

Bat Survey Report

Llantroft

Newcastle, Shropshire.

Client: Ray Woodhams



October 2023



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Llantroft, Newcastle, Shropshire.

Bat Survey Report 2023

1. Summary Page

Objectives	<p>Mortimer Environmental were instructed by Ray Woodhams to undertake bat activity surveys for barns at Llantroft, Newcastle, Shropshire (located at central grid ref SO 23931 79947) in support of a planning application for their conversion to residential units.</p> <p>The results of these surveys, which were completed in 2023 and which are detailed in this report, were used to assess whether the buildings support roosting bats, and to determine the conservation status of any roosts identified as well as any potential impacts on bats likely to arise from the proposed building conversion works.</p>
Findings	<p>Three bat roosts were recorded within two of the barns on site. One day roost in Barn A was occupied by small numbers (1 to 2) of common pipistrelle, <i>Pipistrellus pipistrellus</i>, and soprano pipistrelle, <i>Pipistrellus pygmaeus</i>. A second day roost in Barn A was also occupied by small numbers (2 to 3) of what may have been serotine, <i>Eptesicus serotinus</i>, bats. A third day and night roost in Barn B was occupied by small numbers (2 to 3) of <i>Myotis</i> bat species.</p> <p>A total of six species of bat were recorded using the wider site during the course of the surveys. These were serotine, common pipistrelle, soprano pipistrelle, brown long-eared bat, <i>Plecotus auritus</i>, noctule, <i>Nyctalus noctula</i>, and a <i>Myotis</i> species, <i>Myotis</i> spp. Moderate levels of bat foraging and commuting activity were recorded on and around the site by all of these species other than serotine.</p>
Recommendations	<p>A European Protected Species (EPS) Development Licence and associated Method Statements will be required for the lawful destruction of the bat roost in Barn B. Associated mitigation and compensation will be required as outlined in Section 7 of this report.</p> <p>A Precautionary Working Method Statement (PWMS) will be required to mitigate disturbance impacts arising from construction works associated with conversion of the adjacent barn which are otherwise likely to affect the two roosts in Barn A. Measures which should be incorporated within this PWMS are also detailed in Section 7 of this report.</p> <p>Further recommendations are detailed in Section 7.3. These include collecting bat droppings from Barns A and B for DNA analysis to further inform an associated EPS license application and incorporating features into the designs of the renovated barn structures to retain and enhance their existing value to bats.</p>

Llantroft, Newcastle, Shropshire.

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2. Introduction

2.1 Building Structure & Location

- 2.1.1. Mortimer Environmental were instructed by Ray Woodhams to undertake bat activity surveys at two barns at Llantroft, Newcastle, Shropshire, SY7 8PD (hereafter referred to as 'the Site'), located at central grid reference SO 23931 79947 in support of a planning application for their conversion for residential use. Figure 1 below, shows the location of the Site and its immediate surroundings. Figure 2 details the layout of the barn structures on site, including Barns B & C which were subject to the surveys detailed hereafter.
- 2.1.2. The site is represented by a stone-built farmhouse and an associated complex of single-storey barn structures set in a small plot. Barn B is open sided to the southern aspect, with stone walls and a pitched, slate tiled roof. Internally, the barn has an open, wooden framed roof structure. At its western end Barn B adjoins Barn A: a larger stone barn with a pitched slate tiled roof which has already been converted to residential use, and which was not subject to the surveys detailed in this report. Also adjoining Barn B alongside the eastern half of its southern aspect is Barn C (see Figure 2 below). Barn C is a dilapidated lean-to structure comprised of a stone wall on the eastern aspect, a breeze block wall on the southern aspect and corrugated metal sheet doors with associated weather boarding on the western aspect. The northern aspect of the structure ties in with the adjacent Barn B, and its pitched roof is comprised of corrugated metal sheeting.
- 2.1.3. Directly to the south of the adjoining Barns B & C is a small gravelled outdoor seating area with a further single storey stone barn structure, Barn D (which was not subject to the surveys detailed in this report) beyond.
- 2.1.4. The Site is situated in a particularly rural location within the Shropshire Hills Area of Outstanding Natural Beauty (AONB) and approximately 2.5 km south-west of the village of Newcastle, Shropshire. It is surrounded by a mosaic of grazed hillside pasture, interspersed with areas of broadleaved and plantation woodland and an interconnected network of hedgerows with trees.
- 2.1.5. Mortimer Environmental were instructed to survey two of the barn structures on site (Barns B and C) for bats in support of a planning application for redevelopment of these structures to residential use.

