

Preliminary Roost Assessment (inc. Bat Emergence Survey)

Yew Tree Farm

Dams Lane

Gratton

Staffordshire

ST9 9AJ



Final Report

Report no. HE 2040823

Date of publication: 5th September 2023.

**Haslam Ecology
Wolverhampton**

Project

Preliminary Roost Assessment
(inc. Bat Emergence Survey)
Yew Tree Farm, Dams Lane, Gratton, Staffordshire. ST9 9AJ
Report No: HE 2040823.

Date: 5th September 2023

Description:

Preliminary Ecological Assessment and bat emergence survey to consider potential impacts to habitats and protected species in relation to a development proposal.

Author

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Disclosure

The information which I have prepared and provided is true and has been prepared and given in accordance with the guidance of my professional institution's Code of Professional Conduct, and I confirm that the opinions expressed are my true and professional opinions.

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Non-Technical Summary

- On the 30th August 2023, Haslam Ecology conducted a Preliminary Roost Appraisal (PRA) and bat emergence survey (4/9/23) of a barn at Yew Tree Farm, Gratton, Staffordshire, which is proposed for demolition and rebuild as an agricultural barn.
- **Survey Limitations:** The site was fully accessible. (Section 2).
- **How Protected/BAP habitats and species occur on the site:** The site does not contain BAP Priority Habitats. The barn does not contain bat roosts but the surrounding land is optimal for foraging bats. There was no evidence of protected species presence within the site (Section 3).
- **How are these likely to be impacted upon:** There will be a negligible impact on the surrounding wildlife by this development proposal, but a precautionary approach is recommended when works to the roof take place (Section 4 and 5).
- **Biodiversity Enhancement:** Due to the small scale of the proposal and the presence of foraging bats around the site, it is recommended that 3 bat boxes suitable for crevice dwelling species and a house sparrow terrace are installed on the new barn (Section 5 and Appendix D).
- Table S1 below provides a brief summary of mitigation onsite subject to the mitigation hierarchy and whether further survey is required before mitigation can be determined. Table S2 provides a summary of net losses/gains with respect habitats and protected species.

Table S1: Mitigation Hierarchy

Ecological Receptor	Avoid	Mitigate	Compensate	Further survey needed?	Mitigation measures Summary (See section 5)
Bats (roosting)	X				Building unlikely to support roosting bats.
Bats (foraging)		X			Sensitive exterior lighting to be implemented around foraging areas.
Nesting Birds	X			No	Timed clearance of potential nesting habitats.

1 Introduction

1.1 Terms of Reference

Haslam Ecology has been commissioned by the owners to undertake a Preliminary Roost Appraisal (PRA) and bat emergence survey in support of a proposal to demolish the existing barn and replace it with a modern agricultural barn on the same footprint at Yew Tree Farm, Dams Lane, Gratton, Staffordshire ST9 9AJ (hereafter referred to as the 'site').

This PRA report presents ecological information from the roost assessment survey carried out on 30th August 2023 and a single bat emergence survey on 4th September 2023. The purpose of this report is to provide ecological information to support the planning proposal and thus survey objectives include identifying ecological features onsite; subjecting them to evaluation and impact assessment; providing advice on the potential for contravention of legislation/policy; and providing recommendations on any further actions needed (licensing, mitigation, enhancement, etc.). A summary of main statutory provisions for biodiversity conservation relevant to this site is provided in Table 1.1 below.

Table 1.1: Main legislation relevant to the site

Biodiversity Legislation	Ecological Feature
Wildlife and Countryside Act 1981 (as amended)	Bats, Nesting Birds, Schedule 1 Birds
Conservation of Habitats and Species Regulations 2010	Bats
Conservation of Habitats and Species (Amendment) Regulations 2012	Wild Birds
Natural Environment and Rural Communities Act 2006 (NERC)	BAP Priority Habitats
Protection of Badgers Act 1992	Badgers
National Planning Policy Framework (2019 amendment)	Enhancement of the natural environment (Biodiversity Gain)

1.2 The Site

Site Name: Yew Tree Farm
Address: Dams Lane, Gratton, Staffordshire. ST9 9AJ.
OS Grid Ref: SJ 930 564
Location Plan; Figure A.1; Aerial View (wider landscape); Figure A.2; Site Aerial Figure A.3, (Appendix A).
Brief Description of Site: The barn complex is located on the northern edge of a farmyard with hard standing along the frontage and a field to the rear mown for a fodder crop. The main barn is a typical 2 storey 19 th Century construction of stone with brick and a clay tiled pitched roof internally subdivided into former animal housing on the ground floor with the upper floor a hay loft. Adjoining the west gable are two brick built with slate pitched roofs single storey outhouses whilst adjoining the south gable and northern elevation is a modern barn constructed from concrete blocks with corrugated metal cladding and a shallow pitched roof of corrugated sheeting with light panels.

