covered with pan tiles with a small section of slates. The roof is supported by smooth sawn timbers and is partially underdrawn with a bitumen felt product. The building is used for storage. A lean to adjoins the building and comprises breezeblock and Yorkshire boarding walls and a pitched roof covered with corrugated cement fibre boards.

5.2.2 **Unit 1** (see 5.5 plates 1 - 4) - the following roosting opportunities were present within the fabric of the building:

- Gaps beneath the lead ridges.
- Gaps in missing mortar below gable roof sheets.
- Gaps above the eaves.
- Missing mortar in the external stone work.
- Gaps adjacent to timber doors and timber windows.
- Gaps adjacent to timber lintels.
- Gaps above the internal wall plates.
- Wide gaps above the ridge beam.
- Gaps in the internal stone work.
- Bat access into the building is provided by open doors and windows.
- No evidence of bats was observed.
- The building has been assessed as having a MODERATE SUITABILITY to support bats.

5.2.3 **Unit 2** (see 5.5 plates 5 - 8) - the following roosting opportunities were present within the fabric of the building:

- Gaps beneath the ridge tiles where mortar has been displaced.
- There are no missing ridge tiles.
- Gaps beneath slates.
- Missing/slipped slates.
- Gaps above the eaves.
- Missing mortar in the external stone work.
- Subsidence cracks.
- Gaps adjacent to timber doors and timber windows.
- Gaps adjacent to timber lintels.
- Gaps above the internal wall plates.
- Gaps above the ridge beam.
- Gaps in the internal stone work.

- Bat access into the building is provided by open doors and windows.
- The following evidence of bats was observed:
 - One bat dropping was observed on top of a storage pallet.
- The building has been assessed as having a HIGH SUITABILITY to support bats.

5.2.4 **Unit 3** (see 5.5 plates 9 - 14) - the following roosting opportunities were present within the fabric of the building:

- Gaps beneath the ridge tiles where mortar has been displaced.
- There are no missing ridge tiles.
- Loose fitting pan tiles with gaps beneath.
- Missing/slipped pan tiles.
- Gaps in missing mortar below gable tiles.
- Gaps beneath coping stones.
- Gaps above the eaves.
- Missing mortar in the external stone work.
- Subsidence cracks.
- Gaps adjacent to timber doors and timber windows.
- Gaps adjacent to timber lintels.
- Gaps above the internal wall plates.
- Gaps above the ridge beam.
- Gaps between timber slats and pan tiles above.
- Gaps between felt and pan tiles above.
- Gaps in the internal stone work.
- Gaps in the roof structure and mortice joints.
- Bat access into the building is provided by open doors and windows.
- The following evidence of bats was observed:
 - Two bat droppings were observed on top of a storage item.
- The building 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 – 3rd Edition, p35. Bat Conservation Trust, 2016), the Application Site and studied buildings have the following suitability for bats:

	Negligible	Low	Moderate	High
Application Site habitats (<2km)			X	
Unit 1			X	
Unit 2				X
Unit 3				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	<p>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^a 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^b).</p> <p>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.^c</p>	<p>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.</p> <p>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.</p>
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 ^a 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).	<p>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.</p> <p>Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.</p>
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 ^a and surrounding habitat.	<p>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.</p> <p>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.</p> <p>Site is close to and connected to known roosts.</p>

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

5.4 Results of Activity Surveys

5.4.1 There is no current (with the previous 2 years) bat activity survey data available for this site.

5.5

Photographs of key features – May 2023

Plate 1 – Unit 1, east elevation and north gable.



Plate 2 – Unit 1, northwest elevation and north gable.



Plate 3 – Unit 1, northwest and southwest elevation



Plate 4 – Unit 1, internal roof structure.



Plate 5 – Unit 2, northeast elevation.



Plate 6 – Unit 2, southwest elevation.



Plate 7 – Unit 2, internal roof structure.



Plate 8 – Unit 2, bat dropping.



Plate 9 – Unit 3, northeast elevation.



Plate 10 – Unit 3, northwest elevation and north gable.



Plate 11 – Unit 3, east and southwest elevation.



Plate 12 – Unit 3, internal roof structure.