2.2 Initial Building Appraisals

2.2.1. Barn B supported numerous potential bat roost features, including gaps between roof tiles on the southern and northern aspects, gaps between joints in the internal roof structure, and gaps and crevices in the mortaring to the internal and exterior aspects of the stone walls. The structure had also been subject to bat activity surveys undertaken in 2016 and 2021 which identified bat roosts within the structure, although restrictions to re-use of this survey data prevent specific details of these roosts being presented here. As such, Barn B was considered a confirmed roost which therefore required contemporary roost characterisation surveys to be completed to inform planning, protected species licensing and mitigation requirements.

2.2.2. Barn C also supported numerous potential bat roost features, including crevices between weather boarding on the western aspect, and gaps and crevices in the mortaring to the internal and exterior aspects of the eastern stone walls. As with Barn B, Barn C was subject to bat activity surveys in 2016 and 2021 which identified bat roosts within the structure. As such, Barn C was also considered to be a confirmed roost which therefore required contemporary roost characterisation surveys to be completed to inform planning, protect species licensing and mitigation requirements.

2.3 Potential Impacts on Bats

2.3.1. Should contemporary surveys confirm the continued presence of roosting bats with Barns B & C, or within the adjoining structures, then the proposed works will have potential to directly affect any bats roosting within the structures and may result in destruction of an unknown number of bat roosts. Furthermore, numerous potential roost features currently present within the structures would also be lost to the proposed redevelopment works in the long-term.

2.3.2. Redevelopment of Barns B & C would be likely to generate additional short-term impacts in the form of increased levels of human disturbance arising from noise, lighting and vibration. This would also be likely to adversely affect the value of habitats on site to foraging and commuting bats.

2.4 Relevant Legislation

2.4.1. All bats and any place used by bats for shelter (i.e., a roost) are legally protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales. When taken together this legislation makes it an offence to:

Kill, injure, take or disturb a bat (note that disturbance in this context refers to actions that could inhibit a bat's ability to survive and reproduce or rear their young, to hibernate or to significantly affect the local distribution or abundance of the species);

Destroy, damage, obstruct or otherwise interfere with a bat roost, breeding site or resting place, whether the roost is occupied at the time or not; and

Sell, or offer for sale, a bat or any part thereof, live or dead.

2.4.2. In summary, this means:

Only appropriately licenced bat workers can handle bats (unless the bat is injured);

Where building work may possibly affect a bat or bat roost, appropriate surveys should be conducted by professional bat ecologists. Where bats are present and have potential to be affected by the work a licence from Natural England is required; and

Where the risk of affecting bats is assessed to be sufficiently low that licensing is not required (taking account of the results of a bat survey undertaken by a professional bat ecologist), works can be conducted under a non-licenced Precautionary Working Method Statement (PWMS). This ensures the correct course of action is followed for due diligence to minimise the risk of disturbing or harming bats and therefore avoid committing an offence under the above legislation.

