

Top O'th' Hill Farm, Rivington Lane, Rivington, Bolton BL6 7RZ

## LICENSED BAT SURVEY AND ECOLOGICAL ASSESSMENT

October 2023

ERAP (Consultant Ecologists) Ltd Reference: 2020-231

ERAP (Consultant Ecologists) Ltd  
Building N2  
Chorley Business and Technology Centre  
East Terrace  
Euxton Lane  
Euxton  
Chorley  
PR7 6TE

Tel: 01772 750502

mail@erap.co.uk  
www.erap.co.uk



## CONTENTS

<b>Summary</b> .....	<b>3</b>
<b>1.0 Introduction</b> .....	<b>5</b>
1.1 Background and Rationale .....	5
1.2 Scope of Works .....	5
<b>2.0 Method of Survey</b> .....	<b>6</b>
2.1 Desktop Study and Data Search .....	6
2.2 Vegetation and Habitats .....	6
2.3 Licensed Bat Survey and Assessment .....	6
2.4 Other Relevant Protected Species and Animal Life .....	11
2.5 Survey and Reporting Limitations .....	12
2.6 Evaluation Methods .....	12
<b>3.0 Survey Results</b> .....	<b>13</b>
3.1 Desktop Study and Data Search .....	13
3.2 Vegetation and Habitats .....	17
3.3 Licensed Bat Survey and Assessment .....	19
3.4 Other Relevant Protected Species and Animal Life .....	22
<b>4.0 Evaluation and Assessment</b> .....	<b>23</b>
4.1 Introduction and Description of Proposals .....	23
4.2 Designated Sites for Nature Conservation .....	23
4.3 Vegetation and Habitats .....	24
4.4 Protected Species and Other Wildlife .....	24
<b>5.0 Recommendations and Ecological Enhancement</b> .....	<b>26</b>
5.1 Introduction .....	26
5.2 Site Design .....	26
5.3 Construction Environment Management Plan (CEMP) for Biodiversity .....	28
5.4 Bat Mitigation Strategy .....	30
<b>6.0 Conclusion</b> .....	<b>33</b>
<b>7.0 References</b> .....	<b>33</b>
<b>8.0 Appendix 1: Tables</b> .....	<b>35</b>
8.1 Photographs .....	35
8.2 Plant Species Lists .....	41
8.3 Raw Data from Bat Activity Surveys .....	42
<b>9.0 Appendix 2: Figures</b> .....	<b>49</b>

### List of Tables


Table 2.1: Consideration of Suitability of Foraging and Commuting Habitat for Bats .....	7
Table 2.2: Survey Equipment Used / Available for Use During Daylight Bat Survey .....	8
Table 2.3: Bat Roost Presence / Absence Survey Dates, Weather Conditions and Surveyors .....	10
Table 2.4: Important Habitat Characteristics for Reptiles .....	12
Table 3.1: SBI Within a 2 Kilometre Radius from the Centre of the Site .....	14
Table 3.2: Records of Protected Species Within a 2 Kilometre Radius from the Centre of the Site .....	14
Table 4.1: Summary of Bat Roosts Detected at the Site Between August 2020 and September 2023 .....	24
Table 5.1: Suitable Native Species for Tree and Shrub Planting .....	27
Table 5.2: Recommended Plants for Use in Gardens to Attract Bats .....	27
Table 8.1: Photographs .....	35
Table 8.2: Plant Species List for Modified Grassland on Close Mown Lawn .....	41
Table 8.3: Plant Species List for Modified Grassland on Along Northern and Eastern Margins .....	41
Table 8.4: Activity Survey 1, 10 <sup>th</sup> August 2020, Sunset Time 20:50, Start Time 20:30 .....	42
Table 8.5: Activity Survey 2, 29 <sup>th</sup> August 2020, Sunrise Time 06:13, Start Time 04:25 .....	43
Table 8.6: Activity Survey 3, 19 <sup>th</sup> August 2022, Sunrise Time 05:54, Start Time 04:09 .....	43
Table 8.7: Activity Survey 4, 2 <sup>nd</sup> September 2022, Sunset Time 19:59, Start Time 19:40 .....	45

Table 8.8: Activity Survey 5, 22<sup>nd</sup> August 2023, Sunset Time 20:24, Start Time 20:06 ..... 46  
 Table 8.9: Activity Survey 6, 5<sup>th</sup> September 2023, Sunset Time 19:52, Start Time 19:35..... 47

### List of Figures

Figure 1: Aerial Image of the Site and its Surroundings ..... 49  
 Figure 2: Phase 1 Habitat and Vegetation Map ..... 50

### Document Control

Survey Type:	Surveyors <sup>1</sup>	Survey Date(s)
Phase 1 Habitat Survey	Victoria Burrows B.Sc. (Hons) M.Sc. CEnv MCIEEM Amy Sharples B.Sc. (Hons) ACIEEM	4 <sup>th</sup> August 2020 19 <sup>th</sup> August 2022 5 <sup>th</sup> September 2023
Daylight licensed bat survey and assessment	Victoria Burrows B.Sc. (Hons) M.Sc. CEnv MCIEEM	4 <sup>th</sup> August 2020 19 <sup>th</sup> August 2022
Bat activity surveys	Victoria Burrows and assistants	10 <sup>th</sup> August 2020 29 <sup>th</sup> August 2020
	Victoria Burrows and assistants	19 <sup>th</sup> August 2022
	Amy Sharples and assistants	2 <sup>nd</sup> September 2022
	Amy Sharples and assistants	22 <sup>nd</sup> August 2023 5 <sup>th</sup> September 2023
Reporting	Personnel	Date
<b>Author</b>	Victoria Burrows B.Sc. (Hons) M.Sc. CEnv MCIEEM Principal Ecologist	13 <sup>th</sup> October 2023
<b>Signature(s)</b>		
<b>Checked</b>	Amy Sharples B.Sc. (Hons) M.Sc. ACIEEM	17 <sup>th</sup> October 2023
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## SUMMARY

### Introduction and Scope

- i. This ecological survey and assessment presents the ecological, biodiversity and nature conservation status of the property and surrounds at Top O'th' Hill Farm, Rivington BL6 7RZ.
- ii. The assessment was requested to inform a planning application proposing the redevelopment of the farmhouse and adjacent barn to a new detached property with associated landscaping.
- iii. This report presents the results of a desktop study and data search, an extended Phase 1 Habitat Survey and the relevant scope of survey for protected species namely badger, great crested newt, barn owl and bat species carried out between August 2020 and September 2023. The scope of survey undertaken is appropriate to identify potential ecological constraints, inform the site proposals, describe any mitigation required and to secure maximised opportunities for biodiversity associated with the redevelopment proposals.

### Results of Survey and Assessment

- iv. Top O'th' Hill Farm complex is located within semi-rural surroundings to the east of Lower Rivington Reservoir. The site covers an area of 0.42 hectares to encompass the farmhouse, Barn A and associated hard-standing, mown amenity grassland, ornamental tree and shrub planting and an area of improved grassland. Barn B (an off-site barn) was surveyed for completeness as this building will be removed as part of the works.
- v. The site has no statutory or non-statutory designation for nature conservation. The site lies 625 metres to the west of the West Pennine Moors SSSI. The site is not considered to provide functionally-linked land suitable for use by the qualifying bird species associated with the statutory designated sites in the wider area. As the property will be occupied by one family (as at the baseline), significant adverse impacts on statutory designated sites as a result of recreational pressures are reasonably scoped out.
- vi. The site is bordered by Lever Park BHS which is a large (211.18ha) BHS designated for the presence of a mosaic of semi-natural woodland, conifer and broadleaf plantation, acid grassland, heath and the terraced gardens. In the presence of mitigation, to be applied particularly during the construction period, direct and indirect adverse effects of the redevelopment proposals on non-statutory designated sites for nature conservation in the wider area are reasonably discounted.
- vii. No habitats within the site are species-rich or are indicative of semi-natural, irreplaceable habitat or Priority Habitat. No rare plant species were detected. No Japanese Knotweed or other invasive plant species as listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended) were detected at the site.
- viii. The daylight bat survey detected the presence of bat droppings in the roof void of the farmhouse and recorded one brown long-eared bat in the roof void of the farmhouse. The daylight surveys and the bat activity surveys carried out between August 2020 and September 2023 have detected the following roosts:
  - Roost A: Whiskered bat day roost behind the fascia at the south-western elevation of the farmhouse (max. 3 bats);
  - Roost B: Common pipistrelle day roost beneath the ridge coping at the farmhouse (max. 1 bat);
  - Roost C: Common pipistrelle day roost behind the timber fascia at Barn A (max. 1 bat);
  - Roost D: Brown long-eared bat day roost in the roof void at the farmhouse (max. 2 bats);
  - Roost E: Common pipistrelle day roost at roof verge on north-western elevation of the farmhouse (max. 1 bat);

- Roost F: Common pipistrelle day roost at the roof verge on the south-western gable elevation of Barn A (max. 2 bats);
- Roost G: Common pipistrelle day roost below the window lintel at the south-western elevation of the farmhouse (max. 2 bats);
- Roost H: Common pipistrelle day roost behind fascia on the south-western elevation of the farmhouse (max. 2 bats);
- Roost I: Common pipistrelle day roost above the door at the porch attached to the south-western elevation of the farmhouse (max. 1 bat).
- ix. In the absence of mitigation the demolition works will disturb bats and will destroy the detected roosts. Owing to the relevant wildlife legislation and the protection afforded to bats and their roosts, works at the farmhouse and Barn A must only be carried out under a relevant Natural England European Protected Species Mitigation licence. **Section 5.4** and **Figure 5** of this report presents a bat mitigation strategy, that has been discussed and agreed with the architect and client, to demonstrate how the proposals can be achieved whilst protecting roosting bats and ensuring there is no net loss of roosting opportunity at the site in the long-term.
- x. No evidence of use of the buildings by nesting birds, including barn owl, was detected during surveys. The trees and shrubs in the garden are suitable for use by nesting passerine birds; this report outlines the mandatory measures to protect nesting birds in accordance with best practice and identifies the significant areas of landscape planting to be accommodated to enhance the value of the site for use by nesting birds.
- xi. Appropriate survey effort and / or assessment in accordance with standard guidance, has been carried out to reasonably discount adverse effects on relevant protected species namely badger, great crested newt and reptile species. Owing to the proximity of the proposals to habitats that are suitable for use by hedgehog (a Priority Species), guidance in relation to reasonable avoidance measures for the protection of hedgehog during construction and their conservation at the site in the long-term is provided.

### Recommendations and Conclusion

- xii. In accordance with ecological guidance, the *Site Plan as 'Proposed'* (SDA, 2023) illustrates the accommodation of the landscape and habitat creation measures at the site. The intention of the specifications is to provide habitat that is complementary to the habitats in the wider area, to compensate for the minor losses of vegetation, to provide habitat suitable for long-term use by foraging bats, nesting birds and invertebrates and to maximise habitat connectivity around the site.
- xiii. The other recommendations in **Section 5.0** of the ecological survey and assessment report address all the mandatory measures and ecological recommendations to be applied to ensure compliance with wildlife legislation, the National Planning Policy Framework (NPPF) and best practice.

### Conclusion

- xiv. It is advised that the proposals at Top O'th' Hill Farm can be achieved in accordance with wildlife legislation, planning policy, Natural England guidance and best practice.
- xv. The comprehensive bat mitigation strategy outlined in **Section 5.4** demonstrates that mitigation for roosting bats and conservation of roosting and foraging opportunities at the site in the long-term is entirely feasible. The 'three tests' of *The Conservation of Habitats and Species Regulations 2017* (as amended) can be met. An appropriate Natural England European Protected Species Mitigation licence will be required to facilitate the works and can be applied for once planning permission is obtained.
- xvi. Other actions for the protection of wildlife, namely amphibians, hedgehog and nesting birds, and enhancement for biodiversity will be achieved by the works in accordance with wildlife legislation, best practice and the *Biodiversity Net Gain: Good Practice Principles for Development* (CIEEM, 2016).

## 1.0 INTRODUCTION

### 1.1 Background and Rationale

- 1.1.1 ERAP (Consultant Ecologists) Ltd was commissioned to carry out a licensed bat survey and ecological assessment of Top O'th' Hill Farm, Rivington Lane, Rivington BL6 7RZ (hereafter referred to as the 'site'). The Ordnance Survey (OS) grid reference at the centre of the site is SD 63154 13711. An aerial image of the site and its surrounding habitats is appended at **Figure 1** (source image: ESRI World Imagery).
- 1.1.2 The assessment was originally requested to inform a planning application proposing the extension of the farmhouse and conversion of the barn (Barn A) to a dwelling house. As the proposals have evolved the current planning application proposes the demolition of the farmhouse, Barn A and Barn B and redevelopment to one residential dwelling and associated landscaping.

### 1.2 Scope of Works

- 1.2.1 The scope of ecological works undertaken between August 2020 and September 2023 comprised:
- A desktop study and data search for known ecological information at the site and the local area;
  - An Extended Phase 1 Habitat Survey and assessment of the habitats at the site;
  - Assessment of the ecological value of the habitats within the site with the use of the National Vegetation Classification (NVC) and the Ratcliffe criteria, as presented in *A Nature Conservation Review* (Ratcliffe, 1977);
  - A daylight licensed bat survey of the buildings and an assessment of their suitability to support roosting bats at any time of year;
  - Survey and assessment of the habitats for use by nesting birds including species listed on Schedule 1 of the *Wildlife and Countryside Act 1981* (as amended) and Priority Species;
  - Survey and assessment of all habitats for relevant statutorily protected species<sup>1</sup> and other wildlife including badger (*Meles meles*), great crested newt (*Triturus cristatus*), other amphibians and reptiles;
  - Provision of guidance in accordance with wildlife legislation, *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)* (Collins, J. (ed), 2016), and best practice in relation to the proposed works;
  - The identification of any potential ecological constraints on the proposals and the specification of the scope of mitigation and ecological enhancement required in accordance with wildlife legislation, planning policy guidance and other relevant guidance; and
  - The identification of any further surveys or precautionary actions that may be prior to the commencement of construction activities.

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<sup>1</sup> In accordance with *Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and Their Impact on the Planning System* (Ministry of Housing, Communities & Local Government, 2005) developers should not be required to undertake surveys for protected species unless there is reasonable likelihood of the species being present and affected by the development. In this instance (for example) there are no water courses within or adjacent to the site; there has been no requirement to consider water vole (*Arvicola amphibius*) or otter (*Lutra lutra*) as part of this assessment.

## 2.0 METHOD OF SURVEY

### 2.1 Desktop Study and Data Search

2.1.1 The following sources of information and ecological records were consulted:

- a. MAGiC Maps: A web-based interactive map which brings together geographic information on key environmental schemes and designations, including details of statutory nature conservation sites;
- b. Lancashire Environment Record Network (LERN); and
- c. Lancashire and Greater Manchester Biodiversity Action Plans (BAP).

### 2.2 Vegetation and Habitats

2.2.1 An Extended Phase 1 Habitat Survey of the site was carried out by Victoria Burrows on 4<sup>th</sup> August 2020. The weather was dry and overcast with a light air (Beaufort scale 1) and an air temperature of 16. Updated walkover Phase 1 Habitat Surveys were carried out prior to the dusk emergence surveys and / or after the dawn re-entry surveys for bat activity on the dates as listed in **Table 2.3**.

2.2.2 A habitat and vegetation map was prepared for the site and the immediate surrounding area and is appended at **Figure 2**. The mapping is based on the Joint Nature Conservation Committee Phase 1 Habitat Survey methodology (JNCC, 2010) with minor adjustments to illustrate and examine the habitats with greater precision.

2.2.3 The plant species within the site boundary were determined with estimates of the distribution, ground cover, abundance and constancy of individual species. The estimation of abundance was based on the DAFOR system, where D = Dominant, A = Abundant, F = Frequent, O = Occasional and R = Rare, this being a widely used and accepted system employed by ecological surveyors. The terms L = Locally and V = Very were additionally used to describe the plant species distributions with greater precision.

2.2.4 Stands of vegetation and habitats were described and evaluated using the National Vegetation Classification (NVC). The NVC provides a systematic and comprehensive analysis of British vegetation and is a reliable framework for nature conservation and land-use planning.

2.2.5 Habitats within the site were assessed in accordance with the UK Habitats Classification / UKHab (Butcher, et al., 2020). The UKHab has been designed to function at two scales of minimum mappable unit (MMU): fine scale (25m<sup>2</sup> or 5 metres length) and large scale (400m<sup>2</sup> or 20 metres length). It has been considered for the purposes of this survey that the fine scale of 25m<sup>2</sup> or 5 metres length MMU is appropriate.

