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Client Name:	**Holyhead**
Site Address:	**Brookside Farm Barns** **Clover Cottage** **Pontesford** **Shropshire** **SY5 0UQ**
Report Reference:	**RA 23-07 151.2**
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	Name	**Date**
Author:	B. Jones BSc(hons) MSc MCIEEM **Senior Consultant**	2nd October 2023
Reviewed by:	L. Maggs BSc(hons) **Senior Consultant**	4th October 2023
Amended by:	B. Jones BSc(hons) MSc MCIEEM **Senior Consultant**	7th November 2023

Greenscape Environmental Ltd.
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Company Reg number: 5364283

The report should be read in its entirety. Questions arising from the survey report should be directed to the author of the report who will be pleased to clarify any technical issues raised.

Whilst the surveyors make every reasonable effort, Greenscape Environmental Ltd cannot guarantee that all protected species have been identified and survey results are definitive. Many species are cryptic and transitional in habit.

Reports are considered valid for two years for planning purposes, after which time further survey information may be required.

Greenscape Environmental Ltd can provide advice and support for recommendations and planning conditions.

The use of this report or survey data for any form of formal submission to an NGO or other authority implicitly implies acceptance of the terms and conditions.

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1 Executive Summary

1.1 Purpose of the Report

Greenscape Environmental Ltd was commissioned by Mr S Holyhead to undertake a roost assessment of barns at Brookside Farm to provide updated information for a planning application for the conversion of the buildings. The site was previously surveyed in 2014 by Churton Ecology, and this report aims to update the ecological understanding of bat roosts on site.

The survey report has these principal aims:

- To provide an initial assessment of the ecological value of the site in local context.
- To identify potential ecological constraints relating to the development, and recommend measures to avoid, reduce or manage negative effects, and to provide a net ecological gain.

1.2 Methodology

The appraisal included a desktop study for nearby designated sites and previously recorded protected species and a site visit undertaken at the site, OS grid reference SJ41030637 on 15th August 2023. Bat activity surveys were conducted on 15th August, 31st August and 14th September 2023.

1.3 Key Impacts and Mitigation Measures

The site comprises two barns, both of which supported roosting bats.

Barn 1 supported peak counts of one soprano pipistrelle and one lesser horseshoe bat.

Barn 2 supported peak counts of seven brown long-eared bats, three lesser horseshoe bats, one Natterer's bat and one soprano pipistrelle.

Work on both buildings must be done under licence from Natural England. As two cavity dwelling species (Lesser horseshoe bats and brown long-eared bats) were recorded roosting on site, a bat loft will be required. This will have different access types specifically catering to the two species identified. The bat loft has previously been approved over a new garage building and this will be the same here.

1.4 Conclusion

The method statements and compensation provided in sections 6.3 and 6.4 of this report will be followed and works will be done at a suitable time of year under suitable licence. Other than those listed above, there are no ecological constraints to the development as currently proposed.

2 Introduction

This report has been compiled by Ben Jones BSc (hons) MSc who has 8 years' experience conducting ecological appraisals. It has been reviewed in line with Greenscape's Quality Management System.

For full details of surveyors and licences please see Appendix A.

2.1 Project Background

Greenscape Environmental Ltd was commissioned by Mr S Holyhead to conduct a survey to determine the presence of protected species and potential for the damage or destruction of habitats of value. This forms part of the planning application for the conversion of both barns on site at Brookside Farm.

The site was previously surveyed in 2014 by Churton Ecology.

2.2 Purpose of the Report

This report aims to:

- Identify the key ecological constraints to the proposed development relating to priority habitats and species and protected species (HMSO, 1981).
- Inform planning to allow significant ecological effects to be minimised or avoided where possible.
- Allow any necessary mitigation or compensation measures to be developed following the mitigation hierarchy.
- Identify any additional surveys that may be required to inform the assessment.
- Identify the opportunities offered by a project to deliver ecological enhancement (Ministry of Housing, Communities and Local Government, 2021).
- Provide information to assist landowners with avoiding committing legal offences in relation to wildlife (HMSO, 2000)

2.3 Site Context and Location

The site is located in the eastern periphery of Pontesford, OS grid reference SJ41030637. It is set in a rural environment surrounded by the rest of Pontesford to the west, and open farmland beyond that and on other sides. Pontesford Brook lies 110m northeast which provides excellent connectivity to the surrounding land including Radlith Wood to the southeast.

3 Methodology & Constraints

Broad methodologies for data collection and interpretation were informed by PEA guidance (CIEEM, 2017). Full details can be found in Appendix B.

3.1 Desk Study

The desk study provides contextual information such as the site's proximity to designated areas and previously granted licences (Natural England, 2018). Previously recorded species in the vicinity are obtained from local records centres (NBN, 2023).

3.2 Field Survey

3.2.1 Date and Survey Conditions

Table 3.1. Survey conditions

Date	Time Start – End (Sunrise/set Time)	Equipment Used	Weather (Start/End)	
15/08/2023	19:30-22:45 (20:38)	Camera, strong torch, Anabat Scout, Wildlife Acoustics Echometer Touch 2 Pro, Skywatch Meteos anemometer, Sony FDR-AX33 & AX53 nightshot cameras each with 2x Nightfox XC5 IR torches, Binatone two-way radio, red LED torch	Temp(°C): Cloud(%): Wind(BFT): Peak gust (BFT): Rain:	19/18 90/75 0/0 0.3 0/0
Comments	Four surveyors used: Ben Jones, Logan Maggs, Chloe Sheil and Charlotte Grafton Constraints: None All undated photographs in this document were taken on this date by the author unless otherwise stated.			
31/08/2023	04:30-06:30 (06:20)	Anabat Scout, Wildlife Acoustics Echometer Touch 2 Pro, Skywatch Meteos anemometer, Sony FDR-AX33 & AX53 nightshot cameras each with 2x Nightfox XC5 IR torches, Binatone two-way radio, red LED torch	Temp(°C): Cloud(%): Wind(BFT): Peak gust (BFT): Rain:	13/13 100/100 0/0 0 0/0
Comments	Five surveyors used: Ben Jones, Logan Maggs, Chloe Sheil, Demi Cook, Phil Playford Constraints: None			
14/09/2023	19:15-21:30 (19:30)	Anabat Scout, Wildlife Acoustics Echometer Touch 2 Pro, Skywatch Meteos anemometer, Sony FDR-AX33 & AX53 nightshot cameras each with 2x Nightfox XC5 IR torches, Binatone two-way radio, red LED torch	Temp(°C): Cloud(%): Wind(BFT): Peak gust (BFT): Rain:	17/16 100/100 0/0 0.7 0/0
Comments	Five surveyors used: Ben Jones, Logan Maggs, Chloe Sheil, Demi Cook, Amy Henson Constraints: None			

3.2.2 Habitats

The habitats on site were assessed for their potential to support protected species and therefore assist in the determination of site value.

The site had not been subject to any form of specific management, maintenance or cleaning and was in a natural redundant state. Unless it was a managed garden etc.

3.3 Species Survey

3.3.1 Bats

An assessment of the suitability of site to support roosting bats was conducted following best practice guidance looking for evidence of roosting or potential access points (Collins, J. BCT, 2023). There were no constraints to this methodology. Phase 2 surveys were conducted to confirm the presence/absence of any roosts, roost characterisation, access points and significance of the roosts.

The identification of calls and species using sonogram analyses are dependent on the clarity of the sonogram recording, which may be affected by the distance from the bat and background noise. Species of Myotis bats are identified to genus level on the basis of the inherent difficulty in distinguishing between species from their echolocation calls.

Automatic ID bat detectors were used on these surveys, and these have limitations as reported in Reason, Newson & Jones (2016). To eliminate this constraint, sonograms were manually verified.

3.3.2 Birds

An assessment of the suitability of site and its surrounds to support nesting birds was conducted, looking for current/old nests and listening for bird calls. There were no constraints to this methodology.