3. Aims and Objectives

3.1.1. The aims and objectives of the bat surveys undertaken at Llantroft in 2023 and this associated Bat Survey Report are to:

Comply with advice in the Bat Conservation Trust (2016) 'Bat Surveys for Professional Ecologists: Good Practice Guidelines' for buildings previously identified as supporting bat roosts by undertaking three dusk emergence bat surveys to characterise roosts that are present. The surveys will be used to determine roost locations, type, access and egress points, species and frequency of use;

Identify any bat activity at the site, specifically to identify any areas of the structures being used by bats to roost, and to locate any access/egress points;

Provide advice and guidance (where appropriate) on licensing requirements under the provisions of the Conservation of Habitats and Species Regulations 2017 (as amended); and,

Inform development of a strategy that follows the hierarchy of avoid, mitigate, compensate and enhance for impacts on bat roosts, and which is capable of meeting the 'Favourable Conservation Status' (FCS) legal test under The Conservation of Habitats and Species Regulations 2017 (as amended).

4. Methodology

4.1 Desk Study

4.1.1. Biological Records Centre data were provided by Shropshire Ecological Data Network (SEDN) in October 2023 for records of bats within a 2 km radius of the centre of the Site. Multi-Agency Geographic Information for the Countryside (MAGIC) Maps website (www.magic.gov.uk) was also searched for records of statutory designated sites and for European Protected Species (EPS) mitigation licences relating to bats within 2 km of the site boundary.

4.2 Dusk Emergence Bat Surveys

4.2.1. Survey methods and protocols employed adhered to the Bat Conservation Trust (BCT) Good Practice Bat Survey Guidelines (Collins 2016), with consideration given to the BCT Interim Guidance Note 'Use of night vision aids for bat emergence surveys and further comment on dawn surveys' (2022). Three dusk emergence surveys were undertaken over the course of three survey visits between the 25th of July and the 5th of September 2023. The survey schedule, weather conditions and personnel engaged during each site visit are detailed in Table A in Appendix 1 and paragraph 4.3.2. below.

4.2.2. Bat surveys were undertaken by a team of appropriately experienced and licenced professional bat ecologists (one holding a Natural England Bat Class Licence WML CL18 [Bat Survey Level 2]). Surveyors were positioned at two locations to provide coverage of all aspects of the two barns and were equipped with Wildlife Acoustics Echometer Touch bat detectors that record bat echolocation calls in full spectrum output. All surveyors either used Canon XA11 or Canon XF105 camcorders equipped with an infrared (IR) lamp and set to IR recording mode during the course of the survey. Surveyor and IR camera positions are shown in Figure 3 below.

4.2.3. Recorded bat calls were analysed using Kaleidoscope software (Wildlife Acoustics) to aide species identification, where necessary. IR camera footage was reviewed at normal speed by an experienced bat ecologist, using Microsoft's Video Editor, Media Player or Clipchamp software.

4.2.4. Roost access / egress points were determined through a combination of surveyor observation and desk-based review of IR camera footage recorded during each survey, with high-resolution videos analysed in slow motion where necessary. Where emergences were recorded, videos were edited into short clips and uploaded as unlisted links to YouTube.

4.3 Automated Static Detector Surveys

4.3.1. A static acoustic recording device (Wildlife Acoustics Song Meter Mini) was deployed in the open roof structure of Barn B and left in situ for two separate periods, from the 25th of July to the 16th of August, and then again from the 16th of August to the 5th of September. Devices were programmed to record bat calls for 30 minutes before sunset until 30 minutes after sunrise. Recorded calls were subsequently analysed using Kaleidoscope software (Wildlife Acoustics).

4.4 Ecological Evaluation

4.4.1. The site was assigned an ecological value based on the approach described in 'Guidelines for Ecological Impact Assessment in the UK & Ireland' published by the Chartered Institute of Ecology and Environmental Management (2022) which defines the resource (in this case the bat roost resource) within a geographical context using the following criteria:

International (Europe);

National (England);

Regional (West Midlands);

County (Shropshire);

Local or (Parish);

Local (site level only).

4.4.2. The bat roost assessment categorises roosts according to the definitions described in Table 1 below. The significance (or otherwise) of the bat roost resource at Barns B and C at Llantroft was also classified in accordance with the site assessment recommended in the 'UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats' (Reason & Wray, 2023), which provides guidance on proportional mitigation requirements based on the conservation significance of roosts. The UK Bat Mitigation Guidelines categorises the conservation significance of bat roosts from 'low' to 'high' according to the status of the roost (e.g., breeding, mating or hibernation) and rarity of the bat species present. The level of mitigation required (if any) depends on the size and type of impact, and the importance of the bat population affected. The diagram in Appendix 2 provides the broad principles that guide this process.