2.2.6 Searches were made for uncommon, rare and statutorily protected plant species, those species listed as protected in the *Wildlife and Countryside Act 1981* (as amended) and species which are indicators of important and uncommon plant communities. Plant nomenclature follows *New Flora of the British Isles 3<sup>rd</sup> Edition* (Stace, 2010).

2.2.7 Searches were carried out for the presence of invasive species, including those listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended), including Japanese Knotweed (*Fallopia japonica*), Indian Balsam (*Impatiens glandulifera*) and Giant Hogweed (*Heracleum mantegazzianum*).

### 2.3 Licensed Bat Survey and Assessment

#### Surveyor

2.3.1 The initial daylight licensed bat survey and assessments were carried out by Victoria Burrows (Natural England Class Survey Licence WML CL18 (Bat Survey Level 2), Registration Number

2015-10390-CLS-CLS) on 4<sup>th</sup> August 2020. Victoria’s qualifications and experience meet the criteria as defined in the *Technical Guidance Series Competencies for Species Survey: Bats* (CIEEM, 2013). Updated surveys of the buildings were carried out prior to the dusk emergence surveys and / or after the dawn re-entry surveys for bat activity on the dates as listed in **Table 2.3**.

### Guidelines

2.3.2 The surveys were carried out in accordance with standard methodology including the *Bat Mitigation Guidelines* (Mitchell-Jones, 2004), the *Bat Workers’ Manual 3<sup>rd</sup> Edition* (Mitchell-Jones & Mcleish, 2004) and *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)* (Collins, J. (ed), 2016). Where deviation from the guidelines was considered to be appropriate and proportionate, supporting rationale and evidence used to inform the assessment and decisions are presented in this report.

### Habitat Assessment for Commuting / Foraging Bats

2.3.3 Habitats within and adjacent to the site were assessed for their value and suitability for commuting and foraging bats in accordance with Table 4.1 of *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)*, (Collins, J. (ed), 2016). Reference has been made to the categories and descriptions / examples, presented below.

**Table 2.1: Consideration of Suitability of Foraging and Commuting Habitat for Bats**

Suitability	Commuting Habitat	Foraging Habitat
Negligible	Negligible habitat features on site likely to be used by commuting bats.	Negligible habitat features on site likely to be used by foraging bats.
Low	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 or patch of scrub.
Moderate	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 linked to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	Continuous, high-quality habitat that is well connected to the wider landscape and is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. Habitats close to and connected to known roosts.	High-quality habitat that is well-connected to the wider landscape and is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Habitats close to and connected to known roosts.

### Daylight Survey: Buildings

2.3.4 Inspections and assessment of the external surfaces, walls and roof of the buildings were carried out to find potential bat roosting habitat or accesses into crevices or areas where roosts may be present. Searches for evidence of bat presence in the form of droppings, urine stains, feeding signs, grease marks and other evidence were carried out.

2.3.5 Where required, ladders were used to gain closer inspections of specific features at the buildings.

2.3.6 The internal survey involved an examination of the accessible areas to find roosting bats or evidence of previous use of the building by bats such as droppings and prey remains.

2.3.7 The suitability of the buildings for use by roosting bats has been assessed in accordance with Table 4.1 of *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)*, (Collins, J. (ed), 2016), taking into account any presence of gaps suitable for access by bats, features suitable for use by roosting bats within the buildings (including crevice dwelling species and species which can



roost in the open in roof voids), and the suitability of the surrounding habitats for use by foraging and commuting bats.

### Daylight Survey: Trees and Shrubs

- 2.3.8 Trees and shrubs within the site (as annotated on **Figure 2**) were assessed from the ground using binoculars and a high-powered torch. Each tree / shrub was searched for the presence of features with suitability for use by roosting bats, as described, but not limited to, the following features:

*Woodpecker holes, rot holes, hazard beams, other vertical or horizontal cracks or splits in stems and branches, partially decayed platey bark, knot holes, man-made holes, tear-outs, cankers in which cavities have developed, other hollows or cavities, including butt-rots, double-leaders forming compression forks with included bark, gaps between overlapping stems or branches, partially detached Ivy (Hedera helix) with stem diameters in excess of 50mm and bat, bird or dormouse (Muscardinus avellanarius) boxes.*

- 2.3.9 Terms used to describe any features present follow (where possible) those outlined and described in *Bat Tree Habitat Key, 2<sup>nd</sup> Edition* (Andrews, H (ed), 2013) and *Bat Roosts in Trees: A Guide to Identification and Assessment for Tree-care and Ecology Professionals* (BTHK, 2018).
- 2.3.10 The requirement for further presence / absence surveys at each tree or shrub was then considered.

### Equipment

- 2.3.11 A list of equipment used / available for use is provided below.

**Table 2.2: Survey Equipment Used / Available for Use During Daylight Bat Survey**

Ladders
LED Lenser P14 torch
Canon Ixus digital camera
8x20 binoculars
Ridgid Micro Inspection Camera Endoscope CA-300

### Bat Activity: Presence / Absence and Roost Characterisation Surveys

- 2.3.12 The relevant scope of bat activity surveys was completed at the buildings to determine the presence or absence of roosting bats and to provide further survey evidence to characterise the detected roost(s).
- 2.3.13 Surveyors experienced in conducting bat surveys, were positioned at suitable locations to maximise the coverage of the elevations and roof of the buildings and identified potential roost features to determine any entry into or exit by roosting bats. Surveyor positions are annotated on **Figure 3**.
- 2.3.14 Heterodyne detectors were used to determine any bat detected to species or group (*Myotis* species often cannot be reliably separated to species via their echolocation calls, for example). Recording bat detectors units (Anabat Express, Anabat Scout and Anabat Walkabout) were used to record and analyse echolocation calls after the survey using Anabat Insight call analysis software. Any bat emergence or re-entry activity was recorded.
- 2.3.15 One dusk emergence survey and one dawn re-entry survey were conducted at the buildings in August 2020. These surveys were updated by one dawn re-entry survey and one dusk emergence survey on 19<sup>th</sup> August and 2<sup>nd</sup> September 2022.
- 2.3.16 Two updated dusk emergence surveys were conducted at the buildings on 22<sup>nd</sup> August and 5<sup>th</sup> September 2023.

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2.3.17 The surveys in 2022 and 2023 were aided by the use of night vision aids (NVA)<sup>2</sup>, supplemented with additional infra-red lighting (comprising Nightfox XB5 torches and infra-red floodlights). NVAs were used at the surveyor positions described in **Table 2.3** and shown on **Figure 3**. Footage was subsequently reviewed using VLC Media Player to determine any emergence / re-entry at the buildings.

2.3.18 The survey information is presented below.

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<sup>2</sup> Canon XA60 camcorders and Nightfox Red infra-red binoculars

**Table 2.3: Bat Roost Presence / Absence Survey Dates, Weather Conditions and Surveyors**

Year	2020		2022		2023	
Date	10 <sup>th</sup> August 2020	29 <sup>th</sup> August 2020	19 <sup>th</sup> August 2022	2 <sup>nd</sup> September 2022	22 <sup>nd</sup> August 2023	5 <sup>th</sup> September 2023
Survey type	Dusk emergence	Dawn re-entry	Dawn re-entry	Dusk emergence	Dusk emergence	Dusk emergence
Sunrise time	-	06:13	05:54	-	-	-
Sunset time	20:50	-	-	19:59	20:24	19:52
Start & end time	20:30 until 22:20	04:25 until 06:28	04:09 until 06:10	19:40 until 21:30	20:06 until 21:55	19:35 until 21:22
Weather	18°C and dry with a light breeze (Beaufort scale 2)	9°C and dry with a gentle breeze (Beaufort scale 3)	14°C and dry with a light air (Beaufort scale 1)	22°C and dry with a light air (Beaufort scale 1)	19°C and cloudy with a light air (Beaufort scale 1)	22°C and scattered cloud with a gentle breeze (Beaufort scale 3)
Survey Position	<b>Surveyor and Detector</b>	<b>Surveyor and Detector</b>	<b>Surveyor and Detector</b>	<b>Surveyor, Detector &amp; NVA</b>	<b>Surveyor, Detector &amp; NVA</b>	<b>Surveyor, Detector &amp; NVA</b>
1	Amy Sharples, Batbox III & Anabat Express	Amy Sharples, Batbox III & Anabat SD2	Victoria Burrows, Batbox Duet & Anabat Express	Marie Pickering, Batbox III, Anabat Express & Nightfox Red	Marisa Hensey, Anabat Scout & Canon XA60	Ian Nelson, Anabat Scout & Canon XA10
2	Sue Lonsdale, Batbox Duet & Anabat SD2	Surveyor at survey position 1 covered survey position 2	Vincent Smith, Anabat Scout 1	Danielle Rowlands, Anabat Scout & SANNCE CCTV system	Sue Lonsdale, Anabat Scout & Nightfox Red	Leah Hart, Anabat Scout & Nightfox Red
3	Victoria Burrows, Batbox Duet & Anabat SD2	Victoria Burrows, Batbox Duet & Anabat SD2	Sue Lonsdale, Anabat Scout	Amy Sharples, Batbox III, Anabat SD2 & Canon XF105	Amy Sharples, Batbox III, Anabat Express & Canon XA40	Marisa Hensey, Anabat Scout & Canon XA60
4	Aidan Pickering, Batbox Duet & Anabat Express	Aidan Pickering, Batbox Duet	Rachel Brown, Anabat Scout	Aidan Pickering, Anabat Scout & Nightfox Red	Vin Greenall, Anabat Scout & XA60	Catie Haworth, Anabat Scout & Canon CA40
5	Marie Pickering, Batbox III & Anabat Express	Marie Pickering, Batbox III	Rachel Platt, Batbox III and Anabat Express	Charlotte Walsh, Anabat Walkabout & SANNCE CCTV system	Anabat Express & Nightfox Red	Amy Sharples, Anabat Scout

## 2.4 Other Relevant Protected Species and Animal Life

### Badger

- 2.4.1 The survey area for badger covered the site (as annotated on **Figure 2**) and extended to accessible land within a radius of 50 metres from the site boundary.
- 2.4.2 The survey was conducted in accordance with guidance presented within *Badgers and Development* (Natural England, 2007) and *Badgers: surveys and mitigation for development projects* (Natural England, 2015).
- 2.4.3 The following signs of badger activity were searched for:
- a. Setts entrances, e.g. entrances that are normally 25 to 35cm in diameter and shaped like a 'D' on its side;
  - b. Large spoil heaps outside sett entrances;
  - c. Bedding outside sett entrances;
  - d. Badger footprints;
  - e. Badger paths;
  - f. Latrines;
  - g. Badger hairs on fences or bushes;
  - h. Scratching posts; and
  - i. Signs of digging for food.
- 2.4.4 Habitats within and surrounding the site were assessed in terms of their suitability for use by foraging and sheltering badger in accordance with their known habitat preferences as detailed in current guidance and *Badger* (Roper, 2010).

### Bird Species including Barn Owl

- 2.4.5 The buildings were searched for pellets, faecal splashes and feathers which may indicate use by roosting or nesting barn owl in accordance with *The Barn Owl Conservation Handbook* (Barn Owl Trust, 2012) and *Barn Owl Tyto alba Survey Methodology and Techniques for use in Ecological Assessment. Developing Best Practice in Survey and Reporting* (Shawyer, 2011).
- 2.4.6 Bird species observed and heard during the survey were recorded.
- 2.4.7 Habitats throughout the site and in the immediate surrounding area were assessed for their value to roosting, feeding and nesting birds, as indicated by the amount of shelter, feeding value, woody vegetation structure and species diversity of tree and shrub species in the site.

### Great Crested Newt and Amphibians

#### Desktop Search for Ponds

- 2.4.8 In accordance with *Great crested newts: advice for making planning decisions* (Natural England, 2022) all ponds within an unobstructed 500 metres of a site should be considered for their suitability to support breeding great crested newts. The potential of the proposed development to impact upon any great crested newt population(s) whose breeding ponds are within 500 metres must be considered.
- 2.4.9 There are no ponds within the site. Consultation of Ordnance Survey maps and MAGiC Maps did not detect any ponds within a 500 metres radius of the site boundary. The site lies 374 metres to the east of Lower Rivington Reservoir which is a large water body suitable for use by breeding common toad (*Bufo bufo*), a Priority Species; this is taken into consideration in **Section 4.4** and the guidance provided in **Section 5.3**.

## Reptile Species

- 2.4.10 The site and its surroundings were assessed in terms of their suitability for use by reptile species using the important characteristics for reptiles outlined in the draft document ‘*Reptile Mitigation Guidelines*’ (Natural England, 2011), and the *Reptile Habitat Management Handbook* (Edgar, et al., 2010). These habitat characteristics are outlined below.

**Table 2.4: Important Habitat Characteristics for Reptiles**

1. Location (in relation to species range)	7. Connectivity to nearby good quality habitat
2. Vegetation Structure	8. Prey abundance
3. Insolation	9. Refuge opportunity
4. Aspect	10. Hibernation habitat potential
5. Topography	11. Disturbance regime
6. Surface geology	12. Egg-laying site potential

## Other Wildlife

- 2.4.11 Evidence of other wildlife (including Priority Species) observed whilst on site (but for which specific surveys were not made) was recorded and has been included in this report where it is considered of relevance to the planning application. Habitats have been assessed for their suitability for Priority Species identified in the data search results where this is considered relevant to the application.

## 2.5 Survey and Reporting Limitations

- 2.5.1 No significant survey limitations were experienced. A significant amount of survey data collated over three survey seasons is presented in this report to provide a robust account on in the bat roost status of the buildings.
- 2.5.2 All measurements within this report are approximate only, and have been either estimated whilst on site or calculated using mapping software (QGIS) or internet-based mapping services such as MAGiC Maps and Google Earth.

## 2.6 Evaluation Methods

- 2.6.1 The habitats, vegetation and animal life were evaluated with reference to standard nature conservation criteria as described in *A Nature Conservation Review* (Ratcliffe, 1977). These are size (extent), diversity, naturalness, rarity, fragility, typicality, recorded history, position in an ecological or geographical unit, potential value and intrinsic appeal.
- 2.6.2 Habitats have been assessed to determine whether they meet those described in *UK Biodiversity Action Plan: Priority Habitat Descriptions* (Maddock, A (ed), 2008); these lists are used to help draw up the statutory lists of Priority Habitats, as required under Section 41 of the *Natural Environment and Rural Communities (NERC) Act 2006*. Where suitable, the ecological value of the habitats present has been assessed using the terms outlined in *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* (CIEEM, 2018).
- 2.6.3 Government advice on wildlife, as set out in the *National Planning Policy Framework* (Ministry of Housing, Communities and Local Government, 2021) and associated government circulars has been taken into consideration. Legislation relating to protected species, such as those listed under Schedules 1, 5, 6 and 8 of the *Wildlife and Countryside Act 1981* (as amended) and *The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019*, is referenced where applicable, and any impacts to protected species are evaluated in accordance with current guidance.
- 2.6.4 The presence of any Priority Species, as listed under Section 41 of the *Natural Environment and Rural Communities (NERC) Act 2006* is noted, and habitats are assessed in terms of their suitability and value for these species. The presence of habitats and / or species listed by the Lancashire Biodiversity Action Plan has been taken into account in the evaluation of the site.

## 3.0 SURVEY RESULTS

### 3.1 Desktop Study and Data Search

#### Statutory Designated Sites for Nature Conservation and SSSI Impact Risk Zones

- 3.1.1 The site and adjacent land have no statutory designation for nature conservation.
- 3.1.2 The site lies within a Site of Special Scientific Interest (SSSI) Impact Risk Zone for the West Pennine Moors SSSI, located 625 metres east of the site. West Pennine Moors SSSI supports a mosaic of upland-fringe habitats and important bird assemblages.
- 3.1.3 The SSSI Impact Risk Zone requires the Local Planning Authority to consult with Natural England on likely risks from the following development categories (Ordnance Survey, 2023):

*Infrastructure:* Pipelines and underground cables, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals.

*Wind & Solar Energy:* Wind turbines.

*Minerals, Oil & Gas:* Planning applications for quarries, including: new proposals, Review of Minerals Permissions, extensions, variations to conditions etc. Oil and gas exploration / extraction.

*Residential:* Residential development of 100 units or more.

*Rural Residential:* Any residential development of 50 or more houses outside existing settlements / urban areas.

*Air Pollution:* Any industrial / agricultural development that could cause air pollution including industrial processes, livestock and poultry units with floorspace greater than 500m<sup>2</sup>, slurry lagoons and digestate stores greater than 200m<sup>2</sup>, manure stores greater than 250 tonnes.