4 Baseline Ecological Conditions

4.1 Nearby Features of Importance

4.1.1 Designated Sites

The map from Natural England presented in Figure 4.1 indicated that the site is within the Shropshire Hills AONB and within 1km of one other designated area.

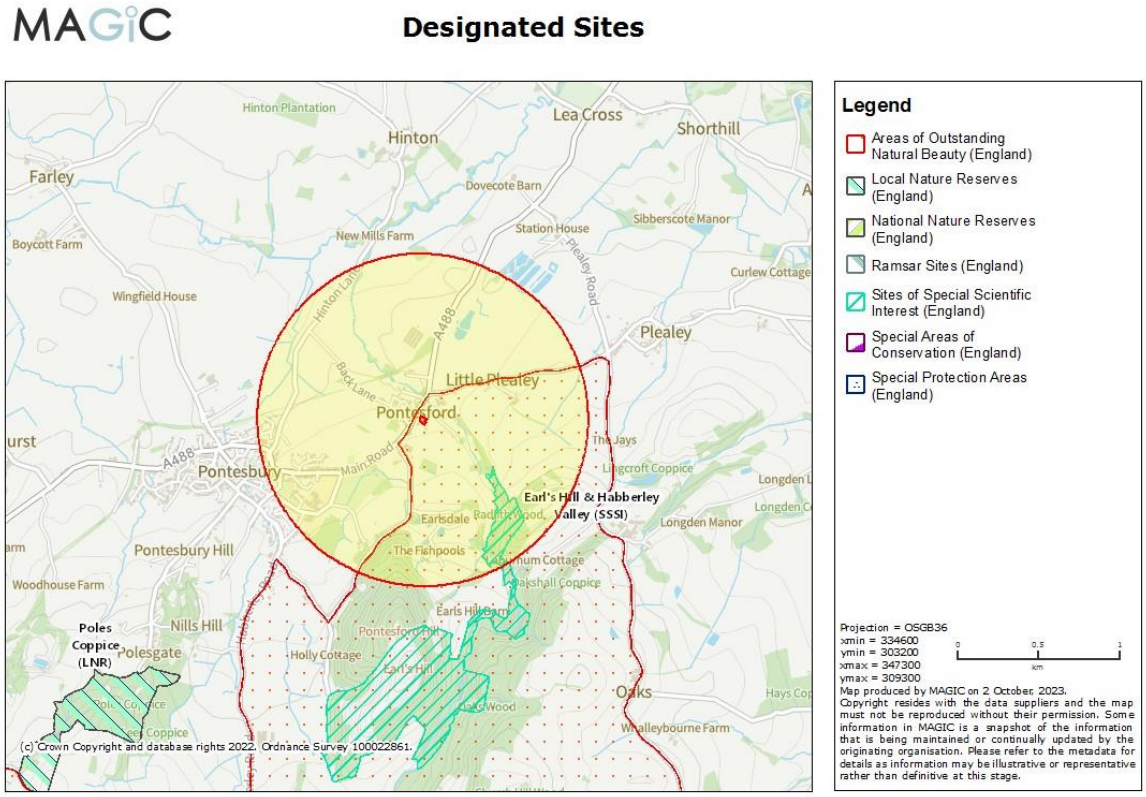

Figure 4.1. Identifying any designated areas near site, a 1km buffer is shown

Table 4.1. Details of statutory designated sites within 1km

Type of Designation	Site Name & Ref	Reason for Designation	Distance & Direction
Statutory - AONB	Shropshire Hills	Diverse landscape including moorland and valleys	n/a
Statutory - SSSI	Earl's Hill & Habberley Valley	Wide variety of habitat types and nationally important geological localities	550m southeast

The proposed development site is situated adjacent to a corridor according to the SEN. This is listed as a watercourse but is, in fact, a road.

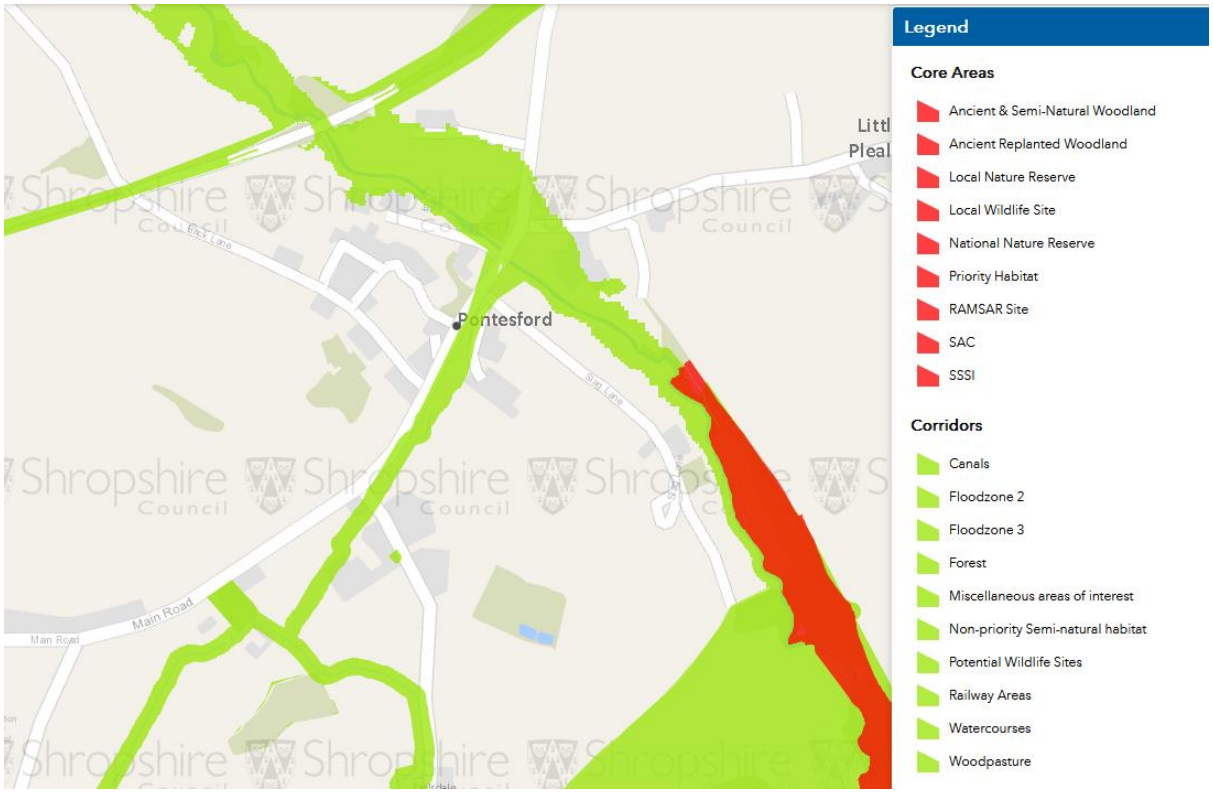

Figure 4.2. Shropshire Environmental Network map

4.1.2 Nearby European Protected Species Licences

The site is not within 2km of any previously granted EPS licences.