Brief Description of Surroundings:
The site is located within an agricultural area with scattered residential properties at a low density and small settlements. The predominant habitat is grassland being a mixture of improved and semi-improved fields bordered by hedgerows, many of which contain mature standard trees and dry-stone walls. Woodlands are scattered and predominantly restricted to valleys.

1.3 Proposed Works

The client intends to demolish the barn complex and replace with a modern building on the same footprint.

2 Methodology

2.1 Surveyor Information

Table 2.1: Surveyor information

Ecologist	Relevant Experience (in yrs)
Dave Haslam MSc MCIEEM	42 with 15 years of bat ecology experience.

2.2 Survey Methods & Design Criteria

The focus of the surveys was habitats and badgers although evidence of other protected species and their habitats would also be noted, if applicable. A summary of the survey methodology is provided in Table 2.2 below. The following criteria were used to determine the type and extent of the surveys carried out:

- Habitats present both on and immediately around the site,
- Semi-natural habitat connectivity between the site and the wider area (e.g. hedgerows, water courses, shelter belts etc.)
- The nature and extent of works

2.2.1 Preliminary Ecological Appraisal

Table 2.2: PEA Survey Methodology

Survey details	Appropriateness of Methods	Geographical extent
30/08/23 Preliminary Roost Assessment (PRA) – Bats	Timing: Suitable (Anytime) In accordance with established guidance [(BCT, 2012), (Mitchell-Jones et al, 2004)]	Buildings, trees or other structures onsite; habitat assessment of site & surrounding habitat
	Methods: Internal/external daytime inspection of any structures for bat sign, and tree assessment, where applicable	
PEA – Badgers	Timing: Suitable (Feb-Dec) In accordance with established guidance (Harris S. et al, 1989)	Site & land within 30m radius of site
	Methods: Visual inspection for field sign	
PEA – Breeding birds	Timing (Habitat): Suitable (Anytime). Locations of nest sites	Site & adjacent habitats
	Methods: Habitat suitability assessment and/or casual check for nests	
Average weather conditions (PEA): 70% cloud cover, 14°C, No Wind, No Rain NB: Suitable and optimal survey timings are based on Templates for Biodiversity and Geological Conservation Validation Checklists. Pilot draft. (ALGE, 2007)		

2.2.2 Nocturnal Bat Survey

Nocturnal survey consisted of one dusk emergence surveys. Conditions during the survey are provided in Table 2.3 below.

Before and after the surveys an internal check for bats in the hay loft (conducted using a red filtered light) was carried out noting any change in bat evidence within the buildings and the presence of bats, in particular brown long-eared bats.

Table 2.3: Nocturnal Bat Survey Timing, Conditions and Methods

Standard Methodology			
Emergence surveys commenced 15 minutes before sunset and lasted for a maximum of 1.5 hours after sunset. Detector used: Echo Meter Pro.			
Survey Info	Start & End Times	Conditions (Start)	Conditions (End)
Dusk emergence 04/09/23	Start: 19:35 Sunset: 19:50 End: 20:45	Temp: 22°C Wind speed: 0 B'fort Cloud cover: 5% Precipitation: None	Temp: 18°C Wind speed: 0 B'fort Cloud cover: 10% Precipitation: None

2.3 Survey Limitations

The site was fully accessible, and the survey methodologies used were deemed to be the most effective possible for this site at this time of year.