*Combustion:* General combustion processes greater than 20 megawatt energy input including energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis / gasification, anaerobic digestion, sewage treatment works, other incineration / combustion.

*Waste:* Landfill including inert landfill, non-hazardous landfill, hazardous landfill.

*Composting:* Any composting proposal with more than 500 tonnes maximum annual operational throughput including open windrow composting, in-vessel composting, anaerobic digestion, other waste management.

*Water Supply:* Large infrastructure such as warehousing / industry where net additional gross internal floorspace is greater than 1,000m<sup>2</sup> or any development needing its own water supply.

#### Non-statutory Designated Sites for Nature Conservation

- 3.1.4 The site has no non-statutory designation for nature conservation, called 'Biological Heritage Sites' or 'BHS' in Lancashire and 'Sites of Biological Importance' or 'SBI' in Greater Manchester.
- 3.1.5 **Figure 2** indicates that part of the site (0.03ha) lies within the Lever Park BHS. Given the shape of the BHS boundary it is suggested that this is a cartographical error that has occurred when the boundaries have been transposed from hand drawn maps. Nevertheless guidance / assessment below and in **Section 4.2** applies. The site is bordered by Lever Park BHS which is a large (211.18ha) BHS designated for the presence of a mosaic of semi-natural woodland, conifer and broadleaf plantation, acid grassland, heath and the terraced gardens. It is situated to the west of Lower Rivington Reservoir, to the north of Horwich. The

site is notable for its woodland breeding bird assemblage and it also supports a nationally notable crane fly, *Neolimnophila carteri*, which is a species of damp woodland; this is considered further in **Section 4.2**.

- 3.1.6 Eight BHSs and four SBIs are located within a 2 kilometre radius from the centre of the site, and are summarised at **Table 3.1** below.

**Table 3.1: SBI Within a 2 Kilometre Radius from the Centre of the Site**

BHS / SBI Name	Distance and Direction from the Site	Reasons for Designation
<b>BHS</b>		
Lever Park	Adjacent to the site boundary	Habitat Mosaics (Hm3); Other Invertebrates (In2); Birds (Av8j)
Lower Rivington Reservoir	0.3 kilometres to the south-west	Flowering Plants and Ferns (Ff4b); Flowering Plants and Ferns (Ff4a)
Winter Hill, Rivington Moor and Daddy Meadows	0.89 kilometres to the east	Bog (Bo4); Flowering Plants and Ferns (Ff3); Birds (Av8g); Birds (Av3)
Bradley's Farm Fields	0.89 kilometres to the north	Grassland (Gr3); Swamp and Fen (Fe1); Flowering Plants and Ferns (Ff4b)
Upper Rivington Reservoir	0.96 kilometres to the north-west	Flowering Plants and Ferns (Ff4b); Flowering Plants and Ferns (Ff4a)
Shaw's Clough and Shaw's Wood	1.19 kilometres to the south-east	Woodland and Scrub (Wd1)
Tennis Court Field	1.32 kilometres to the north-west	Grassland (Gr3)
Dean Wood	1.4 kilometres to the north	Woodland and Scrub (Wd1); Fish (Fi1); Birds (Av8j)
<b>SBI</b>		
Knoll Wood (South)	1.24 kilometres to the south-east	Ancient Woodland (Wd1)
Winter Hill & Smithills Moor	1.66 kilometres to the east	Heathland & Bog (HB1); Birds (Br2, BR4, Br6)
Wilderswood & Higher Meadow	1.72 kilometres to the south-east	Woodland (Wd1); Grassland (Gr2); Heath (HB1)
Crown Clough	1.84 kilometres to the south	Woodland (Wd1)

### Priority Habitats Inventory and Soilscape Information

- 3.1.7 The Priority Habitats Inventory<sup>3</sup> was checked via MAGiC Maps. No Priority Habitats are identified at the site by the inventory. Land beyond the track at the eastern site boundary is identified as Woodpasture and Parkland Priority Habitat on MAGiC Maps.
- 3.1.8 In accordance with *Soilscape (England)* as presented on MAGiC Maps (National Soil Resources Institute, 2005), the site supports '*freely draining slightly acid loamy soils*', and the characteristic semi-natural habitats associated with the soils comprise '*neutral and acid pastures and deciduous woodlands; acid communities such as bracken and gorse in the uplands*'.

### Protected and Notable Species

- 3.1.9 Records of protected and notable species for a 2 kilometre radius from the centre of the site are summarised at **Table 3.2** below.

**Table 3.2: Records of Protected Species Within a 2 Kilometre Radius from the Centre of the Site**

Taxon Group	Species Name and Designations <sup>1</sup> and Notes
Amphibians	Palmate newt ( <i>Lissotriton helveticus</i> ): WCAs5. 6 records, dated between 1995 and 2010. The closest record is 680 metres to the east, and from 2010.

<sup>3</sup> A spatial dataset that describes the geographic extent and location of Natural Environment and Rural Communities Act (2006) Section 41 habitats of principal importance.

Taxon Group	Species Name and Designations <sup>1</sup> and Notes
	<p>Smooth newt (<i>Lissotriton vulgaris</i>): WCAs5 (sale only). 1 record from 1995. An accurate estimation of distance of the record to the site cannot be made due to the locational data being less than a six figure grid reference</p> <p>Common toad (<i>Bufo bufo</i>): WCAs5, PS &amp; LBAP. 8 records, dated between 1986 and 2010. The closest record is 590 metres to the south-west, and from 1986.</p> <p>Common frog (<i>Rana temporaria</i>): WCAs5 &amp; LBAP. 16 records, dated between 1986 and 2015. The closest record is 680 metres to the east, and from 2010.</p>
Birds – WCAs1	<p>Barn owl (<i>Tyto alba</i>): WCAs1. 1 record from 1982, located 145 metres to the north-west.</p> <p>Black redstart (<i>Phoenicurus ochruros</i>): WCAs1. 1 record from 2012, located 1625 metres to the east.</p> <p>Black tern (<i>Chlidonias niger</i>): WCAs1. 1 record from 1982, located 605 metres to the west.</p> <p>Brambling (<i>Fringilla montifringilla</i>): WCAs1. 9 records, dated between 1982 and 1994. The closest record is 145 metres to the north-west, and from 1982.</p> <p>Golden oriole (<i>Oriolus oriolus</i>): WCAs1. 1 record from 1982, located 145 metres to the north-west.</p> <p>Goldeneye (<i>Bucephala clangula</i>): WCAs1. 6 records, dated between 1982 and 2003. The closest record is 605 metres to the west, and from 1989.</p> <p>Great northern diver (<i>Gavia immer</i>): WCAs1. 1 record from 1982, located 605 metres to the west.</p> <p>Greenshank (<i>Tringa nebularia</i>): WCAs1. 1 record from 1982, located 605 metres to the west.</p> <p>Kingfisher (<i>Alcedo atthis</i>): WCAs1. 8 records, dated between 1982 and 2015. The closest record is 145 metres to the north-west, and from 1982.</p> <p>Long-tailed duck (<i>Clangula hyemalis</i>): WCAs1. 3 records, dated between 1982 and 1989. The closest record is 605 metres to the west, and from 1989.</p> <p>Osprey (<i>Pandion haliaetus</i>): WCAs1. 1 record from 1982, located 605 metres to the west.</p> <p>Redwing (<i>Turdus iliacus</i>): WCAs1. 11 records, dated between 1982 and 2003. The closest record is 145 metres to the north-west, and from 1982.</p> <p>Slavonian grebe (<i>Podiceps auritus</i>): WCAs1. 2 records, both from 1989. The closest record is 605 metres to the west.</p> <p>Bewick's swan (<i>Cygnus columbianus</i>): WCAs1, PS &amp; LBAP. 1 record from 1982, located 605 metres to the west.</p> <p>Common scoter (<i>Melanitta nigra</i>): WCAs1, PS &amp; LBAP. 1 record from 1982, located 605 metres to the west.</p> <p>Black-throated diver (<i>Gavia arctica</i>): WCAs1 &amp; PS. 1 record from 1982, located 605 metres to the west.</p> <p>Black-necked grebe (<i>Podiceps nigricollis</i>): WCAs1 &amp; LBAP. 2 records, both from 1989. The closest record is 605 metres to the west.</p> <p>Little gull (<i>Hydrocoloeus minutus</i>): WCAs1 &amp; LBAP. 1 record from 1982, located 605 metres to the west.</p> <p>Little ringed plover (<i>Charadrius dubius</i>): WCAs1 &amp; LBAP. 1 record from 1997. An accurate estimation of distance of the record to the site cannot be made due to the locational data being less than a six figure grid reference</p> <p>Little tern (<i>Sternula albifrons</i>): WCAs1 &amp; LBAP. 1 record from 1982, located 605 metres to the west.</p> <p>Merlin (<i>Falco columbarius</i>): WCAs1 &amp; LBAP. 3 records, dated between 1982 and 1994. The closest record is 145 metres to the north-west, and from 1982.</p> <p>Peregrine (<i>Falco peregrinus</i>): WCAs1 &amp; LBAP. 1 record from 1982, located 145 metres to the north-west.</p> <p>Red-throated diver (<i>Gavia stellata</i>): WCAs1 &amp; LBAP. 3 records, dated between 1982 and 1989. The closest record is 605 metres to the west, and from 1989.</p> <p>Whooper swan (<i>Cygnus cygnus</i>): WCAs1 &amp; LBAP. 4 records, dated between 1978 and 1989. The closest record is 605 metres to the west, and from 1989.</p>



Taxon Group	Species Name and Designations <sup>1</sup> and Notes
Birds - PS	<p><b>PS &amp; LBAP</b></p> <p>Skylark (<i>Alauda arvensis</i>), tree pipit (<i>Anthus trivialis</i>), cuckoo (<i>Cuculus canorus</i>), lesser spotted woodpecker (<i>Dendrocopos minor</i>), yellowhammer (<i>Emberiza citrinella</i>), reed bunting (<i>Emberiza schoeniclus</i>), herring gull (<i>Larus argentatus</i>), grasshopper warbler (<i>Locustella naevia</i>), spotted flycatcher (<i>Muscicapa striata</i>), curlew (<i>Numenius arquata</i>), house sparrow (<i>Passer domesticus</i>), tree sparrow (<i>Passer montanus</i>), grey partridge (<i>Perdix perdix</i>), wood warbler (<i>Phylloscopus sibilatrix</i>), willow tit (<i>Poecile montana</i>), duncock (<i>Prunella modularis</i>), bullfinch (<i>Pyrrhula pyrrhula</i>), starling (<i>Sturnus vulgaris</i>), song thrush (<i>Turdus philomelos</i>), ring ouzel (<i>Turdus torquatus</i>), lapwing (<i>Vanellus vanellus</i>)</p> <p><b>PS Only</b></p> <p>Lesser redpoll (<i>Acanthis cabaret</i>), linnet (<i>Linaria cannabina</i>)</p>
Birds - LBAP	<p>Common sandpiper (<i>Actitis hypoleucos</i>), shoveler (<i>Anas clypeata</i>), teal (<i>Anas crecca</i>), wigeon (<i>Anas penelope</i>), meadow pipit (<i>Anthus pratensis</i>), swift (<i>Apus apus</i>), grey heron (<i>Ardea cinerea</i>), pochard (<i>Aythya ferina</i>), black-headed gull (<i>Chroicocephalus ridibundus</i>), raven (<i>Corvus corax</i>), kestrel (<i>Falco tinnunculus</i>), snipe (<i>Gallinago gallinago</i>), oystercatcher (<i>Haematopus ostralegus</i>), lesser black-backed gull (<i>Larus fuscus</i>), great black-backed gull (<i>Larus marinus</i>), red-breasted merganser (<i>Mergus serrator</i>), willow warbler (<i>Phylloscopus trochilus</i>), water rail (<i>Rallus aquaticus</i>), whinchat (<i>Saxicola rubetra</i>), common tern (<i>Sterna hirundo</i>), arctic tern (<i>Sterna paradisaea</i>), shelduck (<i>Tadorna tadorna</i>), redshank (<i>Tringa totanus</i>)</p>
Bony fish	<p>Atlantic salmon (<i>Salmo salar</i>): PS &amp; LBAP. 2 records, both from 2014. The closest record is 1205 metres to the south.</p> <p>Brown / sea trout (<i>Salmo trutta</i>): PS &amp; LBAP. 11 records, dated between 1995 and 2013. The closest record is 1205 metres to the south, and from 2001.</p> <p>European eel (<i>Anguilla anguilla</i>): PS &amp; LBAP. 4 records, dated between 2006 and 2013. The closest record is 1775 metres to the north-west, and from 2006.</p> <p>Brown trout (<i>Salmo trutta subsp. fario</i>): LBAP. 2 records, dated 1994 and 1995. The closest record is 1205 metres to the south, and from 1995.</p> <p>Bullhead (<i>Cottus gobio</i>): LBAP. 17 records, dated between 1995 and 2014. The closest record is 1205 metres to the south, and from 2014.</p>
Conifers	<p>Juniper (<i>Juniperus communis</i>): PS &amp; LBAP 1 record from 2013. An accurate estimation of distance of the record to the site cannot be made due to the locational data being less than a six figure grid reference</p>
Ferns	<p>Moonwort (<i>Botrychium lunaria</i>): LBAP. 2 records, dated 1839 and 1859. The closest record is 1330 metres to the east, and from 1839.</p> <p>Mountain male-fern (<i>Dryopteris oreades</i>): LBAP. 1 record from 1989, located 710 metres to the east.</p> <p>Parsley fern (<i>Cryptogramma crispa</i>): LBAP 1 record from 1860. An accurate estimation of distance of the record to the site cannot be made due to the locational data being less than a six figure grid reference</p>
Flowering plants - PS	<p>Lesser Butterfly-orchid (<i>Platanthera bifolia</i>): PS &amp; LBAP 1 record from 1953. An accurate estimation of distance of the record to the site cannot be made due to the locational data being less than a six figure grid reference</p> <p>Tubular Water-dropwort (<i>Oenanthe fistulosa</i>): PS &amp; LBAP. 2 records, both from 1998. The closest record is 995 metres to the north-west.</p>
Flowering plants - LBAP	<p>Orange Foxtail (<i>Alopecurus aequalis</i>), White Bryony (<i>Bryonia dioica</i>), Purple Small-reed (<i>Calamagrostis canescens</i>), Bladder-sedge (<i>Carex vesicaria</i>), Northern Marsh-orchid (<i>Dactylorhiza purpurella</i>), Fat Duckweed (<i>Lemna gibba</i>), Bog-myrtle (<i>Myrica gale</i>), Tasteless Water-pepper (<i>Persicaria mitis</i>), Buckthorn (<i>Rhamnus cathartica</i>), Wild Service-tree (<i>Sorbus torminalis</i>), Lesser Meadow-rue (<i>Thalictrum minus</i>), Heath Dog-violet (<i>Viola canina</i>)</p>
Insects Butterflies	<p>Small heath (<i>Coenonympha pamphilus</i>): PS &amp; LBAP. 14 records, dated between 1989 and 2017. The closest record is 145 metres to the north-west, and from 1989.</p> <p>Wall (<i>Lasiommata megera</i>): PS &amp; LBAP. 9 records, dated between 2000 and 2012. The closest record is 580 metres to the east, and from 2007.</p>