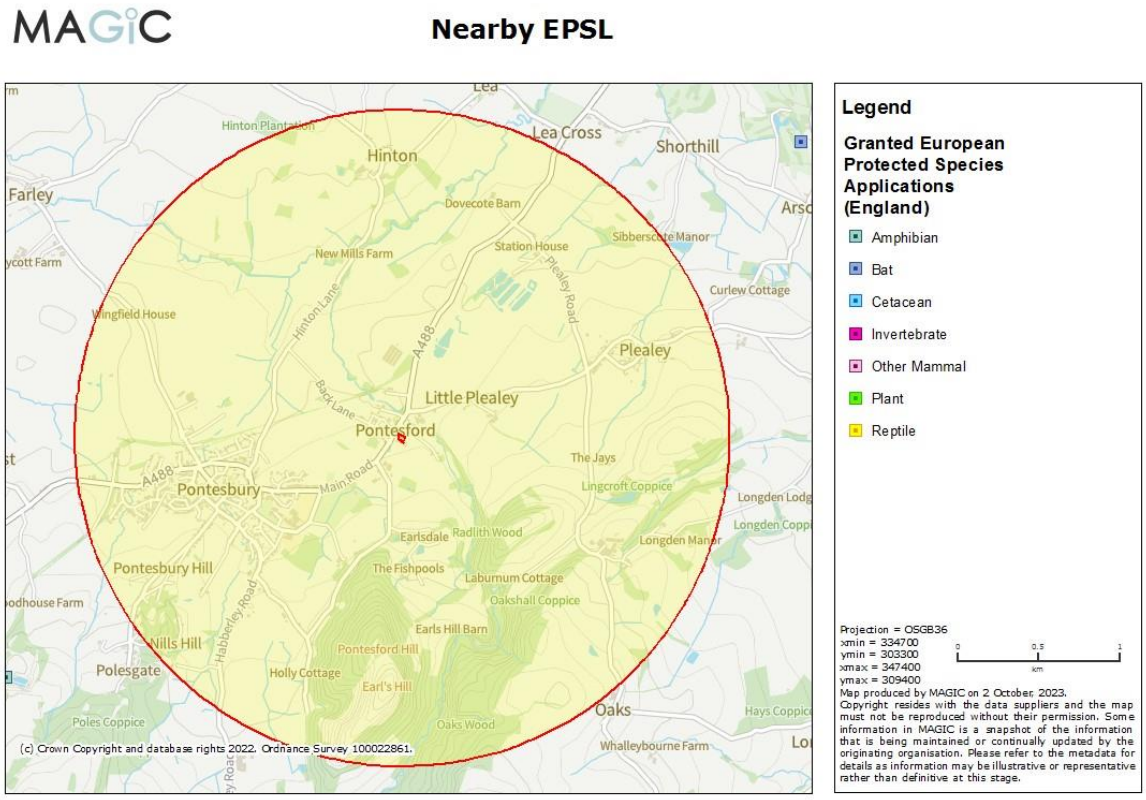

Figure 4.3. Identifying any previous EPS licences near site, a 2km buffer is shown

4.2 Habitats on Site

The site comprises two barns. Barn one is a simple rectangular building while barn 2 is an L-shape. Both are constructed of red brick with exposed timbers supporting mixed-material roofing. Roofing includes corrugated metal, cement-bonded fibreboard, clay tile and slate tile. The roof over barn 1 is unlined, whereas barn 2 roof is partially lined with bitumen hessian.

Figure 4.4. Barn ID

Figure 4.5. Barn 1 from southeast

Figure 4.6. Barn 1 from northeast

Figure 4.7. Barn 1 from south

Figure 4.8. Barn 2 from southeast

Figure 4.9. Barn 2 from northwest

Figure 4.10. Barn 2 east wing

Figure 4.11. Barn 2 north wing

4.3 Bats

4.3.1 Records

Records of bats within 2km include Daubenton's bat (*Myotis daubentonii*), whiskered (*M. mystacinus*), Natterer's bat (*M. nattereri*), noctule (*Nyctalus noctula*), common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*P. pygmaeus*), brown long-eared bat (*Plecotus auritus*) and lesser horseshoe bat (*Rhinolophus hipposideros*).

Bat species data was provided to the NBN Atlas by SEDN under CC-BY licence.

4.3.2 Field Observations

The site had previously been shown to support roosting bats in 2014.

During the site walkover prior to the initial bat survey in 2023, two lesser horseshoe bats were seen, one in each building. Fresh droppings were also identified in barn 2.

Figure 4.12. Droppings on timber (left) beneath open mortise joint (right)

Figure 4.13. Lesser horseshoe bat in barn 1

The activity surveys identified roosts throughout the site, summarised below and presented in greater detail in Appendix D.

Table 4.2. Evaluation of survey results

Structure	Species	Count	Roost Location	Site Status Assessment (e.g. maternity)	Conservation Significance
Barn 1	Lesser horseshoe	1	Second-floor roof space	Day	Low
	Soprano pipistrelle	1	Brickwork on western gable	Day	Low
Barn 2	Lesser horseshoe	3	Under mezzanine	Transitional	High
	Brown long-eared	7	Amongst roof timbers	Maternity	Moderate
	Whiskered / Brandt's	1	Western wall brick gap	Day	Low

4.4 Birds

4.4.1 Records

Records of birds within 2km include common passerine species such as blue tit (*Cyanistes caeruleus*) and house sparrow (*Passer domesticus*). All bird records are provided with low accuracy grid references and so specific locations cannot be determined.

Bird species data was provided to the NBN Atlas by SEDN under CC-BY licence.

4.4.2 Field Observations

There was old evidence of nesting birds in both buildings. Species such as swallow, wren and corvids appeared to have nested on site previously.

Figure 4.14. Corvid nest in barn 2

5 Description of Proposed Development

The current plans are for the conversion of both buildings including the construction of a new garage. This garage will support the bat loft.