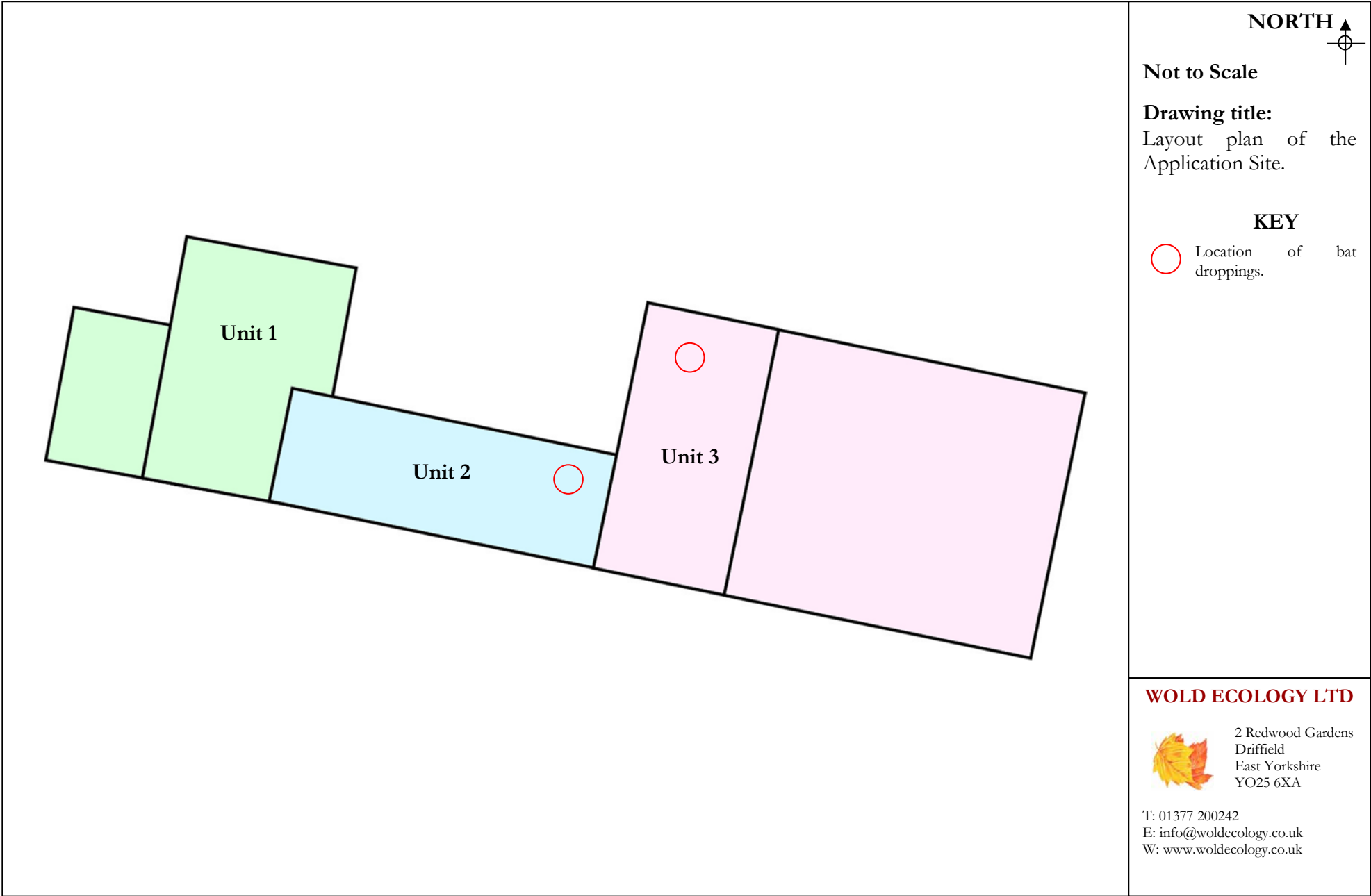


Plate 13 – Unit 3, internal roof structure.



Plate 14 – Unit 3, internal, bat droppings.





NORTH ↑


Not to Scale

Drawing title:
Layout plan of the
Application Site.

KEY

○ Location of bat
droppings.