Table 1. Bat Roost Definitions (as specified by the Natural England Earned Recognition Project, reproduced from Reason & Wray, 2023).

Roost Type	Definition
Day roost	A place where individual bats, or small groups, rest or shelter in the day during the summer.
Night Roost	A place where bats rest or shelter in the night but are not found in the day. May be used by a single individual on occasion or it could be used regularly by the whole colony.
Feeding Roost	A place where individual bats, or a few individuals, rest or feed for short periods during the night but are not present by day.
Transitional roost	A place used by a few individuals or occasionally small groups for generally short periods of time on waking from hibernation or in the period prior to hibernation.
Maternity roost	A place where female bats give birth and raise their young to independence. In some species males may also be present in the maternity roost
Hibernation roost	A place where bats may be found individually or together during winter. They have a constant cool temperature and high humidity.
Satellite roost	An alternative roost found in close proximity to the main nursery colony used by a few individuals to small groups of breeding females throughout the breeding season.

4.5 Survey Constraints, Limitations and Deviations

- 4.5.1. The surveys were conducted during the optimal survey season, during suitable weather conditions.
- 4.5.2. Due to the mobile nature of UK bat species, the ecological data contained in this report are considered valid for a period up to 18 months from the date of survey (assuming no significant changes to site conditions).

5. Results

5.1 Desk Study

- 5.1.1. No records of bats within 2 km of the Site from the past 10 year period were returned by SEDN.
- 5.1.2. A review of the MAGIC Maps website revealed that the Site at Llantroft lies within the Shropshire Hills AONB. However, there are no other statutory designated nature conservation sites within 2 km of the Site, and no European Sites with 5 km of the Site.
- 5.1.3. The review of the MAGIC Maps website also revealed numerous areas of Priority Habitat within 2 km of the Site, including Ancient and Semi Natural Woodland, Deciduous Woodland, Lowland Dry Acid Grassland, Upland Flushes, Fens and Swamps, and Purple Moor Grass and Rush Pasture, all of which have potential to support either roosting, foraging or dispersing bats.

Table 2. Statutory designated sites within 2 km of Llantroft.

Site name	Designation	Description	Proximity at nearest point & direction
Shropshire Hills	AONB	A landscape of diversity and contrast created by varied geology, comprising moorland and rough grass hilltops and commons, interspersed with a patchwork of fields rich in hedgerows and veteran trees. Ancient woodlands, wildflower meadows and orchards also survive here.	Lies within

- 5.1.4. There are no records of EPS mitigation licences relating to bats that have been granted within 2 km of the Site according to a search of the MAGIC Maps website undertaken on the 10th of October 2023.

5.2 Dusk Emergence Bat Surveys

- 5.2.1. The results of the dusk emergence bat surveys are detailed in Table B in Appendix 3. Surveyor and IR camera positions (S1 – S2) are shown in Figure 2. IR camera field-of-view images captured during the darkest point of the surveys, are shown in Appendix 4.
- 5.2.2. Six species of bat were recorded during the course of the surveys on site: Serotine, *Eptesicus serotinus*, common pipistrelle, *Pipistrellus pipistrellus*, soprano pipistrelle, *Pipistrellus pygmaeus*, brown long-eared, *Plecotus auritus*, noctule, *Nyctalus noctula*, and a *Myotis* species, *Myotis* spp. Of these,

common pipistrelle, soprano pipistrelle, a *Myotis* spp. as well as (unconfirmed) serotine bats were recorded roosting within three separate locations.