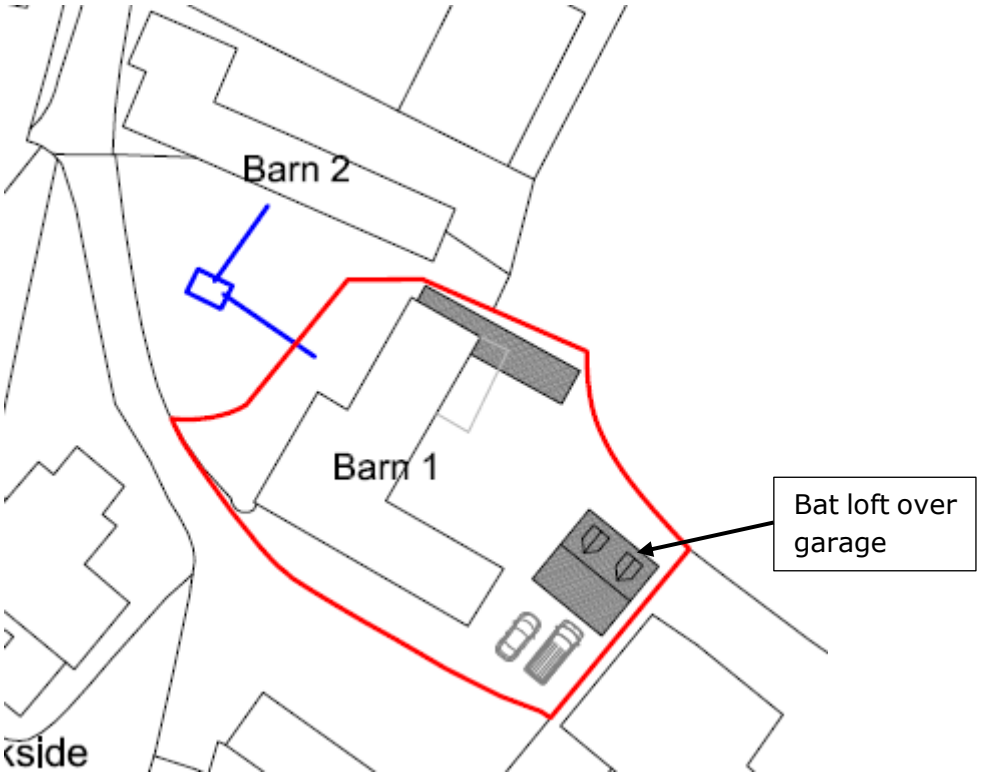

Figure 5.1. Bat loft location

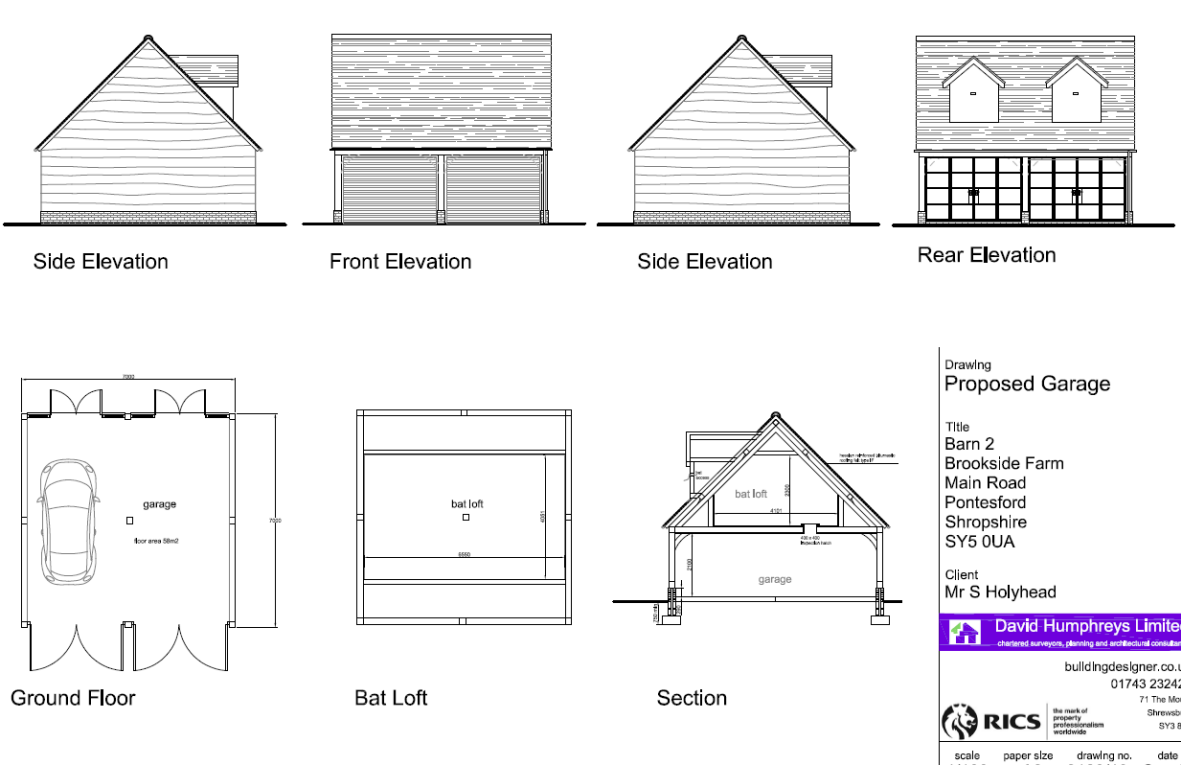

Figure 5.2. Bat loft design

6 Impacts, Enhancements and Mitigation

6.1 Nearby Features of Importance

Figure 4.1 shows that the site is within the AONB and the nearest SSSI is 550m from site. Whilst Figure 4.2 does show that the site is adjacent to a watercourse corridor this is not the case.

The site is small and conversion is a relatively low impact development. No impact on the SSSI 550m is anticipated and the general character of the landscape will not be affected, so no negative impact on the AONB is likely either.

6.2 Habitats on Site

The development as proposed will not result in the loss of any habitats of principal importance listed in Section 41 of the NERC Act (HMSO, 2006) and so mitigation will be delivered at a species level.

6.3 Bats

6.3.1 Impacts

The conversion of either or both buildings will see the loss of roosts of multiple bat species. This would constitute an offence under the current legislation and work must therefore be conducted under a mitigation licence from Natural England. This will include appropriate mitigation and compensation measures as outlined here.

There is a mixture of day roosts and small maternity roosts. Lesser horseshoes are an Annex II species and offered a greater level of protection and importance than the more common species which are still protected.

Using table 3.3 of the UK Bat Mitigation Guidelines 2023, the sites bat assemblage is of local importance, with a score of 8/26 (SPip, 1. BLE,1. Whiskered, 2. LHS, 4.) the assemblage does not meet the threshold for being of county importance (12/26) for a site in the Midlands.

Determination of conservation significance of roosts was taken from Table 4.2: Modification and disturbance impacts to roosts: simple examples (Reason & Wray, 2023).

6.3.2 Mitigation

Work which will need to be conducted under European Protected Species Licence from Natural England.

Table 6.1. Timing of works as recommended by the UK Bat Mitigation Guidelines (2023)

Roost type	Months to avoid	Optimum period for carrying out works (some variation between species and weather-dependent)
Maternity	May-August (potentially September)	September to end April
Hibernation (not used for swarming)	November to March	April to end October
Hibernation and swarming site	August to March (key); potentially July until April	April to July
Mating/swarming; not used for hibernation	August to October (key); potentially July until mid-November Also April-early May in at least some species	Mid-November – end March (potentially later, maybe species-specific) Broader restrictions if site also used for hibernation
Non-breeding summer roost	None	No restrictions – assuming bats can be excluded if present in small numbers or otherwise safely managed

EPSL Working Method Statement

1. Construction will need to follow a rigid method statement. It will need to be conducted under a European Protected Species Licence (EPSL)
2. A suitably licensed ecologist will be employed as an Ecological Clerk of Works (ECoW) to oversee works in areas sensitive to bats and provide expert advice.
3. The licence can only be applied for when full planning permission has been granted.
4. A toolbox talk will be provided by the ECoW. The developer and the contractors will be made aware that there is a possibility that bats may be found during works, and will be advised to work in a way to ensure bats are not harmed during work in areas sensitive to bats; particularly around the known roost locations. They will be provided with a simple emergency procedure to follow if bats are found at any stage of the work on site. It will be ensured that the method statement is retained on site at all times.
5. A pre-commencement check will be conducted by the ECoW using a strong torch and borescope where appropriate.
6. The work on Barn 2 will occur outside of the transitional roost timing, from November to the end of March
    a. Barn 1, only having individuals, will have much more flexibility with timings.
7. The ECoW will be present on site when work is being conducted in the area of the bat roost, particularly around the ridges, gables, hips, valleys and edges.
8. If a bat is found when the ECoW is not present, work will stop immediately and the ECoW contacted for advice.

9. The bat can only be handled by the ECoW or authorised person unless it is in immediate danger. The bat must be carefully placed in a well-ventilated lidded box with a small container (i.e. a plastic bottle lid) with water in it. The container must be kept in a quiet and safe place.

10. Care should be taken to avoid rousing the bat whilst transferring to a suitable location, such as a suitable roost box or alternative roost space that provides a safe, quiet environment with a stable cool temperature and relatively high humidity.

11. If the bat is underweight or injured it will be cared for by an experienced bat carer until such time that is it strong enough to be released into a suitable alternative replacement roost on site.

12. The bat compensation will be created following the instructions in the EPS method statement and the client will agree that any bat box erected must stay in place for a minimum of five years post-development.

13. The removal of the roof will not take place if the temperature has been below 6°C for four consecutive days and nights.

Lighting

Lighting needs to be designed to have minimal impact on bats and their commuting and foraging areas. This results in the recommended use of downlights and the horizontal spread of lighting to be kept to a minimum.

Where it is not possible to reduce the horizontal spread of light, a 2700°K to 3000°K LED light bulb is recommended, which will provide a warm white light. This range has the least impact on bats and invertebrates.

1. A lighting scheme will be drawn up in line with best guidance (ILP, 2023).

2. All newly proposed external lighting will be directed away from any vegetated boundary features to retain dark corridors for commuting bats.

3. There will be no direct illumination of any enhancement features erected for bats.

4. All domestic lighting will be orientated towards the ground and controlled by PIR (Passive Infra-red), set on a short timer.

Figure 6.1. Example external down light design

6.3.3 Compensation

Provision will be made for the three species of bats found roosting on site, with at least one feature per bat species.