Taxon Group	Species Name and Designations <sup>1</sup> and Notes
Insects - Moths	<p><b>PS Only</b></p> <p>Mouse moth (<i>Amphipyra tragopoginis</i>), dusky brocade (<i>Apamea remissa</i>), minor shoulder-knot (<i>Brachylomia viminalis</i>), small square-spot (<i>Diarsia rubi</i>), small phoenix (<i>Ecliptopera silaceata</i>), autumnal rustic (<i>Eugnorisma glareosa</i>), ghost moth (<i>Hepialus humuli</i>), rosy rustic (<i>Hydraecia micacea</i>), white ermine (<i>Spilosoma lubricipeda</i>), cinnabar (<i>Tyria jacobaeae</i>)</p> <p><b>LBAP Only</b></p> <p>Dark marbled carpet (<i>Dysstroma citrata</i>), chimney sweeper (<i>Odezia atrata</i>)</p>
Jawless fish	Brook lamprey ( <i>Lampetra planeri</i> ): LBAP. 6 records, dated between 1989 and 2013. The closest record is 1800 metres to the north-west, and from 1989.
Reptile	Common lizard ( <i>Zootoca vivipara</i> ): WCAs5, PS & LBAP. 4 records, dated between 1996 and 2011. The closest record is 740 metres to the north-east, and from 2005.
Spider	Scotinotylus evansi ( <i>Scotinotylus evansi</i> ): LBAP 1 record from 1977. An accurate estimation of distance of the record to the site cannot be made due to the locational data being less than a six figure grid reference
Terrestrial mammals	<p>Brown long-eared bat (<i>Plecotus auritus</i>): EPS, WCAs5, PS &amp; LBAP. 2 records, dated 2015 and 2018. The closest record is 955 metres to the north-east, and from 2018.</p> <p>Noctule bat (<i>Nyctalus noctula</i>): EPS, WCAs5, PS &amp; LBAP. 11 records, dated between 1987 and 2010. The closest record is 235 metres to the south, and from 1989.</p> <p>Soprano pipistrelle (<i>Pipistrellus pygmaeus</i>): EPS, WCAs5, PS &amp; LBAP. 5 records, dated between 2007 and 2010. The closest record is 1440 metres to the north, and from 2010.</p> <p>Bats (Chiroptera): EPS, WCAs5 &amp; LBAP. 3 records, dated between 1989 and 2006. The closest record is 995 metres to the north-west, and from 2006.</p> <p>Pipistrelle bat species (<i>Pipistrellus</i> sp.): EPS, WCAs5 &amp; LBAP. 2 records, both from 2009. The closest record is 1425 metres to the west.</p> <p>Unidentified bat (<i>Myotis</i> sp.): EPS, WCAs5 &amp; LBAP. 19 records, dated between 1995 and 2010. The closest record is 995 metres to the north-west, and from 2006.</p> <p>Common pipistrelle (<i>Pipistrellus pipistrellus</i>): EPS &amp; WCAs5. 87 records, dated between 1995 and 2012. The closest record is 355 metres to the south-east, and from 2007.</p> <p>Eurasian red squirrel (<i>Sciurus vulgaris</i>): WCAs5, PS &amp; LBAP. 26 records, dated between 1984 and 1990. The closest record is 145 metres to the north-west, and from 1989.</p> <p>European water vole (<i>Arvicola amphibius</i>): WCAs5, PS &amp; LBAP. 6 records, dated between 1980 and 1999. The closest record is 1110 metres to the south, and from 1980.</p> <p>Brown hare (<i>Lepus europaeus</i>): PS &amp; LBAP. 14 records, dated between 1986 and 2011. The closest record is 1265 metres to the north-east, and from 1986.</p> <p>West European hedgehog (<i>Erinaceus europaeus</i>): PS &amp; LBAP. 9 records, dated between 1986 and 2017. The closest record is 995 metres to the north-west, and from 2011.</p>
<p><b><sup>1</sup>Key to Designation Codes:</b></p> <p>EPS = European Protected Species under <i>The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019</i>.</p> <p>WCAs1 = Species receives full protection under Schedule 1 of the <i>Wildlife and Countryside Act 1981</i> (as amended).</p> <p>WCAs5 = Species receives full protection under Schedule 5 of the <i>Wildlife and Countryside Act 1981</i> (as amended).</p> <p>PS = Priority Species listed under Section 41 of the NERC Act 2006.</p> <p>LBAP = Species listed on the Lancashire Biodiversity Action Plan Provisional Long List.</p>	

3.1.10 The presence of these protected and notable species within the wider area has been taken into account throughout this report.

## 3.2 Vegetation and Habitats

### General Description

3.2.1 The approximately 0.42 hectare site lies within the Lever Park area of Rivington to the west of the Terraced Gardens Rivington and east of Lower Rivington Reservoir. The site comprises a farmhouse and barn (Barn A) bordered by hard-standing. A garden of mown amenity grassland and ornamental trees and shrubs is present to the south-east of the farmhouse. Land in the north-eastern area of the site is occupied by mown improved grassland.

- 3.2.2 The site boundaries are demarcated by timber post and rail fencing. Beyond the site boundaries is sheep grazed improved grassland and Barn B is located to the south-east of the site.
- 3.2.3 A Phase 1 Habitat Survey map is appended at **Figure 2**. Photographs are appended at **Table 8.1**.

#### **Buildings and Hard-standing**

- 3.2.4 The farmhouse and Barn A are bordered by hard-standing that is devoid of vegetation. The buildings are described in **Section 3.3**. The buildings are described by the UKHab as u1b5 buildings and the hard-standing is u1b6 other developed land.

#### **Garden Curtilage**

- 3.2.5 Refer to **Photo 3**. The garden area to the south-west of the farmhouse comprises a mown lawn of modified grassland with herbaceous borders.
- 3.2.6 The modified grassland is characterised by abundant Yorkshire-fog (*Holcus lanatus*), Rough Meadow-grass (*Poa trivialis*), Common Bent (*Agrostis capillaris*) and Creeping Buttercup (*Ranunculus repens*) with frequent White Clover (*Trifolium repens*), Self-heal (*Prunella vulgaris*) and very locally abundant Cock's-foot (*Dactylis glomerata*), and occasional Common Cat's-ear (*Hypochaeris radicata*) and Common Sorrel (*Rumex acetosa*). A plant species list is appended at **Table 8.2**.
- 3.2.7 Shrubs in the herbaceous borders are characterised by *Hydrangea*, Holly (*Ilex aquifolium*), Apple (*Malus* sp.) and Hawthorn (*Crataegus monogyna*) with an understorey of bare soil and ornamental herbs such as Purple Bellflower (*Campanula* sp.). A Garden Privet (*Ligustrum ovalifolium*) hedgerow separates the mown grassland from the improved grassland buffer that wraps around the northern site margin.
- 3.2.8 The modified grassland on the lawn is described by the UKHab as g4 modified grassland with the secondary code 66 frequently mown. The shrub and herbaceous borders are h3h mixed scrub with the secondary codes 48 non-native and 75 active management and the Garden Privet hedgerow is described as h2b other hedgerow and the secondary code 48 non-native.

#### **Improved / Modified Grassland**

- 3.2.9 Refer to **Photos 4 and 5**. The improved / modified grassland to the north of the house and along the eastern margin of the site is characterised by constant and abundant Yorkshire-fog and Rough Meadow-grass with constant and frequent Yarrow (*Achillea millefolium*). Common Bent, Creeping Buttercup, Perennial Rye-grass (*Lolium perenne*) and Sweet Vernal-grass (*Anthoxanthum odoratum*) and frequent with locally frequent Common Sorrel, Cock's-foot and very locally abundant White Clover. A plant species list is appended at **Table 8.3**.
- 3.2.10 A stone wall with a young Oak (*Quercus* sp.) trees is present at the eastern site boundary.
- 3.2.11 The modified grassland is indicative of the MG7 *Lolium perenne* community of the NVC (Rodwell, 1992) and is described by the UKHab as g4 modified grassland with the secondary code 64 mown. The stone wall is described by the UKHab as u1e built linear feature.

#### **Invasive Plant Species**

- 3.2.12 No Japanese Knotweed is present at the site. No other invasive plant species as listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended) were detected at the site. Indian Balsam plants are present in the off-site wooded copse to the south of the site; further guidance in relation to precautionary measures is described in **Section 5.3**.

### 3.3 Licensed Bat Survey and Assessment

#### Habitat Assessment for Commuting / Foraging Bats

- 3.3.1 The buildings lie within a site of hard-standing and managed modified grassland. These habitats are assessed to be of 'moderate' suitability for use by foraging bats. Habitats bordering the site are characterised by mosaic of improved and semi-improved grasslands with livestock, woodland and wooded copses, open water and tributary / feeder streams and marshy grassland; these habitats, held in combination, are of 'high' suitability for use by foraging and commuting bats, including the range of bat species typically found in Lancashire namely common and soprano pipistrelle, noctule, brown long-eared, whiskered bat, Brandt's bat, Daubenton's and Natterer's.

#### Daylight Survey and Assessment

##### *Farmhouse*

- 3.3.2 Refer to **Photos 6 to 17**. The two-storey detached stone built farmhouse is dated 1904, although there is evidence it has been extended to the rear. The building has pitched slated overed roofs with terracotta ridge copings and stone chimney stacks. Parapets with coping stones are present at the gable ends.
- 3.3.3 Timber soffits are present around the roofline. A timber framed porch canopy is present at the south-western elevation.
- 3.3.4 The elevation walls are well-pointed; no gaps between the stone blocks or between the stone window sills and lintels and the surrounding stonework were detected.
- 3.3.5 Opportunities for bat access were noted in the following positions:
- Beneath the ridge copings;
  - Beneath the slates on the roof and over the porch;
  - At the lead flashing at the base of the chimney stacks;
  - At the roof verges at the gables above the windows where no parapet wall is present; and
  - Beneath the eaves (i.e. between the timber soffits and the stone walls).
- 3.3.6 Scattered bat droppings were present on the flags beneath the front (south-western elevation) and rear (north-eastern) elevations and on the window sill at the ground floor on the south-western elevation.
- 3.3.7 Inspection of the low (1.3 metres high) roof void at the farmhouse confirmed the presence of hessian backed bitumastic felt beneath the slates and fibreglass insulation over the floor of the void. The roof timbers were clear of cobwebs at the highest points and staining was found (which can indicate use by roosting bats as the oils from the bats fur rub against the roof timbers).
- 3.3.8 The search detected the presence of scattered bat droppings over the fibreglass insulation on the floor of the roof void and one brown long-eared bat was found in the crevice created by the ridgeboard and a rafter (refer to **Photos 16 and 17**).
- 3.3.9 The farmhouse is a confirmed brown long-eared bat roost [Roost D] and is assessed to have 'high' suitability for use by other bat species for roosting.

##### *Barn A*

- 3.3.10 Refer to **Photos 18 to 26**. Barn A is a two-storey stone barn with a pitched slate covered roof. Gaps at the ridge copings, between the slates and behind the timbe fascia may provide opportunities for bat access. A single storey stone lean-to with a corrugated metal sheet covered roof is attached to the north-western elevation. Timber and metal framed windows are present.

- 3.3.11 The stone elevation walls appear to be well mortared with the exception of a crack / damage at the southern corner, minor holes in the stonework at the south-western elevation and at a vertical gap next to a window lintel on the north-western elevation; all these features may provide opportunities for crevice roosting bat species.
- 3.3.12 Internally the barn is divided into two levels with the upper level used to gain access to view the board lined underside of the slates. The presence of skylights creates a light internal area at the upper level. The internal side of the stone walls are either well-sealed with white-wash or are well pointed. No gaps suitable for bat access were found at the mortise joints at the roof timbers.
- 3.3.13 No bats were found inside the barn. Scattered bat droppings (20+) were found on the floor of the upper level of the barn to indicate bats have accessed the internal area.
- 3.3.14 Barn A is assessed to have 'moderate' suitability for use by roosting bats; particularly crevice roosting species.

#### ***Barn B (off-site)***

- 3.3.15 Refer to **Photos 27** and **28**. Barn B is a steel-framed barn with single-ply corrugated sheet elevation walls and a pitched roof of corrugated metal sheets.
- 3.3.16 No crevices for use by roosting bats were found. Barn B is assessed as 'negligible' suitability for use by roosting bats.

#### ***Trees and Shrubs***

- 3.3.17 None of the trees and shrubs within the site boundary have features with suitability for use by roosting bats; all are assessed to be of 'negligible' suitability.

#### **Bat Activity Surveys**

- 3.3.18 **Figure 4** appended shows the location of the detected roosts. Relevant photographs are appended at **Section 8.1**. The roosts detected at the site are collated and characterised at **Section 4.4**.

#### ***1: 10<sup>th</sup> August 2020: Dusk Emergence***

- 3.3.19 The appended **Table 8.4** provides a summary of the surveyor observations and the results of the recording bat detectors from the dusk emergence survey on the 10<sup>th</sup> August 2020.

- 3.3.20 In summary:

- a. Three whiskered bats (*Myotis mystacinus*) (recorded as *Myotis* species and call analysis, geographical area and observations confirms whiskered bat) emerged from behind the timber fascia at the south-western elevation of the farmhouse [**Roost A**] between 21:08 and 21:19;
- b. One common pipistrelle (*Pipistrellus pipistrellus*) emerged from beneath the ridge coping at the farmhouse [**Roost B**] at 21:18;
- c. One common pipistrelle emerged from behind the timber fascia at the south-eastern elevation of Barn A at 21:20 [**Roost C**]; and
- d. One brown long-eared bat emerged from **Roost D** in the roof void at the farmhouse at 21:23.

- 3.3.21 Calls of common pipistrelle, soprano pipistrelle (*Pipistrellus pygmaeus*), noctule (*Nyctalus noctula*), *Myotis* species and brown long-eared bat recorded during the survey period.

#### ***2: 29<sup>th</sup> August 2020: Dawn Re-entry***

- 3.3.22 The appended **Table 8.5** provides a summary of the surveyor observations and the results of the recording bat detectors from the dawn re-entry survey on the 29<sup>th</sup> August 2020.

3.3.23 Two brown long-eared bats were recorded entering the roof void [**Roost D**] at the farmhouse at 5:39 and 05:41.

3.3.24 Other recorded bat activity on this survey date was limited to occasional common pipistrelle passes.

**3: 19<sup>th</sup> August 2022: Dawn Re-entry**

3.3.25 The appended **Table 8.6** provides a summary of the surveyor observations and the results of the recording bat detectors from the dawn re-entry survey on the 19<sup>th</sup> August 2022. Bat droppings were recorded over the flags around the south-western elevation of the farmhouse after the survey.

3.3.26 Two brown long-eared bat were recorded entering the roof void [**Roost D**] at the farmhouse via a ridge coping near the chimney at the south-eastern elevation at 05:01 and 05:22.

3.3.27 Other recorded activity comprised:

- a. One common pipistrelle bat entered a gap at the roof verge on the north-western elevation at 05:15 [**Roost E**];
- b. Two common pipistrelle entered a gap in the stonework at the south-western gable of Barn A at 05:23 and 05:30 [**Roost F**]; and
- c. One common pipistrelle entered a gap beneath the fascia board at the south-western elevation of the farmhouse at 05:52 [**Roost H**].

3.3.28 Common pipistrelle and *Myotis* calls were recorded by the detectors at the site with noctule bats passing overhead during the survey.

**4: 2<sup>nd</sup> September 2022: Dusk Emergence**

3.3.29 The appended **Table 8.7** provides a summary of the surveyor observations and the results of the recording bat detectors from the dawn re-entry survey on the 2<sup>nd</sup> September 2022. Bat droppings were recorded over the flags around the south-western elevation of the farmhouse prior to the survey.

3.3.30 The following roosts were detected during the survey:

- a. Two common pipistrelles emerged from a gap below the lintel above the first floor window on the south-western elevation of the farmhouse at 20:11 and 20:12 [**Roost G**];
- b. Two common pipistrelle emerged from behind the fascia on the south-western elevation of the farmhouse [**Roost H**] at 20:22 and 20:28;
- c. One common pipistrelle emerged from a gap above the door under the porch canopy at the south-western elevation of the farmhouse at 20:28 [**Roost I**]; and
- d. Two brown long-eared bats were observed emerging from the roof void [**Roost D**].

3.3.31 No evidence of a roost was found at Barn A on this survey date.

**5: 22<sup>nd</sup> August 2023: Dusk Emergence Survey**

3.3.32 The appended **Table 8.8** provides a summary of the surveyor observations and the results of the recording bat detectors from the dawn re-entry survey on the 22<sup>nd</sup> August 2023.

3.3.33 The following roosts were detected during the survey:

- a. Two common pipistrelle emerged from the gap below the lintel above the first floor window at the farmhouse [**Roost G**];

- b. Two common pipistrelle emerged from behind the fascia on the south-western elevation of the farmhouse [**Roost H**];
- c. One common pipistrelle emerged from a gap above the door under the porch canopy at the south-western elevation of the farmhouse at 20:26 [**Roost I**];

3.3.34 Common pipistrelle and *Myotis* calls were recorded by the detectors at the site with noctule bats passing overhead during the survey.

#### **6: 5<sup>th</sup> September 2023: Dusk Emergence**

3.3.35 The appended **Table 8.9** provides a summary of the surveyor observations and the results of the recording bat detectors from the dawn re-entry survey on the 5<sup>th</sup> September 2023.

3.3.36 The following roosts were detected during the survey:

- a. One common pipistrelle emerged from **Roost H** at the fascia at the south-western elevation of the farmhouse at 20:00;
- b. One common pipistrelle emerged from **Roost I** at the gap near the lintel on the south-western elevation of the farmhouse at 20:11; and
- c. One common pipistrelle emerged from a gap in the stone wall on the south-eastern elevation of Barn A at 21:02 [**Roost C**].