- 5.2.3. Common pipistrelle and soprano pipistrelle were observed emerging from a roost located at the apex of the east gable end wall to Barn A, directly beneath the end ridge tile (identified as Roost Location I in Table 3, as well as in Figure 2 and Plate 1 in Appendix 5, below). The eastern end of Barn A was within the field-of-view during the surveys undertaken for Barns B and C, and this roost is located directly above the apex of the lower roof structure to Barn B, where this tied in with the gable end wall to Barn A. It is considered that this is a day roost supporting only a low number of common and soprano pipistrelle, as peak emergence counts for both species on any single survey was one individual.
- 5.2.4. Two large bats were recorded emerging from a gap between roof tiles at the eastern end of the south aspect to Barn A (identified as Roost Location II in Table 3, as well as in Figure 2 and Plate 2 in Appendix 5, below), again, directly above the adjoining pitched roof to Barn B. These individuals were not recorded echolocating as they emerged, and hence cannot be identified to species level with confidence. However, their size, relatively slow flight and emergence times approximately twenty minutes after sunset suggest they may be serotine bats. It is therefore considered that this is a day roost supporting a low number of (unconfirmed) serotine bats.
- 5.2.5. A third roost (Roost Location III) was identified within the internal roof structure to Barn B itself, with a peak count of two *Myotis* spp. individuals recorded repeatedly emerging and re-entering the structure via the open fronted, south facing aspect. It is therefore considered that this is likely to be a day and night roost supporting a low number of *Myotis* spp. bats. It was not possible to identify these bats to species level based on recorded calls or visual observation (*Myotis* species cannot be identified at the species level from their calls which have highly similar acoustic characteristics).
- 5.2.6. Video links to bat emergences and returns to roost locations I, II and III are provided in Table 3 below.
- 5.2.7. Moderate levels of foraging and commuting activity were also recorded on and around the Site by common pipistrelle, soprano pipistrelle, noctule, serotine, brown long-eared bat, and *Myotis* spp.

5.3 Automated Static Detector Surveys

- 5.3.1. Data obtained through the deployment of static acoustic recording devices broadly aligned with observations recorded during the dusk emergence surveys, with numerous records obtained of common and soprano pipistrelles and less frequent passes by noctule and *Myotis* bat species.

Table 3. Roost locations, description and species observed during bat activity surveys at Llantroft in 2023. Roost locations are shown in Figure 2, with photographs included in Appendix 5. Links to unlisted YouTube video clips of bats emerging / returning to roosts are also provided below.

Roost Location (see Figure	Species	Description	Emergence/return location	Peak Emergence Count	Infrared (IR) Video Footage
I	Common pipistrelle, Soprano pipistrelle	Day roost at east end of Barn A	Gap at roof apex on east gable end of Barn A between wall and roof tiles	1 (E) 1 (E)	https://youtu.be/ITk3stFrFBU https://youtu.be/50Xf7UIHF7s
II	Unconfirmed – large species of bat, potentially serotine	Day roost at south aspect of roof at east end of Barn A	Gap underneath roof tile on south face at east end of Barn A	2 (E)	https://youtu.be/U1eZfnlZHUK https://youtu.be/aTbUynyV_xs
III	Unknown (Myotis spp.)	Day roost / night roost / feeding roost in internal roof structure of Barn B	Access through open front of south aspect of Barn B	2 (E)	https://youtu.be/oZOjwSjjMFw https://youtu.be/4hxAfnOcJNc