2.4 Evaluation Criteria

In accordance with Guidelines for Preliminary Ecological Appraisal (2nd Edition) (CIEEM, 2017), and The Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2018). The following geographical frame of reference is used when ascribing a value or potential value to an ecological resource:

- **International importance** – e.g. Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites
- **National importance** – e.g. Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR)
- **Regional importance** – e.g. Environment Agency regional biodiversity indicators, important features in Natural England Natural Areas
- **County importance** – e.g. Local Nature Reserves (LNR), Site of Biological Interest (SBI), Site of Importance for Nature Conservation (SINC)
- **Local or parish importance** – e.g. Biodiversity Alert Site (BAS), Site of Local Importance for Nature Conservation (SLINC), ecological features or resources such as hedge rows, woodlands, ponds
- **Within the zone of influence** - e.g. Locally or regionally common habitats that provide ecological resources within the site and / or immediately surrounding area e.g. scrub, tall herbaceous vegetation
- **Secondary value** – e.g. Features that are of little ecological interest in themselves but perform an ecological function such as areas of scrub that that may buffer more sensitive habitats from the effects of development or intensive farming.
- **Negligible importance** – e.g. urban areas, hard standing, intensely farmed agricultural fields.

2.5 Bat Roost Evaluation (Buildings).

The assessment of buildings is placed into the following five categories:

No Potential: The building does not support features considered suitable for roosting bats.

Low Potential: Bats are very unlikely to use the building for a roost. Suitable cavities may exist, but these are open to wind, rain or disturbance.

Minor Potential: This category describes a building that has some potential to support roosting bats but is less than ideal in some way. For example, the feature may be subject to some kind of intermittent disturbance. A survey would not expect to find a bat using such a building and therefore the building may not be required to qualify for presence/absence surveys.

Moderate Potential: This category describes a building considered to have suitable habitat or features for roosting bats but no evidence of occupation by bats has been found during the survey. Features considered to have adequate potential would include cavities of appropriate dimensions that are generally free from disturbance and free from fluctuations in the weather. Such features are likely to be subject to further surveys (presence/absence surveys) at a time of year when bats are active.

High Potential/Confirmed: This category is where positive evidence of bats has been recorded. For example, bats are found; bat droppings may be present at a suitable location for roosting bats; existing bat records may be associated with the building. A licence from Natural England is likely to be required if a bat roost is to be disturbed by the development.

2.6 Impact Assessment Criteria

Negative and positive impacts on nature conservation features have been characterised based on predicted changes as a result of the proposed activities. In order to characterise the impacts on each feature, the following parameters are taken account of where appropriate:

- The magnitude of the impact
- The spatial extent over which the impact would occur
- The temporal duration of the impact
- Whether the impact is reversible and over what timeframe
- The timing and frequency of the impact.

3 Results

3.1 Protected Species Scoping Survey Results

3.1.1 Badger

There was no evidence of badger activity within the site or within a 30m perimeter to the site.

3.1.2 Nesting Birds

There was no evidence of nesting birds within the barn or on external features. During the survey, no swallows, swifts or house martins were observed feeding over the site.

3.1.3 Building and bats

The figure below indicates the location of the barn within the site.

Photographs of the buildings can be found in Appendix C.

Figure 3.1. Barn Location.



Table 3.3: Results of PRA

Preliminary Roost Assessment – 19 th Century Barn
Description: A well-maintained brick and stone built barn with a pitched clay tiled roof. The

ground floor is former animal housing whilst the upper floor is a hay loft. The roof is predominately unlined except for the northern lower part where it joins the modern barn which is lined. There are loose fitting loft hatches along the southern elevation facing to the farmyard with ventilation holes along the southern elevation and western gable.

The tiles and ridge tiles are intact with no gaps and the tile ends are sealed with cement on each gable. The beam slots and wall tops are sealed.

Adjoining the barn on the western gable is a brick built single storey outhouse with pitched clay tiled roofs. These are well maintained with no gaps and all doors and windows sealed. There are no missing tiles but there is a central ventilation ridge tile.

Potential Access Points:

Around loft hatch doors, through ventilation holes, ventilation ridge tile.

Potential Bat Roost Features:

Beneath air vent of ridge, around ridge beam in hay loft

Evidence of bats found:

Potential feeding remains (butterfly and moth wings) in hay loft.

Evidence of birds found:

None

Potential for roosting bats: Moderate Potential. (see definition; section 2.5)

Preliminary Roost Assessment – 20th Century Barn

Description:

A modern construction of concrete block half walls with corrugated metal sheeting on a wooden and metal frame. The roof is shallow pitched composed of corrugated sheeting with frequent light panels.

The barn is used for storing fodder crops (hay, straw).