WOLD ECOLOGY LTD

 2 Redwood Gardens
Driffeld
East Yorkshire
YO25 6XA

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

5.6 Summary of field surveys conducted in 2023

Date	Type of survey	Results				
10/05/23	Habitat assessment	Wold Ecology concludes that habitats within 3km comprise primary and secondary bat habitats and habitat features including tree lines, hedgerows, scrub, watercourses and woodlands which are important habitat features. These primary and secondary bat habitats are located within 50m of the Application Site; these adjacent habitats are considered to have moderate suitability for commuting and foraging bats. Habitats adjacent to the farm and within 3km of the Application Site are considered to be important to the favourable population status of local bat populations.				
10/05/23	Visual inspection.	<p><i>Unit 1</i></p> <p>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 roosting bats (see 5.5 plates 1 - 4).</p>				
		<p><i>Unit 2</i></p> <p>The following evidence of bats was observed:</p> <ul style="list-style-type: none"> • One bat dropping was observed on top of a storage pallet. <p>Unit 2 has been assessed as having HIGH SUITABILITY to support roosting bats, due to the presence of bat droppings and other features which have potential to provide roosting opportunities for bats (see 5.5 plates 5 - 8).</p>				
		<p><i>Unit 3</i></p> <p>The following evidence of bats was observed:</p> <ul style="list-style-type: none"> • Two bat droppings were observed on top of a storage item. <p>Unit 3 has been assessed as having HIGH SUITABILITY to support roosting bats, due to the presence of bat droppings and other features which have potential to provide roosting opportunities for bats (see 5.5 plates 9 - 14).</p>				
Date	Spp.	Roost type	Structure Reference	Roost Location	Access points (including #)	Dimension of roost or explanation where the roost is
10/05/23 (visual)	Unknown – scattered droppings	-	Unit 2	-	-	One bat dropping on top of storage pallet.
	Unknown – scattered droppings	-	Unit 3	-	-	Two bat droppings on top of storage item.

5.7 Interpretation and Evaluation of Survey Results

5.7.1 Presence/absence

5.7.1.1 The information collected to date is based on the findings of one visit to the site in May 2023. A small number of bat droppings were observed in unit 2 and unit 3 during the field survey.

5.7.1.2 From the current results, it is not possible to fully determine the species, number of bats or whether bats are currently using units 1 - 3 as a roost. The presence of bat droppings, the age and composition of the buildings suggests that there is an increased potential for bats to be present. These features include:

- Gaps and missing mortar beneath ridges
- Gaps beneath slates and missing/slipped slates
- Gaps beneath pan tiles and missing tiles
- Gaps beneath corrugated cement fibre boards.
- Missing mortar in the stone work
- Subsidence cracks
- Gaps above the eaves and internal wall plates
- Gaps adjacent to timber window/door frames
- Gaps adjacent to timber lintels
- Gaps and crevices in the roof structure
- Gaps between roof tiles/slates and felt
- Gaps between roof tiles and timber slats

5.7.1.3 In addition, the local surrounding habitat composition suggests that there is an increased potential for bats to be present at some point during spring, summer, or autumn months.

5.7.2 Site Status Assessment

5.7.2.1 The assessment is based on one daytime survey conducted in May. During this time of year, bats are active. Natural England and the Bat Conservation Trust state that the optimum bat activity survey season is early May to late August although bat activity surveys during late April, September and early October may also provide useful survey data in addition to optimum bat activity surveys. Consequently, it is not possible to fully determine the bat species, numbers of bats or whether bats are actually roosting in units 1 - 3. Due to the presence of droppings and features likely to support bats, the buildings have been assessed as having a MODERATE and HIGH SUITABILITY for roosting bats.

5.7.3 Constraints

5.7.3.1 Bat activity surveys between the months of May and August have not been undertaken. Further bat activity surveys have been commissioned for summer 2023.

5.7.3.1 A detailed internal inspection of unit 3 was not undertaken for health and safety reasons.

5.8 Further survey recommendations

5.8.1 The current information obtained is based on a desk top study, visual inspection and a daytime assessment survey conducted in May.

5.8.2 In order to prevent any potential impacts occurring to bats present, it is recommended further activity surveys are undertaken. This will provide further information on bats at the site and should target all elevations of unit 1, unit 2 and unit 3.

5.8.3 The level of survey to give confidence in a **negative result** is summarised as (Bat Surveys for Professional Ecologists, 3rd 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.		

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

	Emergence (dusk)			Re-entry (dawn)		
	LOW	MOD	HIGH	LOW	MOD	HIGH
Unit 1		x 2				
Unit 2			x 2			x 1
Unit 3			x 2			x 1

6.0 IMPACT ASSESSMENT – in the absence of mitigation

6.1 The impact assessment will be completed following bat activity surveys. These further bat activity surveys have been commissioned for summer 2023.