A woodcrete bat box will be suitable to compensate for the loss of soprano pipistrelle day roosting sites. These will be erected at a height of 3-4 m and in a southerly, westerly or easterly facing direction.

Figure 6.2. Example woodcrete bat box: Schwegler 1FF & Beaumaris Bat Box Midi

Bat Loft

As a maternity roost of brown long-eared bats and day roosts of lesser horseshoe bats have been recorded in barn 2, the bat loft will require multiple access points to suit both species. The loft will provide space for pre-emergence flights and light sampling. The following specifications will be adhered to when designing the loft:

1. The total void volume will be at least 20m^3, recommended minimum dimensions are 4m wide, 5m long and 2m high to the peak of the roof.
2. Skylights will not be placed in a roof section designated as a bat loft.
3. The loft spaces will have a small access hatch, so they can be checked for bat activity but not used for storage.
4. Type 1F bitumen hessian felt (BS747) or TLX Batsafe Breather Membrane will be used as lining beneath the slates, so bats cannot come into contact with non-bitumastic modern breathable membranes.
5. Human access to the bat loft will be made by creating a 400x400mm access which will not allow the loft to be used for storage but allow site checks to be undertaken.
6. Roost opportunities will be made inside the loft by creating crevices with rough-sawn timber, these will have an entry gap of 15mm.
7. The loft space will be insulated between the floor and ceiling and not under the tiles. This is the best method to keep the area the correct temperature for bats in summer.
8. Monitoring the roost will be required in the years following completion of the project.
9. Bat access will be made into the loft including at least one each of the following:
    - Crawl-in accesses appropriate for brown long-eared bats
    - Fly-in accesses appropriate for lesser horseshoe bats.

Figure 6.3. Example crawl-in ridge and field tiles

Figure 6.4. Crawl-in access constructed of lead set in slate roof

10. The fly-in access hole will measure approximately 20cm x 30cm, and be situated between two rafters.

    - This is shown on the plans to be built into a dormer, such as the one shown below.

Figure 6.5. Fly-in dormer access external view

6.3.4 Monitoring

Any enhancements erected for bats will be monitored in the years following the completion of development to determine the level of success. This will be a requirement of the licence and will be at the cost of the developer.

6.4 Birds

6.4.1 Impacts

Work to convert the buildings will seal them and block access for nesting birds which would be problematic if conducted during the nesting season.

6.4.2 Mitigation

1. The developer will be responsible for ensuring no nesting birds will be impacted by the proposed development, either by timing the work for outside of the nesting season (1st March to 31st August inclusive) or if this is not possible, after a visual inspection within 24hours prior to the development commencing shows no birds are nesting.
2. Should a nesting bird be found, a 4m buffer will be left around the nest, and no further disturbance conducted until the young have fledged and the nesting bird season has finished, which is March to August inclusive.
3. Once work has commenced on the buildings and it is confirmed that there are no nesting birds present, the buildings will be sealed to prevent birds gaining access during works and potentially causing further delay.

6.4.3 Compensation

It is recommended that a range of woodcrete boxes are erected around the site to provide an enhancement for passerine birds, and a selection of the following would be appropriate.

a. 26/32mm hole nest boxes (e.g. Schwegler 1b) should be installed at a minimum height of 3m in a westerly, northerly or easterly aspect.

b. Swallow cups should be installed on the exterior of the building at eaves height, ideally beneath an overhang to shelter the cup.

c. Wren boxes should be installed inside vegetation such as a hedge or shrub, ideally 1-3m from the ground.

Figure 6.6. Bird boxes

6.4.4 Monitoring

Failing boxes or enhancements will be replaced at the cost of the developer if deterioration or damage is noted within five years post-development.

7 Concluding Remarks

The survey has focussed on the potential habitats or protected species to be damaged or destroyed as part of this development.

Five roosts of four species were identified on site in 2023. Work must be conducted under licence from Natural England, which can only be applied for once full planning permission has been granted. This will stipulate timing restrictions for the works and outline appropriate mitigation measures such as bat lofts, details of which were provided in this report.

The method statements and compensation provided in sections 6.3 and 6.4 of this report will be followed and works will be done at a suitable time of year under suitable licence. Other than those listed above, there are no ecological constraints to the development as currently proposed.

Appendix A – Surveyor Details

Table A.1. Details of surveyors' experience and licences held

Name	Membership of associations/ experience	Licenses
Ben Jones BSc(hons) MSc	Senior Consultant MCIEEM Ben has a degree in Marine and Freshwater biology and a Master's degree in "Managing the Environment". He has 8 years' experience conducting environmental appraisals and phase 2 surveys for bats and newts in England and Wales. As a member of the CIEEM he is bound by professional conduct.	Holder of survey licenses for bats and newts in England and Wales. <u>England:</u> Bats - 2017-29112-CLS-CLS GCN - 2016-25209-CLS-CLS <u>Wales:</u> Bats – S091847/1 GCN – S091242/1
Logan Maggs BSc(hons)	Senior Consultant Logan has a degree in Conservation and Land Management. He has over 10 years' experience conducting environmental appraisals and phase 2 surveys for bats and newts in England and Wales.	Holder of survey licenses for bats and newts in England and Wales. <u>England:</u> Bats - 2016-24901-CLS-CLS GCN - 2017-29218-CLS-CLS <u>Wales:</u> Bats – S091096/1
Peta Marshall BSc(hons)MA	Principal Consultant MCIEEM PIEMA Peta has a degree in Applied Biology and has been working in commercial environmental assessment for over 17 years. She has 17+ years' experience surveying for protected species. As a member of the CIEEM she is bound by professional conduct.	Holder of survey licenses for bats and newts in England and Wales. Registered Consultant for Mitigation Class Licence for Bats <u>England:</u> Bats - 2015-12200-CLS-CLS BMCL - RC084 GCN - 2015-18939-CLS-CLS <u>Wales:</u> Bats – S090542/1 GCN – S090807/1
Chloe Sheil MZool (Conservation)	Chloe has a master's degree in Zoology with Conservation from Bangor University. She has 5 years' experience assisting with surveys.	Holder of survey licence for bats and newts in England; GCN: 2022-10485-CL08-GCN Bats: 2022-10941-CL17-BAT Listed as an accredited agent on Ben Jones' licence: NRW bat licence – S091847/1 NRW newt licence – S091242/1
Phil Playford BSc(hons) MSc MCIEEM	Phil is an independent consultant since 2017 and has been assisting Greenscape with surveys since 2021	England: Bats – 2020-44658-CLS-CLS Barn Owl - 2022-10257-CL29-OWL Great Crested Newt - 2015-16699-CLS-CLS Crayfish - 2019-43665-CLS-CLS
Demi Cook BSc(hons) QCIEEM	Demi has a degree in Zoology with Herpetology from Bangor University. She has been assisting with bat activity surveys for 8 years, and has experience working with bats in England and Wales. Bound by professional conduct as a member of the CIEEM	Holder of survey licence for bats in England – 2022-10571-CL17-BAT
Charlotte Grafton	Charlotte has been assisting with surveys as part of her work experience in 2023	

Appendix B – Methodology

Desk Study

Table B.1. Data sources

Organisation/Resource	Information Assessed
Freely available online species datasets (NBN Atlas)	Protected/Priority Species records (2km)
MAGIC website	International statutory designations (1km) • Special Protection areas (SPA) • Special Areas of Conservation (SAC) • RAMSAR sites National statutory designations (1km) • Sites of Special Scientific Interest (SSSI) • National Nature Reserves (NNR) EPS Licenses for protected species (2km)

The National Biodiversity Network (NBN) Atlas was checked to identify the protected species that have formally been recorded in the area. This was considered proportionate to the size of the development, as the Shropshire Environmental Data Network (SEDN) provides most of its records to the NBN.

A search on Multi Agency Geographic Information for the Countryside (Magic Maps) determined nearby designated areas. The map is presented in Section 4.1.