The barn abuts the 19th Century barn with all joins sealed with no cracks or spaces suitable for bats to access the building interior.

This type of building construction is considered to be sub-optimal for roosting bats due to lack of crevices.

Potential Access Points:

Around doors

Potential Bat Roost Features:

None

Evidence of bats found:

none

Evidence of birds found:

None

Potential for roosting bats: No Potential. (see definition; section 2.5)

3.2 Bat Emergence Survey.

The 19th Century barn has been assessed as having a moderate potential to support roosting bats due to the air vents on the eastern range of the barn. Considering the surrounding habitat of connecting hedgerows, mature trees and low artificial light levels, a single emergence survey has been carried out to check for emerging bats.

During the survey, the interior was checked every 15minutes for signs of bat activity The weather conditions were within the optimal range for nocturnal surveys.

Prior to the survey there was no change in conditions or features within the buildings. A composite bat activity plan can be found in Appendix B, Fig. B.1.

3.2.1 Emergence Survey (4/9/23).

The first bat seen was a Common Pipistrelle that was observed entering the site from the south and foraging around the yard, the bat was clearly observed at 20:20 (30 minutes after sunset), foraging activity continued for approximately 5 minutes. This was followed by 2 more Common Pipistrelle (20:30 to 20:35) coming from the same direction and briefly foraging around the yard.

No bats were recorded emerging from the barn and from the frequent internal checks, no bats were observed or recorded flying in the interior..

The peak count was for 2 Common Pipistrelle.

3.2.2 Discussion of Results

The survey has been carried out at an optimal time when bats are active and in good weather conditions with the survey concentrated on the potential emergence points on the southern range of the barn and internally in the hay loft.

The barn does not contain bat roosts, the main area for foraging and commuting for the local bat populations appears to be around the farmyard with the bats entering the site from a southerly direction.

Considering bats are within the vicinity of the site, it is best practice to use Reasonable Avoidance Measures (RAMs) when demolishing the building roof.

4 Evaluation and Impacts

The following section provides an indication of the ecological value of features present, outlines nature conservation legislation relevant to the features and assesses the level of impact from the proposal on the features. The valuation is based on the Guidelines for Ecological Impact Assessment (CIEEM, 2018) – see sections 2.4 and 2.5. Impacts relate to both construction and operational phases of the development unless stated otherwise.

Table 4.1: Evaluation and Impacts

Ecological Feature	Relevant legislation	Evaluation	Mitigation Hierarchy	Impact Level
Bats (Roosting)	HR, WCA, NERC	National/Local	A	Negligible
	Impacts: Bat Roost unlikely to be in the barn. <u>Demolition:</u> None, but use of Reasonable Avoidance Methods (RAMs) and working lights should be restricted (Section 5.0). <u>Operational:</u> No artificial illumination to be directed along foraging lines (section 5).			
Badgers	BA	National/Local	A,	Nil
	Impacts: No evidence of badgers. <u>Demolition:</u> None, but a precautionary approach during construction is advised (Section 5.0). <u>Operational:</u> None expected.			
Bats (foraging & commuting)	HR, WCA	National/Local	A, M	Negligible
	Impacts: . <u>Demolition:</u> None, but precautionary approach advised (Section 5.0). <u>Operational:</u> None if sensitive lighting scheme is designed within the site (Section 5.0).			
Nesting Birds	WCA	National/local	A, C	Low
	Impacts: <u>Demolition:</u> Precautionary approach during habitat clearance (Section 5.0). <u>Operational:</u> None expected.			
Key to Legislation & Mitigation Hierarchy (& links to legislation) HR – Conservation of Habitats & Species Regulations 2017 (as amended) http://www.legislation.gov.uk/ukxi/2010/490/contents/made WCA – Wildlife & Countryside Act 1981 (as amended) http://www.legislation.gov.uk/ukpga/1981/69 NERC - Natural Environment and Rural Communities Act 2017 (as amended) http://www.legislation.gov.uk/ukpga/2006/16/section/40 BA - Protection of Badgers Act 1992 http://www.legislation.gov.uk/ukpga/1992/51/contents A – Avoid, M – Mitigate, C – Compensate				

5 Recommendations & Mitigation

It should be noted that all recommendations are provided as information only and specialist legal advice may be required. The conclusions of this report are based on current information. Reassessment is likely to be required if:

- Works are delayed for more than one year
- Proposal plans are amended subsequent to the publication of this report.