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 Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, 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 **Additional bat activity survey work between May and August will be required to determine the impact on bat populations. The bat activity surveys should target unit 1, unit 2 and unit 3.**

7.1.5 The mitigation and compensation will be completed following bat activity surveys. These further bat activity surveys have been commissioned for summer 2023.

8.0 BIRDS

- 8.1 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.
- 8.2 The daytime assessment identified whether the studied buildings had any signs of residency and/or barn owl usage. Specifically, the visual survey involved:
- An assessment of the suitability of buildings or stone feature to enable access for breeding barn owls.
 - A thorough check for pellets, feathers or signs of old nest remains in the form of pellet debris and/or old broken egg shells.
- 8.3 The visual inspection also recorded any other visible active/disused nests and bird activity within the buildings.
- 8.4 Field survey results
- 8.4.1 There was no evidence of barn owls *Tyto alba* roosting in the buildings. No further surveys are recommended.

8.4.2 The following nests were observed:

Species/nest type	Number	Location	Comment
Small passerine*	8	Unit 1, 2, 3	
Swallow <i>Hirundo rustica</i>	6	Unit 3	

* Small passerine nest primarily moss, feathers, leaves and vegetation suitable for tits, blackbird *Turdus merula*, robin *Erithacus rubecula*, wren *Troglodytes troglodytes* etc.

- 8.5 Biodiversity Gains and Recommendation
- 8.5.1 All nests should remain undisturbed and intact until after the breeding bird season – mid February to early September. Any destructive building works (e.g. demolition, roof stripping, internal conversion, pointing of masonry etc.) and removal of trees, shrubs, scrub and tall vegetation should be undertaken outside of the bird nesting season which is between the months of mid-September and early February inclusive or be carefully checked by an ecologist to confirm no active nests are present. If nesting birds are found during the watching brief, destructive works will need to stop until the young have fledged.
- 8.5.2 In order to increase nesting opportunities for birds, it is recommended that Schwegler bird boxes are erected throughout the site. Local Authority guidance recommends that 25% of houses within a development should contain a bird box.
- 8.5.3 Bird boxes will target species of conservation concern. A summary of recommended bird boxes are listed below:

Name	Description	Number
Schwegler swift box #16S	Building box for eaves	3
Schwegler swallow box #10	Brick building box	5

- 8.5.4 Boxes should be placed so that the entrance does not face the prevailing wind, rain and strong sunlight. The sector from north to south east should be used, with south facing boxes positioned in more shaded areas.
- 8.5.5 Many species will use boxes at a wide variety of heights however to give the box protection in areas with a lot of human or mammalian predator activity they should be placed approximately 3-4 metres above ground level. A clear flight path should be available to and from the nest box.

9.0 REFERENCES

- Bat Conservation Trust. 'Bats in Churches' leaflet.
- Bat Conservation Trust. 'Bat Surveys for Professional Ecologists, 3rd 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 Cestolslovenske Spolecnosti Zoologicke.
- Mitchell-Jones, A.J. & McLeish, A.P. (1999) 'The bat workers' manual' 2nd edition. Joint Nature Conservation Committee.
- Mitchell-Jones, A.J. (2004) 'Bat mitigation guidelines.' English Nature, Peterborough.
- The Bat Conservation Trust 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
- <https://www.gov.uk/government/collections/bat-licences>

10.0 APPENDICES

10.1 Background to Bats - Bat Biology.

- 10.1.1 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).
- 10.1.2 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.
- 10.1.3 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.
- 10.1.4 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.
- 10.1.5 The conditions needed by bats for hibernation require the maintenance of a relatively stable low temperature (2 – 6^o). Suitable sites include; old trees, caves, cellars, tunnels, and icehouses.
- 10.1.6 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.
- 10.1.7 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.

10.1.8 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.

10.1.9 Bats have been in decline both nationally and internationally during the latter part of the 20th 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.

10.1.10 All 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 Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. 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.

10.1.11 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 (Amendment) (EU Exit) Regulations 2019. 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.’
- 10.1.12 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.
- 10.1.13 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.
- 10.1.14 ‘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 (Amendment) (EU Exit) Regulations 2019. This includes all developments and engineering schemes, regardless of whether or not they require planning permission.
- 10.1.15 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.

10.2 Significance of bat roosts, appraising the nature conservation value;

- 10.2.1 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.

10.3 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.