#### **Review of Infra-red Camera Footage**

3.3.37 Review of the footage captured on the NVAs did not detect any other emergence (or re-entry) activity.

### **3.4 Other Relevant Protected Species and Animal Life**

#### **Badger**

3.4.1 No badger setts or signs of badger activity was detected at the site and surveyed area.

#### **Bird Species**

##### ***Barn Owl***

3.4.2 No evidence of the current or previous use of the buildings by nesting or roosting barn owl was detected.

3.4.3 No evidence of the use of the buildings by nesting birds was detected in August 2023.

3.4.4 Evidence of use (pellets and droppings) of the off-site Barn B by roosting kestrel (*Falco tinnunculus*) was found in August 2020.

3.4.5 The trees, shrubs and ornamental hedgerow in the garden curtilage are suitable for use by nesting passerine (i.e. perching) species typical of garden habitats such as song thrush (*Turdus philomelos*), dunnock (*Prunella modularis*) and blackbird (*Turdus merula*).

3.4.6 Tawny owl (*Strix aluco*) were audible in the woodland to the south-east of the suite during the bat activity surveys.

#### **Reptiles**

3.4.7 There are no reported records of reptile species for the site. It is recognised that there are reported records of common lizard in land 740 metres to the north of the site (refer to **Table 3.2**). However, the conditions at the site with a high percentage cover of hard-standing and buildings and close mown lawn / modified grassland is considered to provide sub-optimal conditions for use by sheltering common lizard (when compared with the grasslands and heathland in the wider area).

- 3.4.8 The presence of common lizard and habitats with suitability for use by common lizard in the wider area and land bordering the site is taken into consideration in the assessment at **Section 4.4** and the recommendations at **Section 5.3**.

#### **Other Wildlife**

- 3.4.9 Hedgehog droppings were noted over the lawn and on the hard-standing curtilage around the house on the survey dates. Hedgehog is a Priority Species and the presence of this species and habitats used by hedgehog is considered further at **Section 4.4**.

## **4.0 EVALUATION AND ASSESSMENT**

### **4.1 Introduction and Description of Proposals**

- 4.1.1 Since 2020 a number of options for the redevelopment of the site to meet the needs of the current owner and their family have been explored. This has comprised the exploration of the retention of the buildings and extension and conversion of the barns. The current proposals work with the current planning policy restrictions, the needs of the client, and the objective of providing betterment to the site in terms of sustainability, habitat creation and longevity of the buildings.

- 4.1.2 The proposals, as illustrated on the *Site Plan as 'Proposed'* (SDA, 2023), comprise:

- a. Demolition of the farmhouse and Barns A and B;
- b. Construction of a new residential dwelling;
- c. Modification of the access to the house from the track off Rivington Lane;
- d. Creation of a surface water drainage pond; and
- e. Extensive landscape and habitat creation.

- 4.1.3 Access (both during construction and in the long-term) will be along the track from Rivington Lane.

- 4.1.4 As outlined below, following the detection of brown long-eared, common pipistrelle and *Myotis* bat roosts at the farmhouse and Barn A and in consideration of the suitability of the surrounding habitats for the attraction of foraging bats, guidance in relation to the bat mitigation strategy and accommodation of bat roosts at the new property was provided to SDA (architect) and the guidance has influenced discussion with the client and the final site proposals (refer to **Section 5.4** and **Figure 5**).

- 4.1.5 **Section 4.2** provides an assessment of any impacts of the proposed development on the designated sites for nature conservation present in the wider area. The ecological value of habitats within the site is evaluated at **Section 4.3**, and protected and notable species, including roosting bats, are considered at **Section 4.4**.

### **4.2 Designated Sites for Nature Conservation**

#### **Statutory Designated Sites for Nature Conservation**

- 4.2.1 The proposals will have no direct impact on a statutory designated site for nature conservation.
- 4.2.2 It is considered that the site is sufficiently small and distant from the West Pennine Moors SSSI that the proposed development will have no direct or indirect impact on the West Pennine Moors SSSI and its features of special interest.

#### **Non-statutory Designated Sites for Nature Conservation**

- 4.2.3 It is recognised that the construction access route will extend along a track from Rivington Lane that lies within the Lever Park BHS (if the 0.03ha of land which falls inside the BHS owing to a likely mapping error is excluded, refer to **Section 3.1**). At the current time there is no intention to remove any trees or vegetation



in the BHS to create access. In the presence of protective measures (refer to **Section 5.3**) it is considered that the proposals will have no direct effect on the BHS and its features of interest.

- 4.2.4 The BHS is designated for the presence of a mosaic of semi-natural woodland, conifer and broadleaf plantation, acid grassland, heath and the terraced gardens. None of these habitats lie within the site boundary. It is advised that the proposals will not have an adverse effect on habitats that are complementary to the BHS. As described in **Section 5.2**, the proposals specify the creation of extensive areas of habitat creation and landscape planting namely tree and woodland planting, a surface water drainage pond and native hedgerows that aim to complement the habitats in the wider area.
- 4.2.5 The BHS is also reported to be notable for its woodland breeding bird assemblage. The proposals will not affect any woodland habitat. In the presence of mitigation measures to minimise disturbance during the construction period (particularly during March to August inclusive) (refer to **Section 5.3**) and the extensive habitat creation and landscape proposals (refer to **Section 5.2**) it is considered that long-term / permanent adverse effects on breeding birds are avoided and the opportunities for woodland breeding birds are enhanced over the long-term.

### 4.3 Vegetation and Habitats

- 4.3.1 No Priority Habitat, semi-natural habitats or irreplaceable habitats<sup>4</sup> are present in the site or will be affected by the proposals.
- 4.3.2 No rare plant species were detected. The NVC communities present are typical of the geographical area and conditions present. No invasive plant species listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended) were detected in the site.
- 4.3.3 In terms of each habitat's importance in a geographical context<sup>5</sup>, the improved grassland and scattered trees / ornamental shrubs are of value at the 'site' level. The amenity grassland / lawn, hard-standing and garden habitats are not considered to hold any importance on a geographical scale.

### 4.4 Protected Species and Other Wildlife

#### Bats

- 4.4.1 The following roosts listed below have been detected at the site:

**Table 4.1: Summary of Bat Roosts Detected at the Site Between August 2020 and September 2023**

Roost Reference	Building	Roost Location / Roost Access	Bat Species	Maximum Number of Bats	Survey Number Use was Detected	Roost Type
A	Farmhouse	Behind fascia at the south-western elevation	Whiskered bat	3	1	Day
B	Farmhouse	Beneath ridge coping	Common pipistrelle	1	1	Day
C	Barn A	Behind timber fascia at the southern corner	Common pipistrelle	1	1 and 6	Day
D	Farmhouse	In the roof void	Brown long-eared	2	1, 2, 3 and 4	Day

<sup>4</sup> As defined by <https://defralanduse.blog.gov.uk/2023/10/05/irreplaceable-habitats-and-bng-what-you-need-to-know/>

<sup>5</sup> Using the terms presented at Section 4.7 of *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* (CIEEM, 2018), i.e. International and European, National, Regional, Local Authority-wide area, River Basin District, Estuarine system / Coastal cell or Local. The term 'site' value is additionally used to highlight ecological features considered to be of importance in the context of the wider site habitats, but which are of negligible value in the context of the local area.

Roost Reference	Building	Roost Location / Roost Access	Bat Species	Maximum Number of Bats	Survey Number Use was Detected	Roost Type
E	Farmhouse	At the roof verge on the north-western elevation	Common pipistrelle	1	3	Day
F	Barn A	In stonework at the south-western elevation	Common pipistrelle	2	3	Day
G	Farmhouse	Below the window lintel at the south-western elevation	Common pipistrelle	2	4 and 5	Day
H	Farmhouse	Gap beneath the fascia board at the south-western elevation	Common pipistrelle	2	3, 4, 5 and 6	Day
I	Farmhouse	Gap above door under porch on south-western elevation	Common pipistrelle	1	4, 5 and 6	Day

- 4.4.2 No evidence of use of Barn B by roosting bats was detected. Barn B and the trees within the site boundary are assessed to be of ‘negligible’ suitability for use by roosting bats.
- 4.4.3 No evidence to indicate that the site is used by a roost of a high conservation significance as defined by Figure 4 of the *Bat Mitigation Guidelines* (Mitchell-Jones, 2004)<sup>6</sup> has been found. The buildings do not have any underground features or cellars and the structural condition is not likely to provide thermally stable conditions for regular / long-term use by roosting bats in the hibernation season.
- 4.4.4 In the absence of mitigation, the demolition works will disturb bats and will permanently destroy Roosts A to I.
- 4.4.5 Works at the farmhouse and Barn A must only be carried out under a relevant Natural England European Protected Species Mitigation licence issued under Regulation 55 of *The Conservation of Habitats and Species Regulations 2017* (as amended). It is advised that appropriate mitigation in accordance with relevant Natural England guidance and licensing requirements is entirely feasible within the remit of the proposals. A Bat Mitigation Strategy is outlined at **Section 5.3** and the strategy details the measures to be applied to ensure bats are protected during the proposed works and also to ensure there is no net loss of roosting opportunity at the site in the long-term and that habitats remain suitable for use by roosting bats as a consequence of the proposed development.
- 4.4.6 As the vegetation removal is minimal, the proposals will not sever or fragment habitats suitable for use by roosting bats.
- 4.4.7 In consideration of post-development interference impacts, the site will be occupied by one family at the post-development stage (as the farmhouse is at the baseline). Subject to the avoidance lighting and / or implementation of an appropriate lighting strategy as recommended at **Section 5.2**, there is minimal risk of an increase in disturbance to roosting / foraging bats associated with human activity at the property.
- 4.4.8 In accordance with the *Bat Mitigation Guidelines* (Mitchell-Jones, 2004), the destruction and modification of day roosts used by a low number of common and widespread<sup>7</sup> species of bat is a low scale impact.

<sup>6</sup> i.e. no signs of a maternity roosts were detected

<sup>7</sup> The conservation statuses of brown long-eared, common pipistrelle, and relevant *Myotis* species (whiskered) are reported to be ‘favourable’ in the *European Community Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC) Fourth Report by the United Kingdom under Article 17 on the implementation of the Directive from January 2013*

## Other Animal Life

- 4.4.9 The buildings, scattered trees and shrubs within the site and on the site boundaries provide suitable habitat for nesting and foraging passerine (perching) bird species, including Priority Species. Mandatory actions to protect nesting birds during site clearance and measures to provide enhanced opportunities for nesting birds are described at **Sections 5.2** and **5.3**. It is advised that these measures will ensure there is no net loss of bird species diversity at the site and local area.
- 4.4.10 In the presence of the reasonable avoidance measures described in **Section 5.3** the risk of adverse impacts on other protected species and Priority Species such as common toad and hedgehog is minimised.
- 4.4.11 Appropriate and proportionate survey effort and / or assessment, in accordance with standard survey guidelines has been applied to discount adverse effects on other relevant protected species. No further surveys for other protected species are necessary to support a planning application.

## 5.0 RECOMMENDATIONS AND ECOLOGICAL ENHANCEMENT

### 5.1 Introduction

- 5.1.1 The recommendations described below aim to ensure that the proposals are implemented in accordance with relevant wildlife legislation, Natural England guidance, the principles of the National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2021), local planning policy and best practice.
- 5.1.2 The recommendations address the impacts / constraints identified in **Section 4.0** and are appropriate and proportionate to the scale of the proposals.
- 5.1.3 In addition and where possible, opportunities to enhance the ecological interest and habitat connectivity and seek biodiversity gain through appropriate landscape planting and habitat creation have been identified to ensure compliance with Chapter 15, paragraph 180(d) of the NPPF which states:
- ‘opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate’.*
- 5.1.4 These recommendations aim to ensure that the development is implemented in accordance with relevant wildlife legislation, Natural England guidance, the principles of the National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2021), local planning policy and best practice.

### 5.2 Site Design

#### Provisions for Use by Roosting Bats

- 5.2.1 Refer to the Bat Mitigation Strategy at **Section 5.4**.

#### Appropriate Use of Lighting

- 5.2.2 In consideration of the presence of a bat roosts (to be conserved at the site) and paragraph 185(c) in Chapter 15 (conserving and enhancing the natural environment) of the NPPF which states that development should:

*“limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation”*

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to December 2018 (JNCC, 2018)

it is advised that any external lighting to be installed at the site must be minimised as much as possible.

- 5.2.3 Where external lighting is necessary the design must involve the use of appropriate products and screening, where necessary, to ensure no excessive artificial lighting shines over the recommended roost provisions and accesses (see **Section 5.4** below), the retained vegetation around the site margins and other habitats outside the curtilage of the residential property, as lighting overspill may deter use by wildlife such as foraging bats.

### Landscape and Habitat Creation

- 5.2.4 The *Site Plan as 'Proposed'* (SDA, 2023) illustrates the accommodation of the landscape and habitat creation measures at the site. The intention of the specifications is to provide habitat that is complementary to the habitats in the wider area, to compensate for the minor losses of vegetation, to provide habitat suitable for long-term use by foraging bats, nesting birds and invertebrates and to maximise habitat connectivity around the site. The proposals comprise:
- Planting of native boundary hedgerows (specification of a random mix of Hawthorn, Blackthorn, Hazel, Elder, Holly and Guelder Rose is recommended);
  - Areas of wildflower grassland with scattered trees and shrubs;
  - Creation of a surface water drainage pond designed for biodiversity with associated emergent vegetation; and
  - Opportunities for extensive tree, shrub and woodland planting to include native species that are complementary to the local area such as those listed in **Table 5.1** below and fruit trees that produce berries and blossom for the attraction of wildlife.

**Table 5.1: Suitable Native Species for Tree and Shrub Planting**

Scientific Name	Common Name	Scientific Name	Common Name
<i>Acer campestre</i>	Field Maple	<i>Prunus spinosa</i>	Blackthorn
<i>Corylus avellana</i>	Hazel	<i>Rosa arvensis</i>	Field Rose
<i>Crataegus monogyna</i>	Hawthorn	<i>Rosa canina</i>	Dog-rose
<i>Ilex aquifolium</i>	Holly	<i>Sambucus nigra</i>	Elder
<i>Malus sylvestris</i>	Crab Apple	<i>Sorbus aucuparia</i>	Rowan
<i>Prunus avium</i>	Wild Cherry	<i>Ulmus glabra</i>	Wych Elm
<i>Prunus padus</i>	Bird Cherry	<i>Viburnum opulus</i>	Guelder Rose

### Garden Landscape Design

- 5.2.5 It is recommended that the landscape planting within the more formal garden habitats to be created as part of the works is composed from native species and species known to be of value for the attraction of wildlife.
- 5.2.6 Use of shrubs and plants that are attractive to invertebrates in any borders and planters is recommended, suitable species comprise Lavender (*Lavandula*), *Hebe*, *Ceanothus*, Foxglove (*Digitalis purpurea*) and *Allium* species.
- 5.2.7 The use of native plant species and species known to be of value for the attraction of wildlife, including foraging bats, in the landscaping scheme is recommended. Appropriate plants comprise night-scented flowers; a list of suggestions is presented below.

**Table 5.2: Recommended Plants for Use in Gardens to Attract Bats<sup>8</sup>**

Flowers for Borders		Herbs
Aubretia (spring to early summer)	Mexican aster (summer to autumn)	Angelica
Candytuft (summer to autumn)	Michaelmas daisy	Bergamot (summer to early autumn)
Cherry pie (summer to autumn)	Night-scented stock (summer)	Borage (spring to early autumn)

<sup>8</sup> Extracted from the BCT publication '*Encouraging bats, A guide for bat-friendly gardening and living*' (Bat Conservation Trust, 2016).

Flowers for Borders		Herbs
Corncockle	Ox-eye daisy (summer)	Coriander (summer)
Cornflower	Phacelia (summer to autumn)	English marigolds
Corn marigold	Poached egg plant (summer)	Fennel (summer to early autumn)
Corn poppy	Primrose (spring)	Feverfew (summer to autumn)
Echinacea	Red campion (spring)	Hyssop (summer to early autumn)
English Bluebell (spring)	Red valerian	Lavenders
Evening primrose	Scabious (summer)	Lemon balm
Field poppies (summer)	St John's wort (spring)	Marjoram (summer)
Honesty (spring)	Sweet William (summer)	Rosemary (spring)
Ice plant 'Pink lady' (early autumn)	Tobacco plant	Sweet Cicely
Knapweed (summer to autumn)	Verbena (summer to autumn)	Thyme (summer)
Mallow (summer to autumn)	Wallflowers	

### Habitat Management Plan

- 5.2.8 The positive management of the retained and created habitats at the site and in the wider area (under the same ownership) to enhance their nature conservation value is encouraged. The preparation of a management plan can be secured by an appropriately worded planning condition.