6. Interpretation of Results

6.1 Evaluation

- 6.1.1. When assessing the impact of a given development on bats and bat populations, it is necessary to take into account several factors, including (but not limited to): the rarity of the species using the site; the value of the roost resource; the importance of foraging and commuting habitats; and the assemblage of bat species present.
- 6.1.2. Barn A at Llantroft was found to support day roosts of common and soprano pipistrelle as well as what are likely to be serotine bats. These roosts are located at the eastern end of Barn A, at the apex of the gable end wall, and between roof tiles on the south facing aspect respectively. Barn B was also found to support what is likely to be both a day and night roost of a *Myotis* species. Unfortunately, it is not possible to confidently determine which *Myotis* species are roosting in Barn B as this genus of bats are notoriously difficult to distinguish from sound and visual data alone. However, recommendations are made below to further inform next steps in terms of protected species licensing and mitigation requirements.
- 6.1.3. Common and soprano pipistrelle bats are considered to be widespread in Central England and the Midlands. Therefore, Roost I in Barn A at Llantroft is considered to be of Site level value. Furthermore, day roosts of small numbers of common species such as these are considered to be of low conservation significance.
- 6.1.4. Serotine bats are considered rarer or restricted in their distribution in Central England and the Midlands. Roost II, a day roost in Barn A occupied by low numbers of what may be serotine bats, is therefore considered to be of Parish level value and also of low conservation significance.
- 6.1.5. *Myotis* species are considered to be widespread in many geographies in Central England and the Midlands, though not as abundant in all. Roost III, a day and night roost occupied by low numbers of *Myotis* spp. is therefore considered to be of Site level value and low conservation significance.
- 6.1.6. The 2023 bat surveys recorded bat foraging and commuting activity within and around the Site, with activity levels classified as moderate based on the following findings/ field observations:

Common and soprano pipistrelles were recorded foraging around the barns on site. These species were also recorded commuting and dispersing across the Site. It is estimated that three to four individuals of both species were using the Site for foraging and dispersal in 2023.

Myotis spp. were recorded occasionally foraging and commuting across the Site, whilst noctule, serotine and brown long-eared bats were occasionally recorded commuting across the Site.

6.2 Impact Assessment

- 6.2.1. One day-roost of common and soprano pipistrelle (Roost I) was identified within the apex of the eastern gable end wall of Barn A during surveys undertaken in 2023. This is evaluated as being of Site level value and low conservation significance. In the absence of mitigation or compensation, effects arising from disturbance of this roost during building conversion works to the adjoining Barn B may result in an adverse effect which is significant at the Site level.
- 6.2.2. One day-roost occupied by what may be serotine bats (Roost II) was identified between roof tiles at the eastern end of the south facing aspect of Barn A. This roost is evaluated as being of Parish level value and low conservation significance. In the absence of mitigation or compensation, effects arising from disturbance of this roost during building conversion works to the adjoining Barn B may result in an adverse effect which is significant at the Parish level.
- 6.2.3. A further day and night-roost occupied by *Myotis* spp. bats (Roost III) was identified within the internal roof structure of Barn B. This roost is evaluated as being of Site level value and low conservation significance. In the absence of mitigation or compensation, loss of this roost through building conversion works to Barn B would therefore result in an adverse effect which is significant at the Site level.
- 6.2.4. These effects are likely to occur during the short-term (for Roosts I and II) due to noise, vibration and lighting, and in the long-term (for Roost III) due to permanent loss of roosting habitat.
- 6.2.5. In summary, in the absence of measures to avoid, mitigate or compensate for disturbance or loss of bat roosts, conversion of Barns B & C at Llantroft is likely to result in permanent, adverse effects on the roosting bats which would be significant at up to Parish level.

6.3 Licensing & the Mitigation Hierarchy

- 6.3.1. With consideration to the evaluation and impact assessment detailed above, an EPS development licence will be required from Natural England for destruction of Roost III in Barn B, a summer day roost and night roost used by small numbers of *Myotis* bats. This would take place in conjunction with appropriate measures that follow the mitigation hierarchy of avoid, mitigate, compensate and enhance to safeguard the favourable conservation status (FCS) of the species concerned. Works which

are likely to result in disturbance of Roost I in Barn A, a day roost occupied by low numbers of common and soprano pipistrelle, and Roost II in Barn B, a day roost occupied by small numbers of what may be serotine bats respectively, should be carried out under Precautionary Working Method Statement (PWMS).