Table 5.1: Further Survey & Licensing

Further Survey and Licensing
Further Survey Required
No
Licence required
No

Table 5.2: Mitigation Hierarchy: Further Actions

Avoidance (A), Mitigation (M), Compensation (C) & Enhancement	
General	
If protected species (bats, nesting birds, badger) are encountered during construction works, work must stop immediately, and advice sought from a suitably qualified ecologist.	
Habitats	
Nesting Birds (A)	demolition of the barn should be carried out between September and March, which is outside the nesting period. If works are carried out between April and August, an internal check for nesting birds should be carried out prior to commencement of works.
Bats (foraging, commuting) (A)	When planning the locations and directions for lighting , avoid an increase in lighting levels or focusing lighting on potential bat foraging lines along the boundaries. This can be achieved through use of cowls, hoods, etc. to direct the light, avoiding tall lighting columns, using motion-sensor security lighting, and timing the lighting to avoid the 1hr after dusk and 1hr before dawn when bats are most active.
Bats (potential roosts) (A)	Although bats are likely to be absent from the barns, the implementation of Reasonable Avoidance Measures (RAM) (see below) are advised when demolishing the barns to reduce the chance of committing an offence with respect to bats. Ideally works should be carried out between October and February when bat activity is low. Reasonable Avoidance Measures to be implemented include: – Ensuring all workers are familiar with bat (and protected species) legislation at site induction and agree to work in accordance with and fully follow these best practice measures. – Careful check of any cracks/crevices/cavities in the roof prior to tile removal. Typical signs of usage by bats are droppings, urine stains,