### 5.3 Construction Environment Management Plan (CEMP) for Biodiversity

#### Introduction

- 5.3.1 To inform the demolition / site preparation and construction activities it is recommended that a Construction Environment Management Plan (CEMP) for Biodiversity is prepared and implemented. The CEMP for Biodiversity will describe the following actions / measures:

#### Protection of Lever Park BHS and Tree and Shrub Protection

- 5.3.2 No works, including the storage of construction materials must be carried out within the boundary of Lever Park BHS. If needed, the boundary of the BHS will be demarcated with temporary fencing.
- 5.3.3 Care must be taken to ensure that any trees or shrubs overhanging the access track from Rivington Lane are not snagged off by passing construction machinery.
- 5.3.4 During the construction phase, and where works will be carried out in proximity to the trees and shrubs to be retained, temporary protective demarcation fencing will be used to protect the trees and shrubs and their associated root protection zone. The fencing must extend outside the canopy of the retained trees and must remain in position until works are completed to ensure protection is provided throughout the construction phase.
- 5.3.5 The fencing will be installed in accordance with *BS5837:2012 Trees in Relation to Design, Demolition and Construction: Recommendations* (BSI, 2012).

#### Roosting Bats and Natural England Licensing

- 5.3.6 Implementation of the Bat Mitigation Strategy, as described in **Section 5.4** and the registration of the site under a Natural England European Protected Species Mitigation (EPSM) licence, is essential.

#### Nesting Birds

- 5.3.7 All wild birds are protected under the *Wildlife and Countryside Act 1981* (as amended) while they are breeding. It is advised that any works such as vegetation clearance / building demolition that will affect habitats suitable for use by nesting birds are scheduled to commence outside the bird nesting season. Commencement of works in the nesting season must be informed by a pre-works nesting bird survey, carried out by a suitably experienced ecologist. The bird breeding season typically extends between March to August inclusive.

- 5.3.8 If breeding birds are detected the ecologist will issue guidance in relation to the protection of the nesting birds in conjunction with the scheduled works. This may involve cordoning off an area of the site until the young birds have fledged.

#### **Dust Suppression, Incidents and Accidents**

- 5.3.9 The risk of adverse effects on habitats surrounding the site as a result of dust, spills and leaks will be minimised by the application of best practice measures and appropriate environmental controls such as dust suppression, appropriate storage of chemicals and fuel, presence of spill kits and appropriate training of on-site personnel.

#### **Biosecurity**

- 5.3.10 To minimise the risk of introduction of invasive species to the site, all machinery / plant to be brought to the site must be clean. Wheels / tracks of machinery / plant must have been pressure washed before use at the site.
- 5.3.11 No excessive remnant soil or plant material from other sites must be present on the machinery / plant or in the tyre treads as this may increase the risk of spread of non-native and invasive plant species e.g. Japanese Knotweed (*Fallopia japonica*), Indian Balsam (*Impatiens glandulifera*) and Giant Hogweed (*Heracleum mantegazzianum*).

#### **Reasonable Avoidance Measures for the Protection of Hedgehog and Amphibians**

- 5.3.12 The following Reasonable Avoidance Measures Method Statement (RAMMS) will be applied prior to the construction phase of the development:
- a. Between the current time and the commencement of site clearance it is recommended that the current mowing regime at the grasslands is continued and / or the habitats are not permitted to grow dense or rank which may increase the opportunities for attraction of sheltering amphibians, mammals and other fauna. If this is not possible then arrangements must be made for the progressive flailing of the vegetation in the site prior to commencement of works on site;
  - b. All construction site personnel must be made aware of this RAMMS;
  - c. During works all arising waste must be either removed from the area or placed in a skip to avoid the accumulation of materials that may create suitable habitat and shelter for amphibians and other wildlife;
  - d. Any paving slabs / cobbles to be removed should be lifted carefully and searched for amphibians prior to full clearance;
  - e. During construction, bricks etc. must ideally be stored on pallets or raised from the ground in another suitable manner in order that no suitable habitat for amphibians / hedgehog is created;
  - f. Deep trenches / excavations must not be left open overnight. Trenches or holes must be fitted with a means of escape (such as ramped edge or a sloping plank of timber). This will ensure that any inquisitive animals do not become trapped;
  - e. Any pipes must be stored with caps on (to prevent animal entry);
  - f. No fires must be lit at the site;
  - g. The use of chemicals (such as fertilisers and herbicides) harmful to wildlife should be avoided wherever possible; and
  - h. If an amphibian species / hedgehog is detected on site, it must be carefully picked up, placed in a clean bucket and moved to an area of suitable habitat beyond the working area.

## 5.4 Bat Mitigation Strategy

### Natural England Licence

- 5.4.1 Once the planning permission is obtained, the works and destruction of Roosts A to I must only be carried out in the presence of an appropriate European Protected Species Mitigation (EPSM) licence issued by Natural England.
- 5.4.2 To achieve the licence / registration of the site the applicant must be able to demonstrate to Natural England that the following three tests of Regulation 55 of *The Conservation of Habitats and Species Regulations 2017* (as amended) will be satisfied.

**Test 1:** 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 [Regulation 55 (9)(b)];

**Test 2:** Demonstration that the proposals for which a licence is sought are for the purposes of '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' [Regulation 55(2)(e)]; and

**Test 3:** Consideration of '*There is no satisfactory alternative*' including the implications of the '*do-nothing*' option [Regulation 55(9)(a)].

- 5.4.3 The Bat Mitigation Strategy outlined below aims to demonstrate that compliance with Test 1 and demonstrates how bats will be accommodated at the site and is considered to be appropriate to inform the planning decision. Tests 2 and 3 are also considered.

### Resources

- 5.4.4 This mitigation strategy draws on the following resources:
- Current Natural England guidance;
  - Information presented in the *BCT Mitigation Conference Proceedings* (Bat Conservation Trust, 2017) and the *Mitigation Case Studies Forum* (Bat Conservation Trust, 2017);
  - Implemented and monitored activities / specifications carried out by ERAP (Consultant Ecologists) Ltd at other sites / properties;
  - UK Bat Mitigation Guidelines 2023* (Reason, P.F. and Wray, S., 2023); and
  - Information presented on the 'Roost' website provided by the Bat Conservation Trust.

### Survey Validity

- 5.4.5 The bat survey data collated between 2020 and 2023 will remain valid to support a Natural England licence application / site registration until Summer 2024; if works are scheduled to commence after this date a supplementary survey may be required.

### Licensed Works

- 5.4.6 The licensed works comprise actions that will directly affect (or have the risk of impacting) the detected roosts only. Where there is no risk of an offence under wildlife legislation other works can be carried out outside the licence, as required, subject to consideration of nesting birds, planning guidelines and restrictions imposed by the planning consent.

## Provisions for Use by Roosting Bats

### ***Compensatory Provision to be Provided Prior to Works***

- 5.4.7 Prior to the commencement of licensed actions and to ensure there is no net loss of roost opportunity at the site, and to ensure a suitable feature is present at the site to receive any bats found during the works, nine bat boxes (one for each roost) will be installed on suitable trees within the site and the wider area.
- 5.4.8 Suitable box specifications are detailed below:



**Insert 1:** Schwegler 1FF and Greenwood Ecohabitat's single cavity bat boxes

### ***Roost Provisions to be Installed During Works***

*Compensatory Provision for Loss of Common Pipistrelle Day Roosts (Roosts B, C, E, F, G, H and I) and Myotis Day Roost (Roost A)*

- 5.4.9 To provide a long-term provision at the property for common pipistrelle and Myotis bats bat access panels will be installed on the southern and northern elevations of the building. The detailed specification is provided at **Figure 5**.

*Compensatory Provision for Loss of Roost D: Brown Long-eared Bat Day Roost*

- 5.4.10 The roof void at the centre of the south facing roof pitch of the new building has been allocated as a roof void for use by brown long-eared bats (and *Myotis* species).
- 5.4.11 The dedicated void will be a maximum height of 3.024 metres and will achieve a width of 4.1 metres and a maximum length of 5.95 metres. Access for bats will be provided via a bat slate in the south-facing roof pitch, refer to **Figure 5**. It is essential that the underside of this section of roof supports roof timbers for bats to roost from and includes the Type 1F bitumen coated hessian backed undertile felt. Non-bitumen coated undertile felt (formerly breathable roofing membrane) not approved by Natural England will not be permitted in the bat loft owing to the risk of bat entanglement. The full details are provided on **Figure 5**.

### **Timing of Works**

- 5.4.12 Based on the type of roosts detected there is no restriction on the timing of works at the barn (subject to the absence of nesting birds; measures relating to the protection of nesting birds are presented at **Section 5.3**).

### **Toolbox Talk**

- 5.4.13 Prior to the commencement of works the licensed ecologist will inform all contractors of the following:
- The wildlife legislation and protection afforded to bats and their roosts;
  - The presence of the licence and the associated method statement and the need to abide by the content;



- c. The licensable actions;
- d. Good working practices (i.e. lifting (rather than sliding) of ridge copings and roof tiles and turning to check for the presence of bats before discard or stacking);
- e. The presence of any provisions for roosting bats installed in advance of the works and the need for them to remain undisturbed;
- f. The protocol to be followed if a bat is discovered when the licensed ecologist is not on site; and
- g. An outline of the proposals, including specific measures to be accommodated for bats and timescales.

### **Capture and Exclusion During Works**

- 5.4.14 Under the Natural England licence the roof coverings and other features suitable for use by roosting bats will be removed carefully by hand and under the supervision of the licensed ecologist. The underside of the roof slates and sheets will be checked for bats prior to discard or stacking.
- 5.4.15 If at any time during the works a bat is discovered or suspected when the licensed bat surveyor is not on site all contractors must withdraw from the area and ERAP (Consultant Ecologists) Ltd (01772 750502) or the Bat Conservation Trust must be contacted for further guidance.

### **Mechanism for Ensuring Implementation / Success**

- 5.4.16 If the licensed ecologist has any concerns regarding the quality of workmanship or there is non-compliance with the Natural England licence, the Mitigation Strategy and / or guidance provided by the licensed ecologist then this will result in additional site visits to make inspections.
- 5.4.17 It is always the intention to ensure all parties are aware of the importance of the Natural England licence and compliance with the Mitigation Strategy and this is achieved through good communication. However, in extreme / significant cases of non-compliance the licensed bat surveyor will report the issue to Natural England and further action may be taken.

### **Post-development Interference Impacts and Mitigation**

- 5.4.18 The risk of post-development interference impacts has been minimised by designing in the provisions for roosting bats in liaison with the architects and property owners and by providing guidance to the property owners on the protection afforded to bats and their roosts and nesting birds.

### **Consideration of Tests 2 and 3**

- 5.4.19 In consideration of the demonstration that the proposals are for imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment [Regulation 55(2)(e)] the following information is of relevance:
- a. The new property has been designed to meet the needs of the current owners and their family by providing a 'Home for the Future' and is designed to be suitable for current and future generations of the family;
  - b. The new building has been designed to maximise its sustainable credentials and, whilst meeting the needs of the family and meeting the restrictions of current planning policy will satisfy current building regulations; and
  - c. In addition, it is proposed to use local professional and construction resources during the works which will be of benefit to the local economy.
- 5.4.20 During the design of the site (which has occurred over a protracted 3 years period) a number of options were explored including the retention and extension / conversion of the farmhouse and Barn A. No options were considered to be feasible whilst working with the restrictions of planning policy and meeting the needs of the client. The creation of a series of linked buildings to create one property resulted in a segregated dwelling which did not meet the needs of the owner.

- 5.4.21 The demolition and re-build with the additional sustainable features (solar panels, rainwater harvesting and sustainable heating) in addition to the provisions for bats and the extensive landscape planting is considered to be the most appropriate and environmentally-friendly approach to meet the needs of the client that will also minimise the duration of impacts on bats and their habitats.
- 5.4.22 The 'do-nothing option' is not feasible as this would not enable the applicant and their family to meet their identified needs.

## 6.0 CONCLUSION

- 6.1 This ecological assessment has demonstrated that the redevelopment works at Top O'th' Hill Farm are feasible and acceptable in accordance with ecological considerations and the National Planning Policy Framework.
- 6.2 The comprehensive bat mitigation strategy outlined in **Section 5.4** demonstrates that mitigation for roosting bats and conservation of roosting and foraging opportunities at the site in the long-term is entirely feasible. The 'three tests' of *The Conservation of Habitats and Species Regulations 2017* (as amended) will be met and the appropriate Natural England licence will be obtained to facilitate the works.
- 6.3 Other actions for the protection of wildlife, namely amphibians, hedgehog and nesting birds, will be achieved by the works in accordance with wildlife legislation and best practice.

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## 8.0 APPENDIX 1: TABLES

### 8.1 Photographs

**Table 8.1: Photographs**

<p><b>Photo 1:</b> View of farmhouse (right), Barn A (centre) and Barn B (left)</p>	<p><b>Photo 2:</b> Barn A (left) and off-site Barn B (right)</p>
<p><b>Photo 3:</b> Garden to the south-west of the farmhouse with mown modified grassland</p>	<p><b>Photo 4:</b> Modified grassland along eastern margin of the site</p>
<p><b>Photo 5:</b> Track to the site from Rivington Lane entrance and mown improved grassland</p>	<p><b>Photo 6:</b> South-western elevation of the farmhouse</p>



**Photo 7:** North-eastern elevation of the farmhouse



**Photo 8:** South-eastern and north-eastern elevations of the farmhouse



**Photo 9:** South-eastern elevation showing gaps into roof void



**Photo 10:** Timber soffits and fascia at north-eastern elevation



**Photo 11:** Slate covered roof at the farmhouse showing highest points of void



**Photo 12:** Gaps at ridge copings at farmhouse



**Photo 13:** South-western elevation of the farmhouse



**Photo 14:** Roof void at farmhouse



**Photo 15:** Bat droppings in roof void at farmhouse



**Photo 16:** Brown long-eared bat in roof void at farmhouse [Roost D]



**Photo 17:** Brown long-eared bat (same bat as in Photo 16) in roof void at farmhouse [Roost D]



**Photo 18:** North-western elevation of Barn A



**Photo 19:** North-eastern and north-western elevations of Barn A



**Photo 20:** South-western and south-eastern elevations of Barn A



**Photo 21:** Gaps in stone work and roof verge at Barn A



**Photo 22:** Gaps in stonework at Barn A



**Photo 23:** Southern corner of Barn A



**Photo 24:** Interior of Barn A showing skylights and light interior



**Photo 25:** Underside of roof covering at Barn A



**Photo 26:** Interior of Barn A (ground floor)



**Photo 27:** Barn B (off-site)



**Photo 28:** Interior of Barn B (off-site)



**Photo 29:** NVA view of Farmhouse



**Photo 30:** NVA view of Farmhouse





**Photo 31:** NVA view of Farmhouse



**Photo 32:** NVA view of Barn A



**Photo 33:** NVA view of Barn A

## 8.2 Plant Species Lists

**Table 8.2: Plant Species List for Modified Grassland on Close Mown Lawn**

Scientific Name	Common Name	DAFOR <sup>1</sup>	Cover
<i>Agrostis capillaris</i>	Common Bent	A	30%
<i>Alopecurus pratensis</i>	Meadow Foxtail	LF	1%
<i>Dactylis glomerata</i>	Cock's-foot	VLA	1%
<i>Holcus lanatus</i>	Yorkshire-fog	A*	50%
<i>Hypochaeris radicata</i>	Common Cat's-ear	O	2%
<i>Poa trivialis</i>	Rough Meadow-grass	A	10%
<i>Prunella vulgaris</i>	Self-heal	F	1%
<i>Ranunculus repens</i>	Creeping Buttercup	A	10%
<i>Rubus fruticosus</i> agg.	Bramble	VLA	<1%
<i>Rumex acetosa</i>	Common Sorrel	O	<1%
<i>Rumex obtusifolius</i>	Broad-leaved Dock	O	<1%
<i>Trifolium repens</i>	White Clover	F	10%

<sup>1</sup>Key to DAFOR: D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare, V=Very, L=Local and \*denotes a constant species

**Table 8.3: Plant Species List for Modified Grassland on Along Northern and Eastern Margins**

Scientific Name	Common Name	DAFOR <sup>1</sup>	Cover
<i>Achillea millefolium</i>	Yarrow	F*	1%
<i>Agrostis capillaris</i>	Common Bent	F	15%
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	F	5%
<i>Arrhenatherum elatius</i>	False Oat-grass	VLA	1%
<i>Dactylis glomerata</i>	Cock's-foot	LF	10%
<i>Holcus lanatus</i>	Yorkshire-fog	A*	50%
<i>Lolium perenne</i>	Perennial Rye-grass	F	10%
<i>Poa trivialis</i>	Rough Meadow-grass	A*	20%
<i>Ranunculus acris</i>	Meadow Buttercup	O	<1%
<i>Ranunculus repens</i>	Creeping Buttercup	F	2%
<i>Rumex acetosa</i>	Common Sorrel	LF	1%
<i>Rumex obtusifolius</i>	Broad-leaved Dock	O	<1%
<i>Trifolium repens</i>	White Clover	VLA	1%

<sup>1</sup>Key to DAFOR: D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare, V=Very, L=Local and \*denotes a constant species

### 8.3 Raw Data from Bat Activity Surveys

**Table 8.4: Activity Survey 1, 10<sup>th</sup> August 2020, Sunset Time 20:50, Start Time 20:30**

#### Survey Position 1: Amy Sharples

Time	Species	Notes
21:05	Noctule	2 bats at height over site
21:08	<i>Myotis</i> species	1 emergence from behind timber fascia at south-western elevation of the farmhouse [Roost A]
21:18	<i>Myotis</i> species	1 emergence from behind timber fascia at south-western elevation of the farmhouse [Roost A]
21:19	<i>Myotis</i> species	1 emergence from behind timber fascia at south-western elevation of the farmhouse [Roost A]
21:33	Common pipistrelle	Heard but not seen
21:52	Common pipistrelle	Heard but not seen
21:58	Common pipistrelle	Heard but not seen

The Anabat Scout made the following recordings:  
 1 brown long-eared recorded at 21:50;  
 3 *Myotis* species call sequences between 21:19 and 21:24;  
 5 common pipistrelle call sequences between 21:16 and 21:52;  
 2 soprano pipistrelle call sequences at 21:46 and 21:51; and  
 5 noctule recordings between 21:05 and 21:09.