Field Survey

The level of survey is aimed to identify field signs of or habitats with the potential to support protected species and therefore assist in the determination for detailed phase 2 surveys.

Determination of Ecological Value is based on the general criteria provided by CIEEM (2017).

Table B.2. Criteria of ecological values

Ecological Value	Description and Examples
High	Habitats or features that have high importance for nature conservation, such as statutory designated nature conservation sites of international or national importance or sites maintaining viable populations of species of international or national importance (e.g. Red Data Book species; European protected species).
Medium	Sites designated at a county or district level, e.g. Local Wildlife Site (LWS), ancient woodland site, ecologically 'important' hedgerows or ecological features that are notable within the context of a region, county or district (e.g. a viable area of a Priority Habitat or a site that supports a viable population of a priority species).
Low	Sites of nature conservation value within the context of a parish or neighbourhood, low-grade common habitats, such as arable fields and improved grasslands and sites supporting common, widespread species.

Species Surveys

Bats

Features on site were assessed for potential for bat roosts, foraging and commuting.

An external assessment of all structures on site was undertaken to determine potential roost features (PRF) The potential suitability of the structures assessed was assigned a rating of low to high in accordance with table 4.1 of Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd edition.

An internal assessment of all structures was undertaken by a suitably licensed surveyor for evidence of roosting bats such as droppings, feeding remains and staining.

Daytime surveys were conducted with the aid of a strong torch and a 12x55 monocular. Bat species may leave little evidence of their presence.

Evidence for the presence of bats includes:

- Holes, cracks and rot holes used as roosts, marked by streaks of urine and faeces.
- Smoothed, darkened edges where bats have rubbed and left natural body oils when entering and exiting a space.
- Faeces under a roof access point, a well-used feeding point or a resting spot.
- Feeding signs such as discarded insect wings under a feeding point.
- Lack of cobwebs around eaves, roof spaces, beams or ceilings where routes are kept clear by bats or presence of droppings in a cobweb.
- Presence of roosting or dead bats in or behind any object.

Phase 2 bat activity surveys were conducted to reinforce the findings using frequency division bat detectors (Anabat Scout, Wildlife Acoustics Echo Meter Touch), Sony FDR-AX33 & AX53 night-sight cameras each with a pair of Nightfox XC5 infrared torches, and Nightfox Whiskers. The footage was analysed by an experienced bat ecologist. Detectors were left within the buildings to reinforce findings (BCT, 2022). Binatone two-way radios were used to maintain communication across the site.

Surveys were conducted when the weather conditions were suitable for bat activity, i.e. when the ambient temperature exceeded 10°C at sunset and when there was little or no rain. Dusk surveys were begun approximately 15mins prior to sunset and continued for 90-120mins following sunset depending on visibility and site conditions. Dawn surveys were begun approximately 90-120mins before sunrise, depending on the species expected, to 15 minutes after sunrise. Dawn surveys were only conducted if the temperature at the previous sunset was over 10°C. Weather conditions are recorded at the start and end of each survey, noting temperature in °C, cloud cover as a percentage, windspeed in Beaufort (BFT), and precipitation.

Table B.3. Windspeed scale

Wind Force	Description	Speed mph (kph)	Specifications
0	**Calm**	<1 (<1.6)	Smoke rises vertically
1	**Light Air**	1-3 (1-5)	Direction shown by smoke drift but not by wind vanes
2	**Light Breeze**	4-7 (6.5-11)	Wind felt on face; leaves rustle; wind vane moved by wind
3	**Gentle Breeze**	8-12 (12-19)	Leaves and small twigs in constant motion; light flags extended

Activity surveys are conducted to establish the presence of bats within a structure, what species they are, approximately how many are present, and if possible, where they are exiting a roost.

Bats were identified from the characteristic echolocation calls using appropriate computer sonogram analysis software (Reason, et al., 2016).

Birds

Searching for evidence of nesting birds, including barn owls, involved looking for:

- Presence of nests
- Collections of droppings and/or feathers
- Highly distinctive droppings or splats under roosting points.
- Presence of owl pellets/feathers
- Listening for bird song
- Recording bird activity

Appendix C – Policy

The following areas of policy and legislation are of relevance to ecology and provide context to the surveys conducted. Findings presented in this report are in line with the following:

The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 – as listed in:

- Schedule 2. European protected species of animals

The Wildlife and Countryside Act (1981) – as listed in:

- Schedule 1. Birds protected by special penalties at all times
- Schedule 5. Protected animals

Countryside and Rights of Way Act (2000)

Environment Act (2021) – Part 6 – Nature and Biodiversity

Natural Environment and Rurally Communities (NERC) Act (2006)

National Planning Policy Framework (2018)
Policy 15 – Conserving and Enhancing the Natural Environment

Biodiversity 2020 – A strategy for England's wildlife and ecosystem services (2011)

ODPM Circular 06/2005: Biodiversity and Geological Conservation

Shropshire Core Strategy (2010): Policy CS17 – Environmental Networks

Bats

All bat species are protected under The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 which implements the EC Directive 92/43/EEC in the United Kingdom. It is an offence, with certain exceptions, to:

- Deliberately capture or kill any wild animal of a European Protected Species.
- Deliberately disturb any such animal.
- Damage or destroy a breeding site or resting place of such a wild animal.
- Keep (possess), transport, sell or exchange, or offer for sale or exchange, any live or dead wild animal or plant of a European Protected Species, or any part of, or anything derived from such a wild animal or plant.

A person found guilty of an offence is liable on summary conviction to imprisonment for a term not exceeding six months or to an unlimited fine or to both .

Seven bat species are on the UK Biodiversity Action Plan and are listed as Species of Principal Importance under the provisions of the Natural Environment and Rural Communities (NERC) Act 2006. The National Planning Policy Framework (NPPF) states that to minimise impacts on biodiversity and geodiversity, "*planning policies should… promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations*".

To allow a development that might result in an offence, a derogation licence can be sought via the implementation of a European Protected Species Licence. This is provided by Natural England.

Work can be conducted under a derogation licence from Natural England providing suitable compensation and mitigation is provided and the "three tests" can be met. These are:

Regulation 55(2)(e) states: a licence can be granted for the purposes of "preserving public health or public safety" or other imperative reason of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment.

Regulation 55(9)(a) States: the appropriate authority (Natural England) shall not grant a licence unless they are satisfied "that there is no satisfactory alternative"

Regulation 55(9)(b) states that the appropriate authority shall not grant a licence unless they are satisfied "that the action licensed will not be detrimental to the maintenance of the population of the species concerned at favourable conservation status in its natural range."

The method statement in the EPS licence is a legally binding document which outlines the species, context of the colony, method of mitigating and compensating and ongoing habitat management for ensuring favourable conservation status.

Birds

Under Section 1 of the Wildlife and Countryside Act 1981 (as amended), birds, their nests and young are all protected from damage, particularly during the breeding season. The Act allows for fines or prison sentences for every bird, egg or nest destroyed. It makes it an offence to:

- Intentionally kill, injure or take any wild bird.
- Take, damage or destroy the nest of any wild bird whilst it is in use or being built.
- Take damage or destroy the egg of any wild bird.
- To have in one's possession or control any wild bird, dead or alive or egg or any part of a wild bird or egg.

Some bird species are included in the UK and local BAPS and are recognised as species of principal importance for nature conservation in accordance with section 41 of the NERC Act 2006. Such species and their habitats receive protection through the provisions of the NPPF.