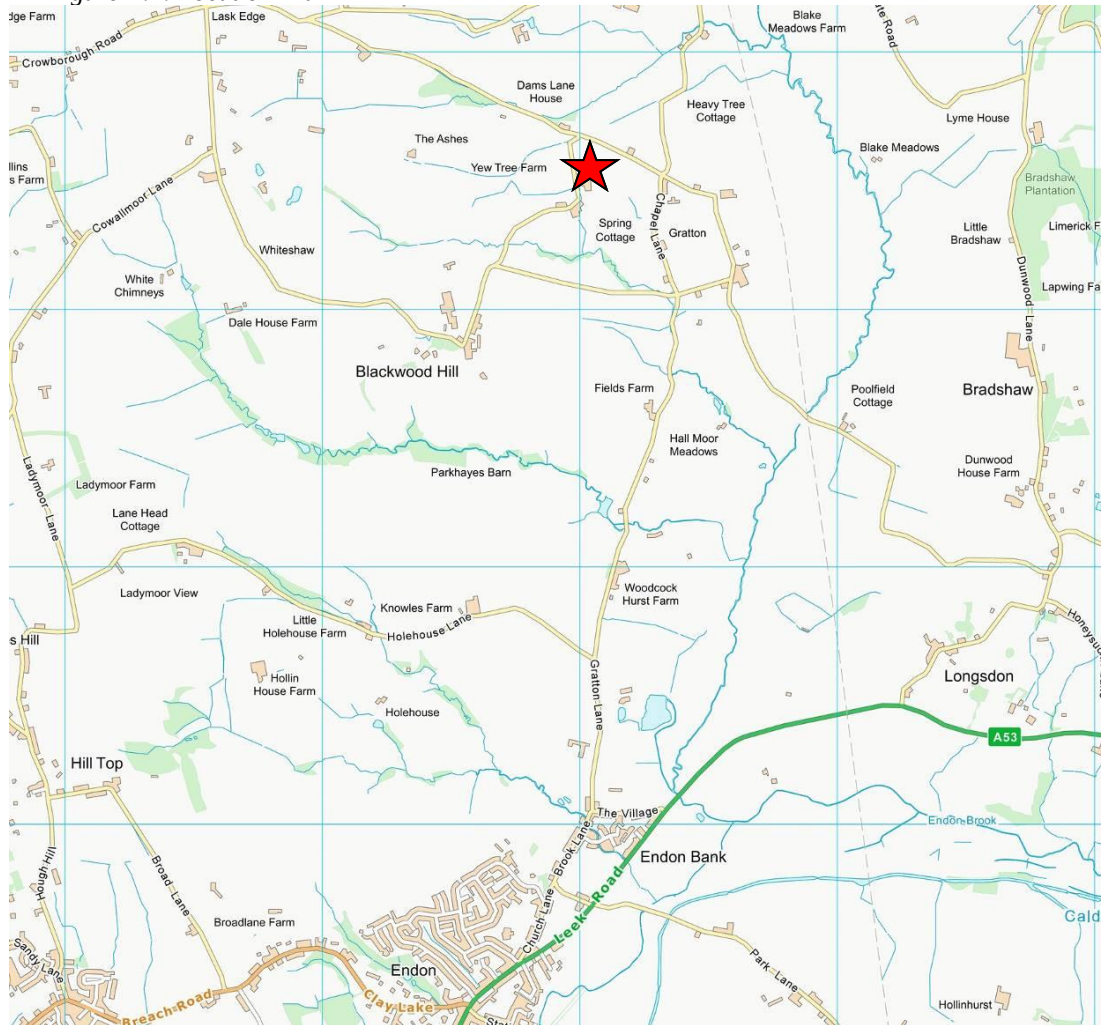
	colouration of access points by grease from their fur, slight polishing of brick / stone / wood work around entrance and lack of cobwebs when other adjacent holes have plenty. – Individual bats may be present under cladding, between timber boards, between corrugated sheeting and sometimes just clinging to timber beams around joins as well as others areas. When any of these are removed, please do so carefully, lifting outwardly, and checking for bats continually. • In the unlikely event that a bat is found, please adhere to the following: – An Ecological Clerk of Works is present to ensure compliance with legislation and to capture any bats that may be present. – At no point should the worker handle bats. Untrained handling may cause the bat unnecessary stress and injury and, if bitten, may expose the worker to rabies-related European Bat Lyssavirus. – Where possible replace the covering without damaging the bat before contacting the Ecological Clerk of Works. Any grounded bats should be covered with a cardboard box and left alone until a licensed bat worker arrives to assess the situation. – If the bat attempts to fly at any point allow it to do so. Preventing it will cause unnecessary stress and may cause injury to the bat. Halt works and report the escaped bat to Haslam Ecology.
Biodiversity Enhancement.	Due to the scale of the proposal and the presence of foraging bats, it is recommended that 3 bat boxes suitable for crevice dwelling species and a house sparrow terrace are installed on the new barn with the eastern elevation being the preferable location (Appendix D).