#### Survey Position 2: Sue Lonsdale

Time	Species	Notes
21:04	Noctule	Heard but not seen
21:15	Common pipistrelle	Foraging over grassland
21:19	<i>Myotis</i> species	In flight from east to west
21:24	Common pipistrelle	Heard but not seen
21:30	Common pipistrelle	Heard but not seen
21:32	<i>Myotis</i> species	Heard but not seen
21:32	Common pipistrelle	In flight from east to west
21:35	Common pipistrelle	Heard but not seen
21:52	Common pipistrelle	Heard but not seen

The Anabat SD2 made the following recordings:  
 3 *Myotis* species call sequences between 21:20 and 21:25;  
 5 common pipistrelle call sequences between 21:16 and 21:53; and  
 2 noctule recordings at 21:09.

#### Survey Position 3: Victoria Burrows

Time	Species	Notes
21:05	Noctule	Heard but not seen, distant call
21:18	Common pipistrelle	In flight from south to north
21:18	Common pipistrelle	1 bat emergence from beneath ridge coping at the farmhouse [Roost B]
21:23	Brown long-eared	1 bat emergence Roost D in the roof void via at gap beneath the ridge coping
21:34	Common pipistrelle	Heard but not seen
21:46	Soprano pipistrelle	Heard but not seen

The Anabat SD2 made the following recordings:  
 4 common pipistrelle call sequences between 21:18 and 22:17;  
 1 soprano pipistrelle call sequence at 21:46; and  
 4 noctule recordings between 21:05 and 21:09.

#### Survey Position 4: Aidan Pickering

Time	Species	Notes
21:10	Noctule	Heard but not seen
21:15	Common pipistrelle	In flight from north-east to south-west
21:20	Common pipistrelle	1 bat emergence from behind timber fascia at south-eastern elevation at Barn A [Roost C]

21:25	<i>Myotis</i> species	In flight from north-west to south-east
21:31	Common pipistrelle	In flight from north-east to south-west
21:52	Common pipistrelle	Foraging over grassland
The Anabat Express made the following recordings: 4 <i>Myotis</i> species call sequences between 21:25 and 22:08; 5 common pipistrelle call sequences between 21:15 and 21:52; and 5 noctule recordings between 21:04 and 21:08.		

#### Survey Position 5: Marie Pickering

Time	Species	Notes
21:04	Noctule	Heard but not seen
21:20	Common pipistrelle	In flight from south to north
21:55	Common pipistrelle	Heard but not seen
The Anabat Express made the following recordings: 6 <i>Myotis</i> species call sequences between 21:04 and 21:08; and 2 common pipistrelle call sequences at 21:09 and 21:35.		

**Table 8.5: Activity Survey 2, 29<sup>th</sup> August 2020, Sunrise Time 06:13, Start Time 04:25**

#### Survey Position 1 / 2: Amy Sharples

Time	Species	Notes
05:21	Common pipistrelle	Foraging over garden
05:41	Brown long-eared	In flight from south-east to north-west
The Anabat SD2 made the following recordings: 1 common pipistrelle call sequence at 05:21; and 1 brown long-eared recording at 05:41.		

#### Survey Position 3: Victoria Burrows

Time	Species	Notes
04:47	Common pipistrelle	Heard but not seen
05:39	Brown long-eared	1 bat entered <b>Roost D</b> at verge on north-west elevation
05:41	Brown long-eared	1 bat entered <b>Roost D</b> at verge on north-west elevation
The Anabat SD2 made the following recordings: 1 common pipistrelle social call sequence at 04:47.		

#### Survey Position 4: Aidan Pickering

Time	Species	Notes
		No bats observed

#### Survey Position 5: Marie Pickering

Time	Species	Notes
		No bats observed

**Table 8.6: Activity Survey 3, 19<sup>th</sup> August 2022, Sunrise Time 05:54, Start Time 04:09**

#### Survey Position 1: Victoria Burrows

Time	Species	Notes
04:51	Common pipistrelle	Briefly flying around the house
04:55	<i>Myotis</i> species	2 bats south of building
05:05	Common pipistrelle	Up to 4 bats circling building, particularly south-eastern elevations and roof
05:23	No echolocation	1 bat at south of building
05:32	Common pipistrelle	1 bat entered under fascia board at south-western elevation of the farmhouse [ <b>Roost H</b> ]
The Anabat Express made the following recordings: 5 <i>Myotis</i> species recordings between 04:58 and 05:14; and		

25 common pipistrelle call sequences between 04:14 and 05:31.

### Survey Position 2: Vincent Smith

Time	Species	Notes
04:25	Noctule	Heard but not seen
04:31	Common pipistrelle	In flight over site
04:48	Common pipistrelle	Up to 4 bats flying around south-east elevation
05:01	Brown long-eared	1 bat entered at ridge coping near chimney at south-eastern elevation of farmhouse <b>[Roost D]</b>

The Anabat Scout made the following recordings:  
 2 common pipistrelle call sequences at 04:51 and 05:11.

### Survey Position 3: Sue Lonsdale

Time	Species	Notes
04:45	Common pipistrelle	Heard but not seen
04:52	Common pipistrelle	Heard but not seen
04:57	Common pipistrelle	Foraging over building
05:05	Common pipistrelle	Heard but not seen
05:07	Common pipistrelle	Heard but not seen
05:14	Common pipistrelle	Inspecting gable
05:15	Common pipistrelle	1 bat entered gap at verge on north-western elevation of the farmhouse <b>[Roost E]</b>
05:22	Brown long-eared	1 bat entered at ridge coping at farmhouse <b>[Roost D]</b>

The Anabat Scout made the following recordings:  
 19 common pipistrelle call sequences between 04:13 and 05:13.

### Survey Position 4: Rachel Brown

Time	Species	Notes
04:42	Common pipistrelle	Foraging at building
04:44	Common pipistrelle	Foraging at building
04:48	Common pipistrelle	Foraging at building
05:18	Common pipistrelle	Foraging at building
05:23	Common pipistrelle	1 bat entered gap in stonework at south-western gable of Barn A <b>[Roost F]</b>
05:30	Common pipistrelle	1 bat entered gap in stonework at south-western gable of Barn A <b>[Roost F]</b>

The Anabat Scout made the following recordings:  
 1 *Myotis* species recording at 05:23;  
 1 noctule recording at 05:35; and  
 59 common pipistrelle call sequences between 04:19 and 05:29.

### Survey Position 5: Rachel Platt

Time	Species	Notes
04:31	Common pipistrelle	In flight from south-east to north-west
04:47	Noctule	Heard but not seen
04:52	Common pipistrelle	Heard but not seen
04:57	Common pipistrelle	Heard but not seen
05:36	Noctule	In flight over site from north to south

The Anabat Express made the following recordings:  
 10 common pipistrelle call sequences between 04:14 and 05:11; and  
 1 noctule recording at 05:35.

**Table 8.7: Activity Survey 4, 2<sup>nd</sup> September 2022, Sunset Time 19:59, Start Time 19:40**
**Survey Position 1: Marie Pickering**

Time	Species	Notes
20:11	Common pipistrelle	1 bat emerged from gap below the lintel above window on the south-western elevation of the farmhouse [Roost G]
20:12	Common pipistrelle	1 bat emerged from gap below the lintel above window on the south-western elevation of the farmhouse [Roost G]
20:22	Common pipistrelle	1 bat emerged from beneath fascia on the south-western elevation of the farmhouse [Roost H]
20:28	Common pipistrelle	1 bat emerged from beneath fascia on the south-western elevation of the farmhouse [Roost H]
20:28	Common pipistrelle	1 bat emerged from gap above door under porch on south-western elevation [Roost I]
20:52	Common pipistrelle	Heard but not seen
21:16	Common pipistrelle	Heard but not seen
The Anabat Express made the following recordings: 4 brown long-eared recordings between 20:27 and 21:39; 6 <i>Myotis</i> species recordings between 20:47 and 21:29; 8 Noctule recordings between 20:16 and 20:56; 31 common pipistrelle call sequences between 20:11 and 21:36; and 1 soprano pipistrelle call sequence at 21:33.		

**Survey Position 2: Danielle Rowlands**

Time	Species	Notes
20:16	Noctule	Heard but not seen
20:19	Noctule	In flight over site from south-west to north-east
20:20	Common pipistrelle	In flight over site from south to north
20:26	Noctule	Heard but not seen
20:28	Brown long-eared	1 bat emerged from gap at ridge coping behind chimney stack [Roost D]
20:45	Common pipistrelle	Foraging over hard standing
20:52	Common pipistrelle	Heard but not seen
20:53	Common pipistrelle	Heard but not seen
21:05	Common pipistrelle	Heard but not seen
21:15	Common pipistrelle	Heard but not seen
21:17	Common pipistrelle	Heard but not seen
21:21	Common pipistrelle	Heard but not seen
21:24	Common pipistrelle	Heard but not seen
21:27	Common pipistrelle	Heard but not seen
The Anabat Scout made the following recordings: 26 common pipistrelle call sequences between 20:44 and 21:24; and 2 noctule recordings at 20:26 and 20:55.		

**Survey Position 3: Amy Sharples**

Time	Species	Notes
20:11	No echolocation	1 bat emerged from verge on north-west elevation [Roost D]
The Anabat Express made the following recordings: 3 brown long-eared recordings between 20:55 and 21:26; 1 <i>Myotis</i> species recording at 20:53; 2 noctule recordings at 20:15 and 20:17; 18 common pipistrelle call sequences between 00:20 and 21:29; and 1 soprano pipistrelle call sequence at 20:47.		

**Survey Position 4: Aidan Pickering**

Time	Species	Notes
20:16	Noctule	Distant, heard but not seen
The Anabat Scout made the following recordings: 4 <i>Myotis</i> species recordings between 20:52 and 21:21; 56 common pipistrelle call sequences between 20:11 and 21:33; and 6 noctule recordings between 20:15 and 20:55.		

### Survey Position 5: Charlotte Walsh

Time	Species	Notes
		No emergence detected.
The Anabat Scout made the following recordings: 1 <i>Myotis</i> species recording at 21:21; 14 common pipistrelle call sequences between 20:44 and 21:24; and 2 noctule recordings at 20:26 and 21:24.		

**Table 8.8: Activity Survey 5, 22<sup>nd</sup> August 2023, Sunset Time 20:24, Start Time 20:06**

### Survey Position 1: Marisa Hensey

Time	Species	Notes
20:26	Common pipistrelle	1 bat emerged from gap above door under porch on south-western elevation [Roost I]
20:27	Common pipistrelle	1 bat emerged from gap below the lintel above window on the south-western elevation of the farmhouse [Roost G]
20:42	Common pipistrelle	Foraging over building
20:43	Common pipistrelle	1 bat emerged from behind the fascia at south-western elevation of the farmhouse [Roost H]
20:45	Common pipistrelle	1 bat emerged from gap behind fascia at south-western elevation of the farmhouse [Roost H]
20:46	Common pipistrelle	1 bat emerged from gap below the lintel above window on the south-western elevation of the farmhouse [Roost G]
20:49	Common pipistrelle	Foraging over garden
20:54	Common pipistrelle	Foraging over garden
The Anabat Scout made the following recordings: 2 <i>Myotis</i> species recordings at 21:16 and 21:20; 31 common pipistrelle call sequences between 20:26 and 21:53; and 1 noctule recording at 21:46.		

### Survey Position 2: Sue Lonsdale

Time	Species	Notes
20:45	Common pipistrelle	1 bat emerged from behind the fascia at south-western elevation of the farmhouse [Roost H] (same as recorded by Surveyor 1)
20:51	Common pipistrelle	In flight from north-east to south-west
21:14	Common pipistrelle	Heard but not seen
21:16	Common pipistrelle	Heard but not seen
The Anabat Scout made the following recordings: 2 <i>Myotis</i> species recordings at 21:16 and 21:20; 62 common pipistrelle call sequences between 20:45 and 21:45; and 2 noctule recordings at 21:16 and 21:20.		

### Survey Position 3: Amy Sharples

Time	Species	Notes
		No emergence detected.
The Anabat Scout made the following recordings: 1 <i>Myotis</i> species recording at 20:51; 47 common pipistrelle call sequences between 20:44 and 21:41; and 1 noctule recording at 19:46.		

#### Survey Position 4: Vin Greenhall

Time	Species	Notes
20:26	Common pipistrelle	In flight from north-west to south-east
21:03	Common pipistrelle	In flight over site
21:06	<i>Myotis</i> species	In flight over site
21:14	Common pipistrelle	In flight over site
21:16	<i>Myotis</i> species	In flight over site
21:19	<i>Myotis</i> species	In flight over site
21:22	<i>Myotis</i> species	In flight over site
21:26	Common pipistrelle	In flight over site
21:27	Common pipistrelle	In flight over site
21:34	Common pipistrelle	In flight over site
21:37	Common pipistrelle	In flight over site
21:40	Common pipistrelle	In flight over site
21:42	Common pipistrelle	In flight over site
21:45	Common pipistrelle	In flight over site
21:54	Common pipistrelle	In flight over site
The Anabat Scout made the following recordings: 12 <i>Myotis</i> species recordings between 20:50 and 21:21; 98 common pipistrelle call sequences between 20:26 and 21:57; and 2 noctule recordings between 21:39 and 21:46.		

#### Survey Position 5: Anabat Express

Time	Species	Notes
		No emergence detected
The Anabat Express made the following recordings: 1 <i>Myotis</i> species recording at 21:18; and 38 common pipistrelle call sequences between 21:14 and 21:53.		

**Table 8.9: Activity Survey 6, 5<sup>th</sup> September 2023, Sunset Time 19:52, Start Time 19:35**

#### Survey Position 1: Ian Nelson

Time	Species	Notes
20:00	Common pipistrelle	1 bat emerged from <b>Roost H</b> under gutter on the south-western elevation of the farmhouse
20:11	Common pipistrelle	1 bat emerged from <b>Roost I</b> above door under porch on south-west elevation
20:20	Common pipistrelle	Heard but not seen
20:24	Common pipistrelle	Heard but not seen
The Anabat Scout made the following recordings: 3 <i>Myotis</i> species recordings between 20:35 and 20:55; and 13 common pipistrelle call sequences between 20:00 and 21:17.		

#### Survey Position 2: Leah Hart

Time	Species	Notes
		No emergence detected.
The Anabat Scout made the following recordings: 2 <i>Myotis</i> species recordings at 20:22 and 20:55; and 6 common pipistrelle call sequences between 20:09 and 21:16.		