Appendix D – Bat Survey Data

First Survey – 15th August 2023

Table D.1. Survey results table

Date	Time Start – End	Species and Numbers	Roost Type	Structure	Roost Location	Access Points	Dimensions of roost
15/08/2023	19:30-22:45	LHS – 1	Day	Barn 1	Inside upper floor room	Most likely round window on western gable	11x5m, over 2m high
		LHS – 1	Day	Barn 2	Eastern wing	Broken window on northwestern corner	Entire building
		BLE – 2	Day	Barn 2	Uncertain	Cracks and gaps on courtyard side	Entire building possibly
Notes:	Two lesser horseshoe bats were seen, one in each building, before the survey began. The bat in barn 2 emerged from a broken windowpane near the northwest corner of the building at 21:16 and proceeded to forage west of the building throughout the survey. The LHS in barn 1 was not present at the end of the survey but the emergence was not seen. The most likely emergence location was through the open round window on the western gable end. Two brown long-eared bats emerged from roosts within barn 2. One of these was from the eastern side of the northern wing, and the other on the join of the northern and eastern wings, emerging northeast. Soprano pipistrelles were observed foraging to the south of site, but none were seen to roost in the buildings on this survey.						

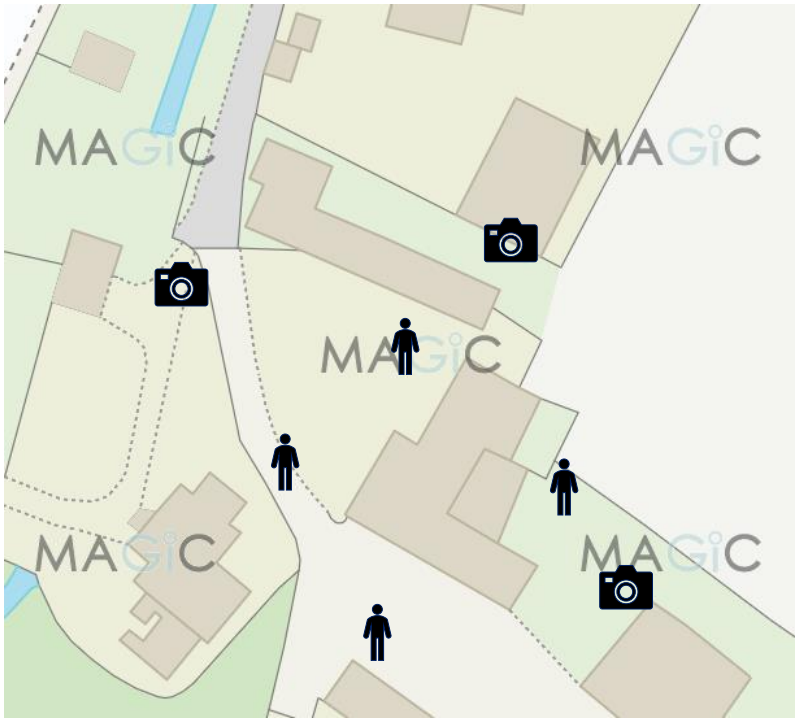

Figure D.1. First survey surveyor and camera locations

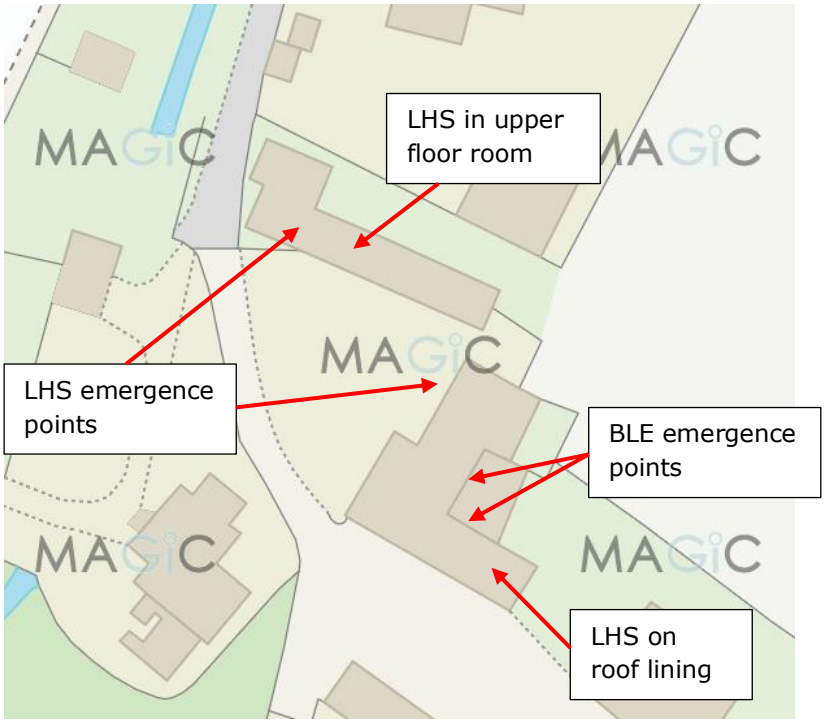

Figure D.2. First survey results

Figure D.3. LHS emergence point on first survey

Figure D.4. BLE emergence points on first survey

Figure D.5. View of round window from room LHS was seen roosting in

Second Survey – 31st August 2023

Table D.2. Survey results table

Date	Time Start – End	Species and Numbers	Roost Type	Structure	Roost Location	Access Points	Dimensions of roost
31/08/2023	04:30-06:30	S-Pip – 1	Day	Barn 1	Western gable end	Round window	Unknown
		BLE – 7	Maternity	Barn 2	Eastern wing	Various gaps, mostly on eastern gable	Entire building
		LHS – 1	Day	Barn 2	Under mezzanine	Uncertain, present at start of survey	Entire building
Notes:	Once the cameras were set up at the start of the survey an internal check was made in both buildings. One lesser horseshoe bat was seen under the mezzanine in barn 2 and no bats were seen in barn 1. This was the only lesser horseshoe bat seen on this survey. Brown long-eared bats were swarming up to various access points on the eastern side of the building. Two were seen flying to the eastern gable end at 05:20, up to five bats at 05:26. At 05:40 five bats were seen inside, and while that surveyor was inside another entered in on the gable end. A seventh BLE entered the building at 05:44 under metal sheeting on the northern side of the east wing. At 06:07 a soprano pipistrelle bat entered into the round window at the western gable end of barn 1. The specific roost location was not identified but is likely to be amongst the roof timbers.						