6 Bibliography

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Appendix A: Site Plans

Figure A.1: Location Plan



Site Location

Figure A.2: Aerial View (wider area).



Base Map: Google Earth

★ Site Location.

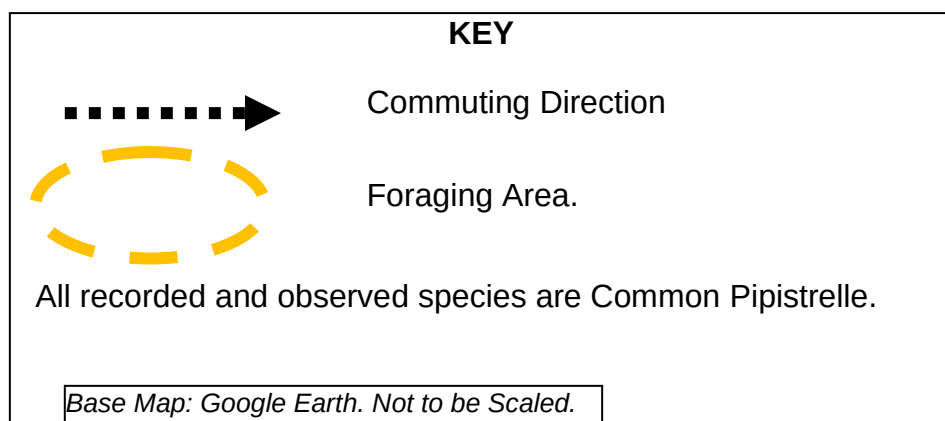
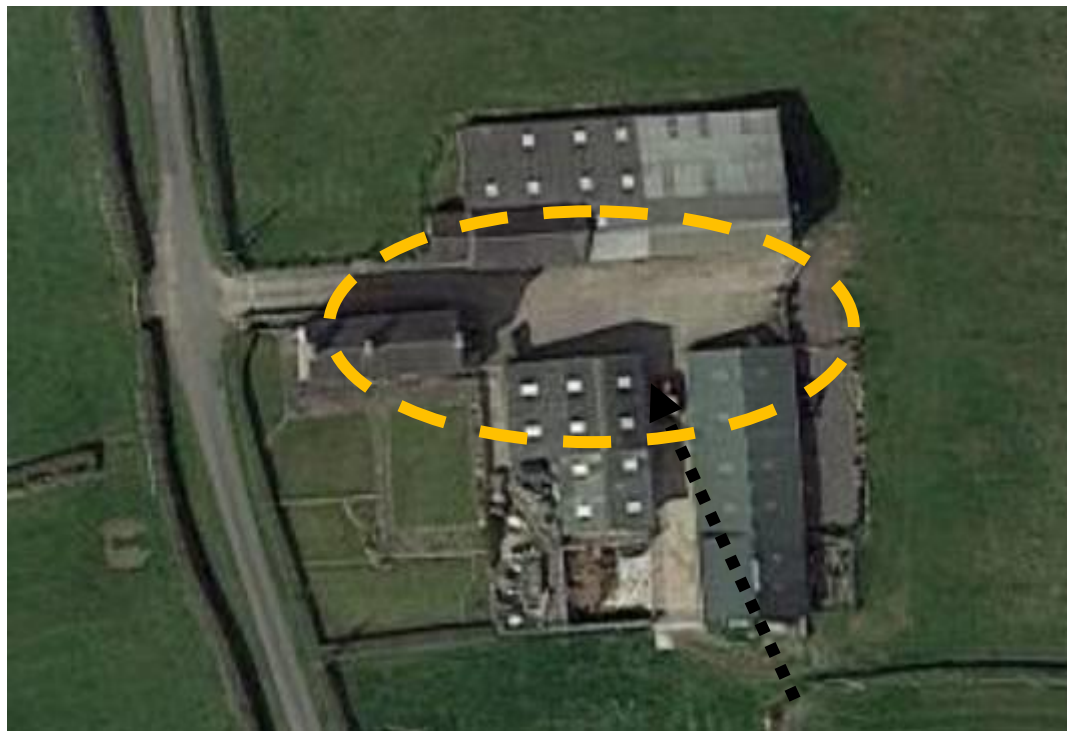
Figure A.3: Site Aerial (detail).



 Development Site Boundary (approx.)

Appendix B: Survey Plans.

Figure B.2: Bat Emergence Survey Plan (Composite).



Appendix C: Photographs.

Plate C.1 Barns (exterior)



Plate C.2 *Barns (Internal)*



Appendix D: Biodiversity Enhancement

Considering the scale of the proposal (single barn in farmyard) and the presence of foraging pipistrelle bats, it is recommended that 3 bat boxes suitable for crevice dwelling species and a house sparrow terrace are installed on the eastern elevation (preferable) of the new building.

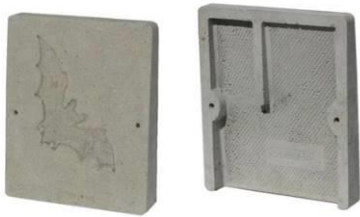
Bat Box Specification:

Number required: 3

Type: Schwegler 2FE Wall Mounted Bat Shelters

These wall-mounted bat shelters are ideal for Pipistrelle, Whiskered and Barbastelle bats species.

These 2FE bat shelters are a very effective, simple and cost-effective solution for providing crevice-inhabiting bats with a place to hide away. They can be used in the summer if mounted on a wall facing south or east, and for winter use, install them in a location free from ice and frost.



- 25-year warranty
- Dimensions: W250 x H300 x D 30 > 50 mm
 - Weight: 2.5kg each
 - Colour Grey. (paintable)

The boxes are to be fixed at a minimum height of 3.0m above ground level.

Bird Box Specification.

House Sparrow.

Type: Schwegler Sparrow Terrace 1SP

Number Required: 1.

This Sparrow Terrace has been made in WoodcretePLUS™ by Schwegler, it provides insulated accommodation for up to three families. The sparrow nesting box is designed for fixing on (or in) walls, 2 meters or more above ground level.

- height 16 x width 10.5 x depth approx. 15 cm
 - Overall: 245H x 430W x 200D mm
 - Weight: 13kg
- Colour options: Brown or Stone.



Note: Other box manufacturers are available as long as the above specifications are met.