#### Survey Position 3: Marisa Hensey

Time	Species	Notes
20:09	Common pipistrelle	Heard but not seen
20:34	Common pipistrelle	In flight from south-west to north-east
The Anabat Scout made the following recordings: 1 <i>Myotis</i> species recording at 20:33; and 8 common pipistrelle call sequences between 20:22 and 21:17.		



#### Survey Position 4: Catie Haworth

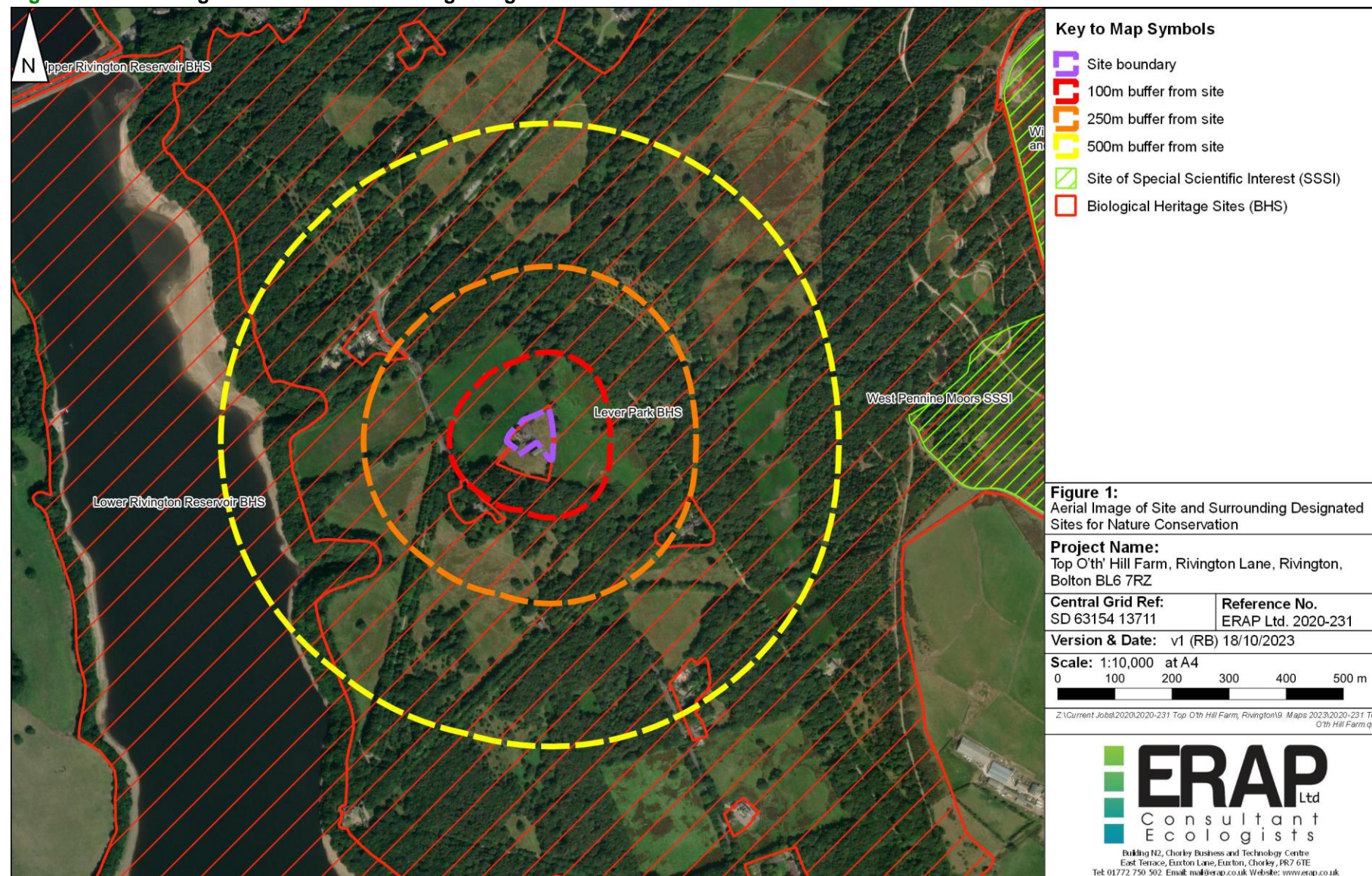
Time	Species	Notes
20:20	Common pipistrelle	1 bat emerged from gap in stone wall / beneath the fascia on south-eastern elevation of Barn A [Roost C]
21:00	Common pipistrelle	Heard but not seen
21:02	Common pipistrelle	Heard but not seen
The Anabat Scout made the following recordings: 6 common pipistrelle call sequences between 20:20 and 21:16.		

#### Survey Position 5: Amy Sharples

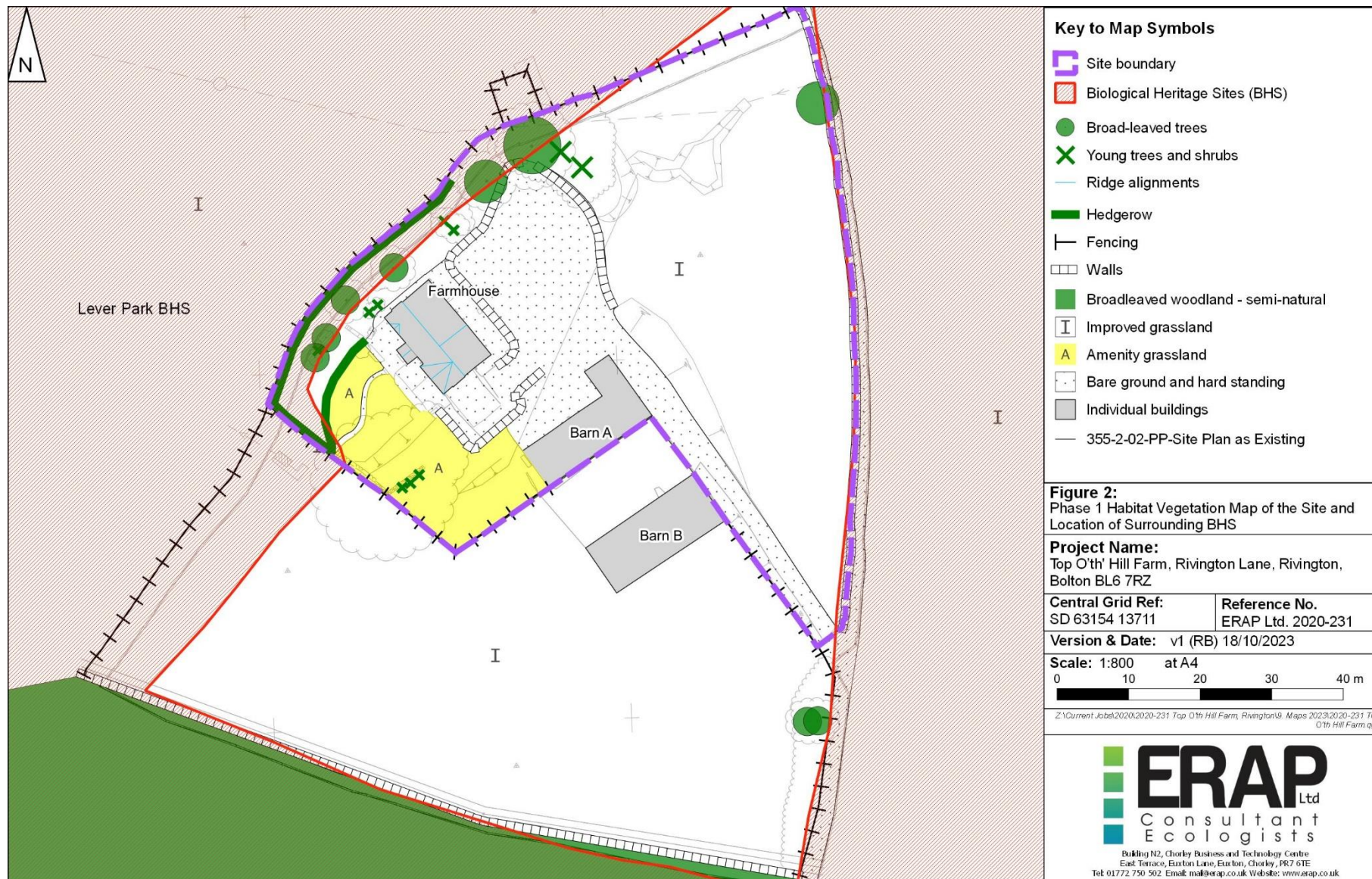
Time	Species	Notes
		No emergence detected.
The Anabat Scout made the following recordings: 4 common pipistrelle call sequences between 20:52 and 21:16.		

**9.0 APPENDIX 2: FIGURES**

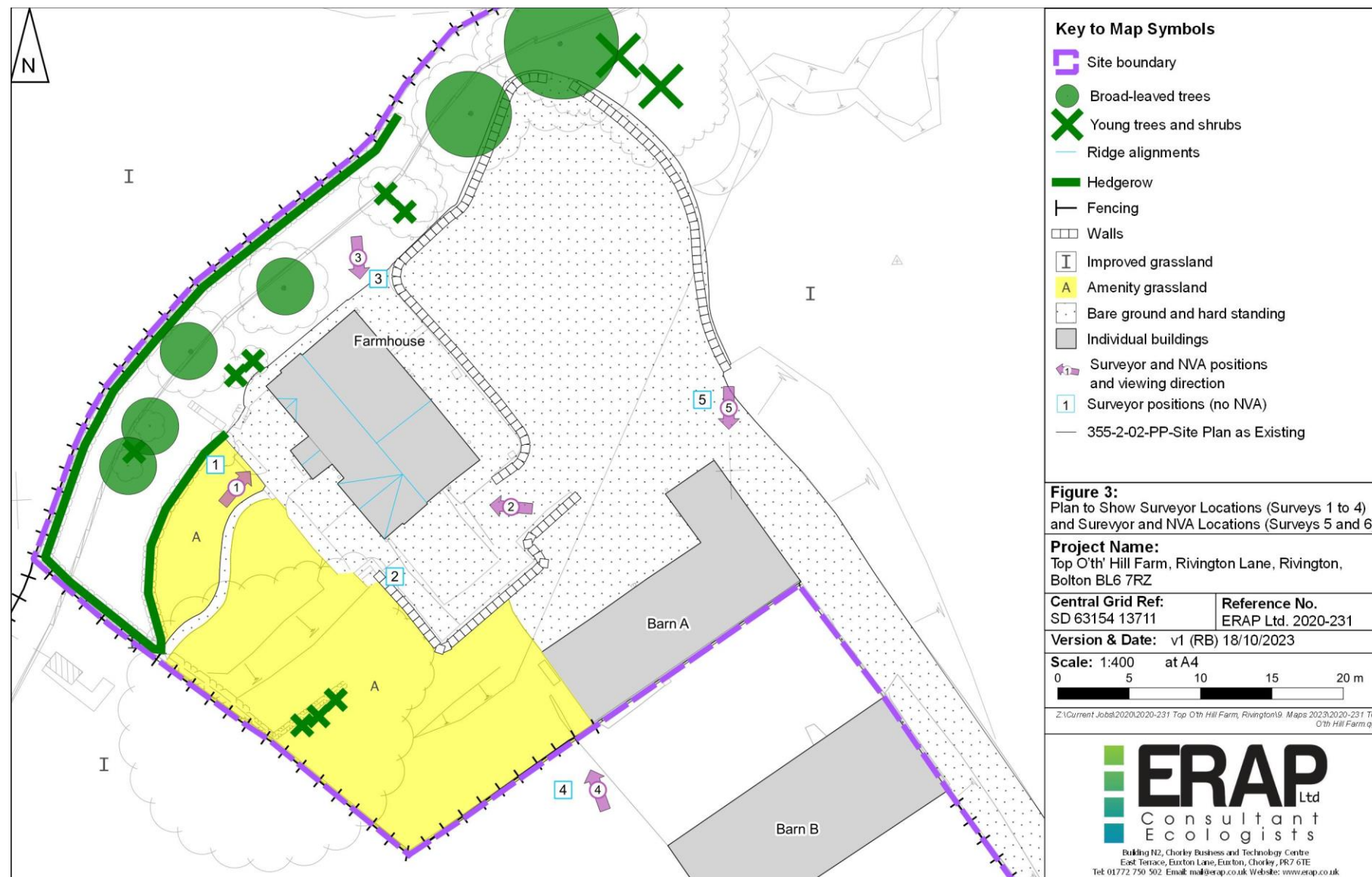
**Figure 1: Aerial Image of Site and Surrounding Designated Sites for Nature Conservation**



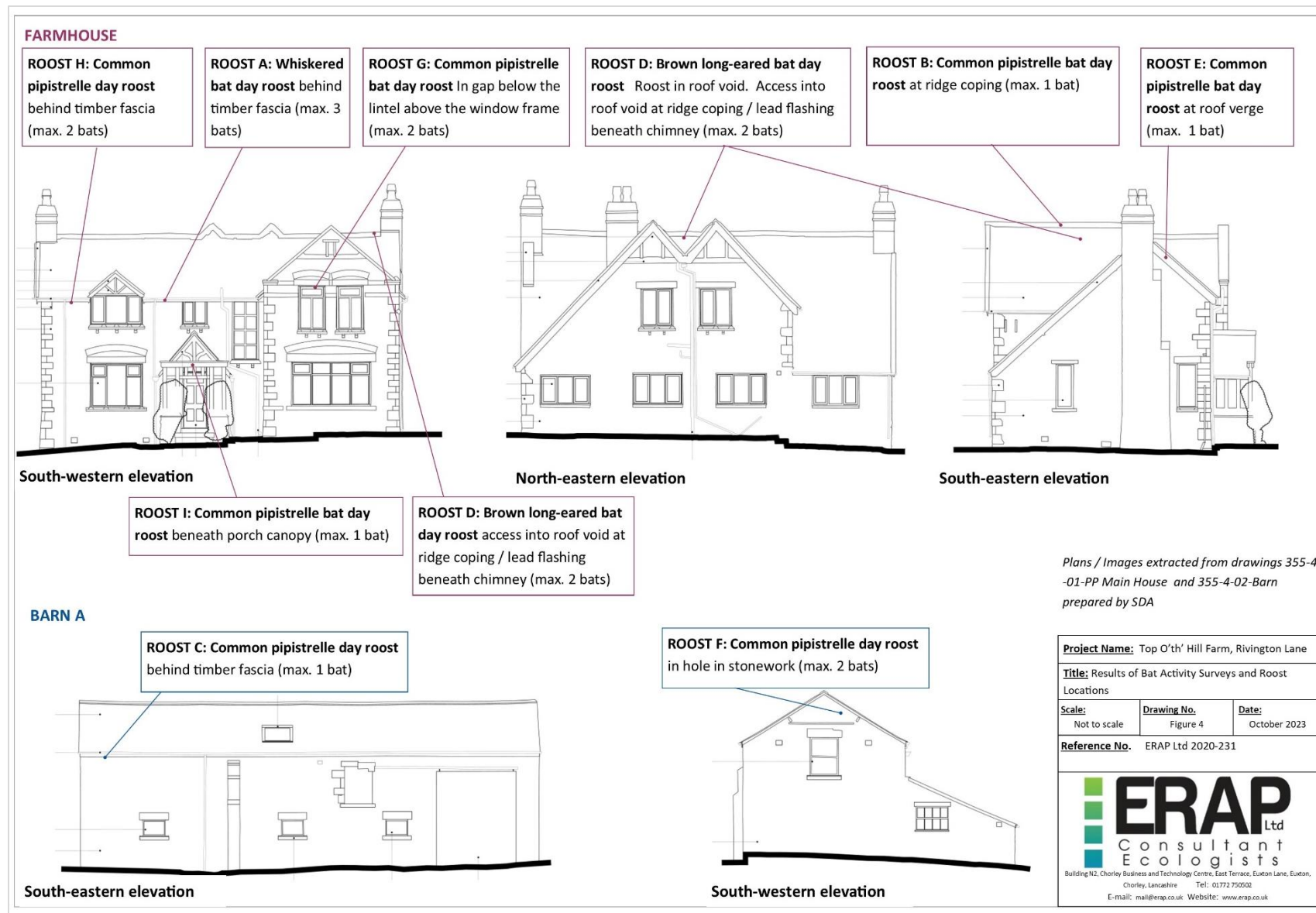
**Figure 2: Phase 1 Habitat and Vegetation Map**



**Figure 3: Plan to Show Surveyor Locations (Surveys 1 to 4) and Surveyor and NVA Locations (Surveys 5 and 6)**



**Figure 4: Results of Bat Activity Surveys and Roost Locations**



**Figure 5: Bat Mitigation Strategy**