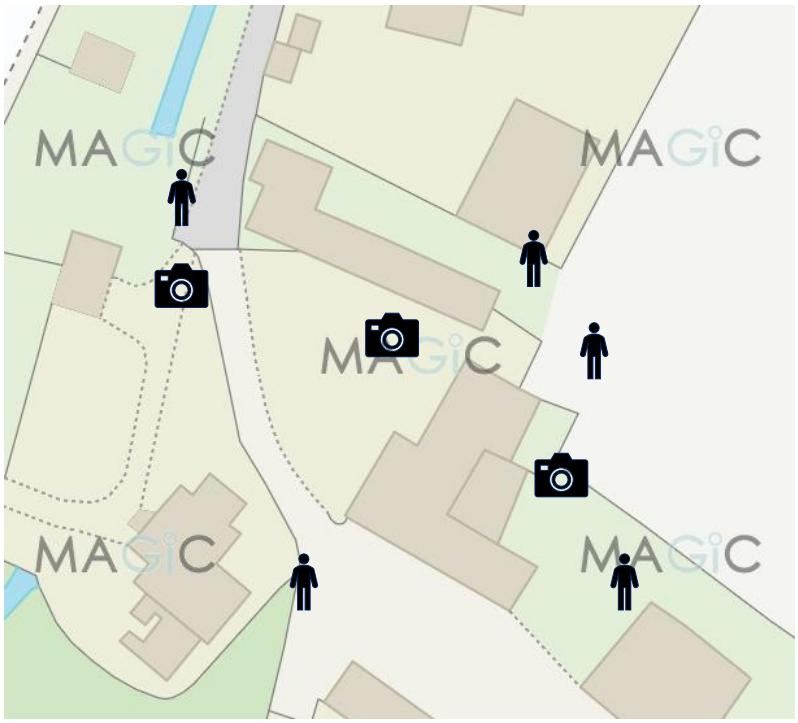

Figure D.6. Second survey surveyor and camera locations

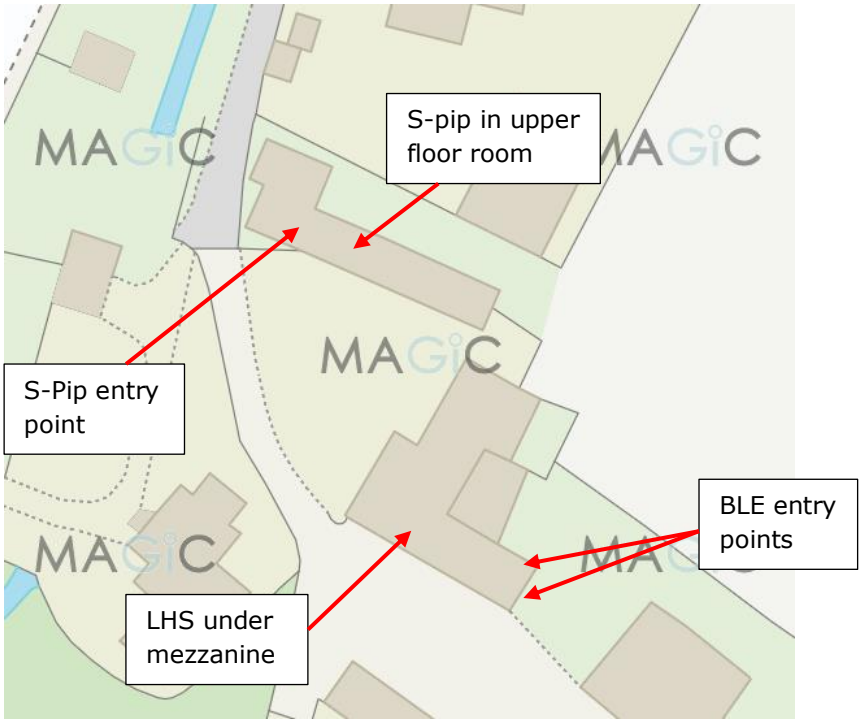

Figure D.7. Second survey results

Figure D.8. BLE roost entry points

Third Survey –14th September 2023

Table D.3. Survey results table

Date	Time Start – End	Species and Numbers	Roost Type	Structure	Roost Location	Access Points	Dimensions of roost
14/09/2023	19:15-21:30	LHS – 1	Day	Barn 1	Inside upper floor room	Most likely round window on western gable	11x5m, over 2m high
		LHS – 3	Transitional	Barn 2	Eastern wing	Broken window on northwestern corner	Entire building
		BLE – 1	Day	Barn 2	Eastern wing	Brick gap on eastern gable end	Entire building
		BLE - 1	Day	Barn 2	Whole building	Gable on western gable end	Entire building
		Whisk/Bran - 1	Day	Barn 2	Brick gap	Western side of north wing	n/a
Notes:	Before the survey began, an internal check identified one lesser horseshoe bat in barn 1 and three in barn 2. The LHS in barn 2 were seen to fly throughout the whole building, and were leaving and re-entering the building via the broken window identified on the first survey. The LHS in barn 1 was not seen to leave but the only potential roost access point for LHS in that barn is the round window on the western gable end. Two brown long-eared bats were seen to emerge from barn 2 on this survey. One emerged from the eastern gable end at 19:55, and the other from the western gable at 20:22. At 20:02 a myotis bat emerged from the western side of the north wing. Of the brief calls when it emerged there was not enough distinctive data to determine whether it was a whiskered or a Brandt's bat. This was the first time it was recorded on site and it came from a crevice space. There were no droppings to eDNA and no time to safely capture the bat to determine species ID. No other bat roosting was seen on this survey						

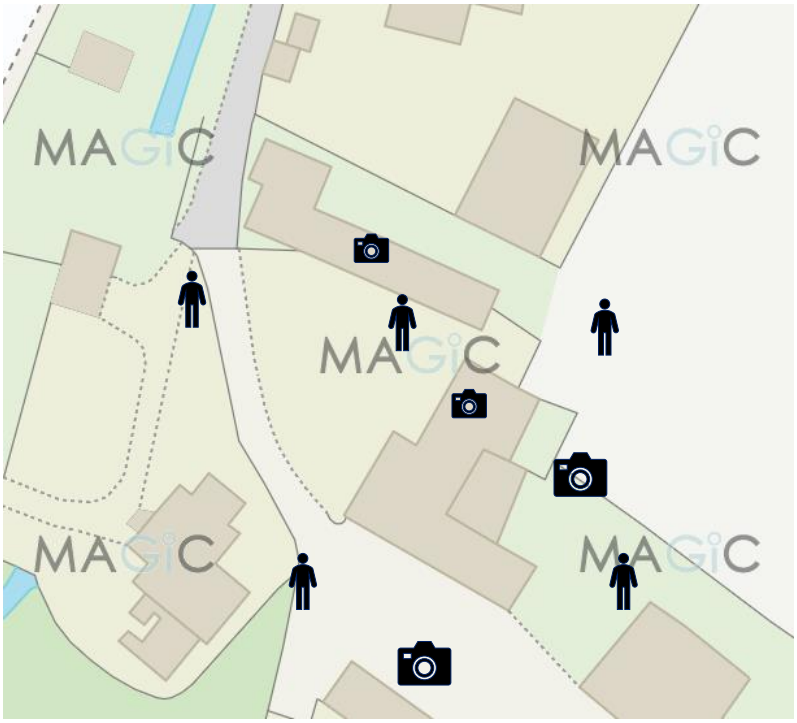

Figure D.9. Third survey surveyor and camera location

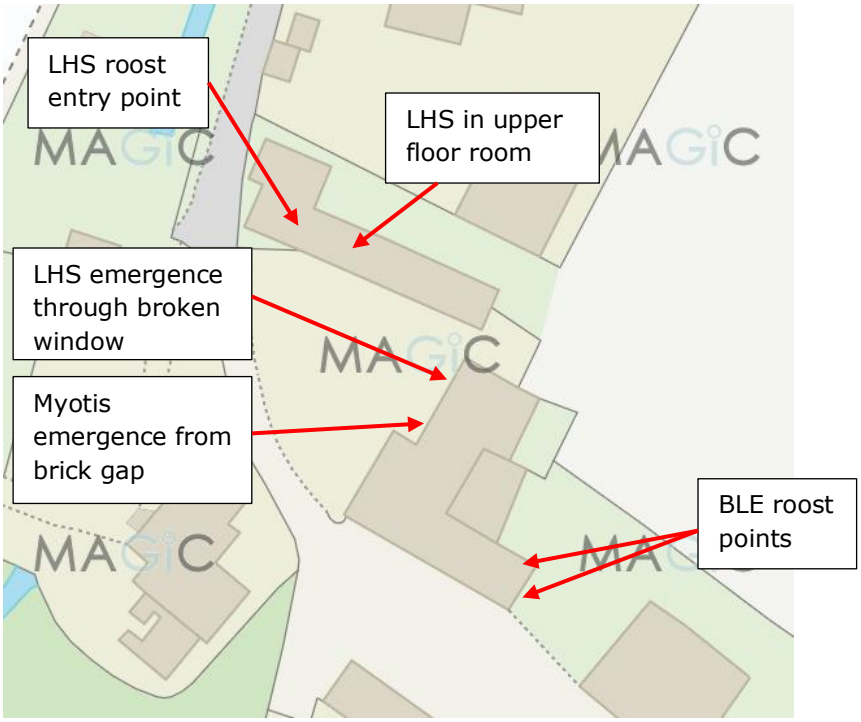

Figure D.10. Second survey results

Figure D.11. LHS (left) and myotis (right) emergence points on third survey

Appendix E - Bibliography

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