7. Recommendations

7.1 Mitigation and Compensation for Loss of Roosts and Roosting Habitats

- 7.1.1. Compensation for loss of bat roosts is ideally provided on a like-for-like basis, with only temporary functional loss and with reasonably justifiable enhancements (Reason & Wray, 2023). A replacement roost should therefore be installed before an existing roost is destroyed.
- 7.1.2. For licensing purposes, a temporary alternative roost is likely to be required for closure of Roost III in Barn B, a summer day and night roost, and this would need to be in place for a period of time, such that the local bat population on site has an alternative roost resource available during normal periods of use. In line with licensing requirements, a method statement will also be required detailing appropriate timings for initial roof stripping activities affecting Barns B and C.
- 7.1.3. A PWMS will be required for subsequent construction activities associated with conversion of the adjacent barns which, in the absence of mitigation, are likely to disturb bats occupying Roosts I and II in Barn 1. Measures which should be incorporated into the licence method statement for closure of Roost III and the associated Precautionary Working Method Statement for disturbance of Roosts I & II are detailed in section 7.2 below.

7.2 Timing of Works & Mitigating Disturbance to Bats

- 7.2.1. The following measures should be incorporated into a method statement with regard to roosting bats for roof stripping and subsequent building conversion activities concerning Barns B and C, alongside any other commitments stipulated in the associated protected species development licence:

Initial roof stripping activities to Barns B and C should be programmed to take place outside of the active season during which these day and night roosts are likely to be occupied by bats, (i.e., avoiding the April to September active season).

Install a bat box for crevice dwelling species on a suitable tree or structure in proximity to Barns B and C. The bat box should be installed in line with guidelines provided by the Bat Conservation Trust to ensure it is located such that it has a clear 'drop zone', unobscured by branches of other vegetation which might impede egress and is sufficiently high up (3 - 4 m) to avoid tampering, vandalism, or risk of predation by cats. The box will be used to safely relocate any bats found during building stripping works.

The Named Ecologist on the associated protected species development licence (or an accredited agent appointed by the Named Ecologist), should provide a Toolbox Talk to site staff covering relevant ecological considerations including bats and the law; evidence of bats and what to look out for; good working practice; and what to do in the event of finding bats.

Ecological supervision: the Named Ecologist (or accredited agent), should be present on Site during the initial roof stripping works to inspect for bats which may be present and roosting within the structure and translocate any individuals encountered to the temporary alternative roost location, and to supervise or monitor any aspects of subsequent building conversion activities with potential to disturb bats occupying Roosts I and II in Barn A. Inspections for roosting bats by the Named Ecologist should consider all other potential roost features within the structures themselves. Careful working practices will need to be adopted to minimise disturbance to bats during works through noise, vibration and lighting. While this report identifies the locations of three bat roosts within Barns A and B, it is important to note that various other potential roost features are present within Barns A, B and C and that bats often switch roost locations.

Emergency Procedures: A licensed bat worker should be available on-call for the duration of the building conversion programme. If a bat, or bats are found, then work should stop immediately. Work would not proceed again until an assessment has been made by the Named Ecologist or licenced bat worker and the bats have been appropriately cared for.

7.3 Further Recommendations

- 7.3.1. It is suggested that bat droppings are collected for DNA analysis to further inform which species are occupying Roosts II and III in Barns A and B, to support an EPS license application for Roost III as well as development of a PWMS for Roost II.
- 7.3.2. Opportunities should be sought to retain the existing value of Barns B and C to roosting bats through incorporation of permanent bat roost features within designs for the structures and an associated sensitive lighting strategy, as follows:

Permanent roost features: three permanent roost features, such as cavity wall roost boxes, bat bricks and bat tiles, should be incorporated into design plans for the barns. There are several types of bat box that can be incorporated into a new wall, and a model to suit specific construction requirements can be selected. This could be in the form of a 'bat tube', which can be directly installed into the fabric of an exterior wall of a building. The tubes have an external entrance slot which leads to an internal cavity for roosting (e.g., the Schwegler 1FR bat tube or the Habibat bat

box). The bat tubes can be concealed behind external render or faced with stone to blend unobtrusively into the finished wall. A 2 - 2.5 cm wide slot in the wall provides access to the bat box. Bat roosting opportunities should be provided on all building aspects.

A sensitive lighting strategy should be employed to avoid impacting foraging, commuting and roosting bats. If and where external lighting is required on site, appropriate light types (i.e., lamps with narrow spectrum and no UV output), low level lighting bollards and hoods on lamps should be used to control light spill.

8. References

1. Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Ed.) The Bat Conservation Trust, London.
2. Bat Conservation Trust (2022) Interim Guidance Note: Use of night vision aids for bat emergence surveys and further comment on dawn surveys.
3. CIEEM (2022) Guidelines for Ecological Impact Assessment in the UK & Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.
4. CIEEM (2019) Advice Note: on the Lifespan of Ecological Reports and Surveys. Chartered Institute of Ecology and Environmental Management, Winchester.
5. Reason, P.F. and Wray, S. (2023). UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. Chartered Institute of Ecology and Environmental Management, Ampfield.

9. Figures

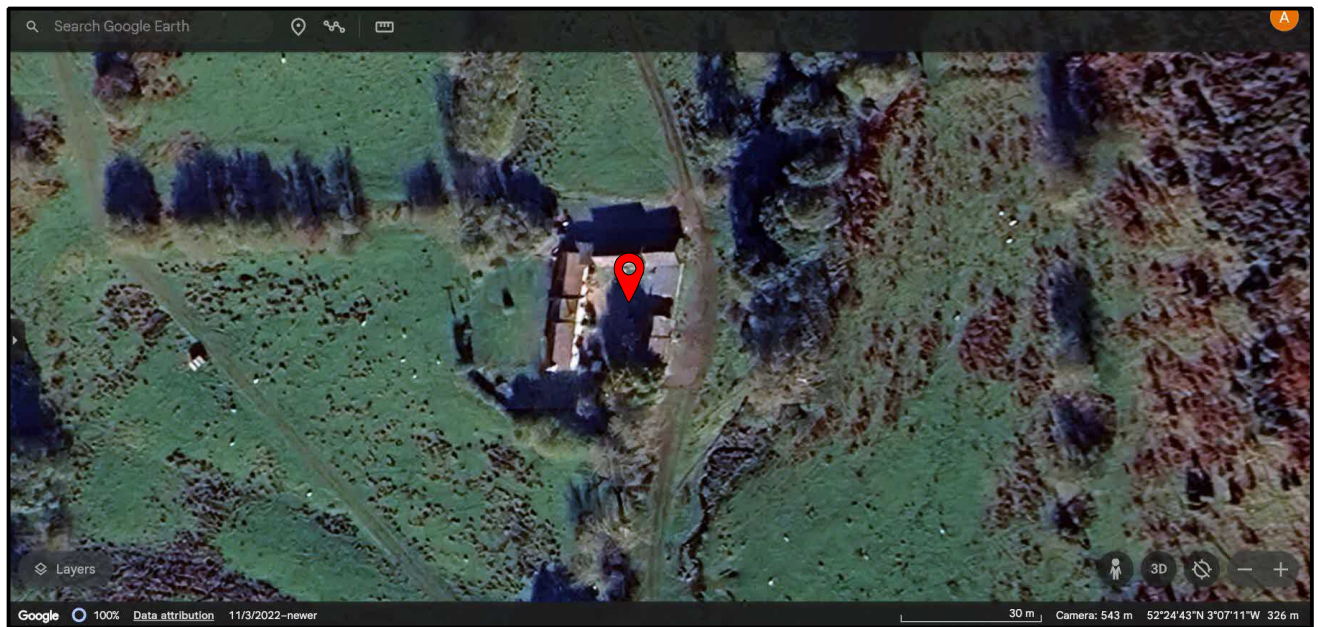


Figure 1. Site Location Plan

Site location plan (A) and aerial view (B) of Llantroft, Newcastle, Shropshire. Images courtesy of Google Earth

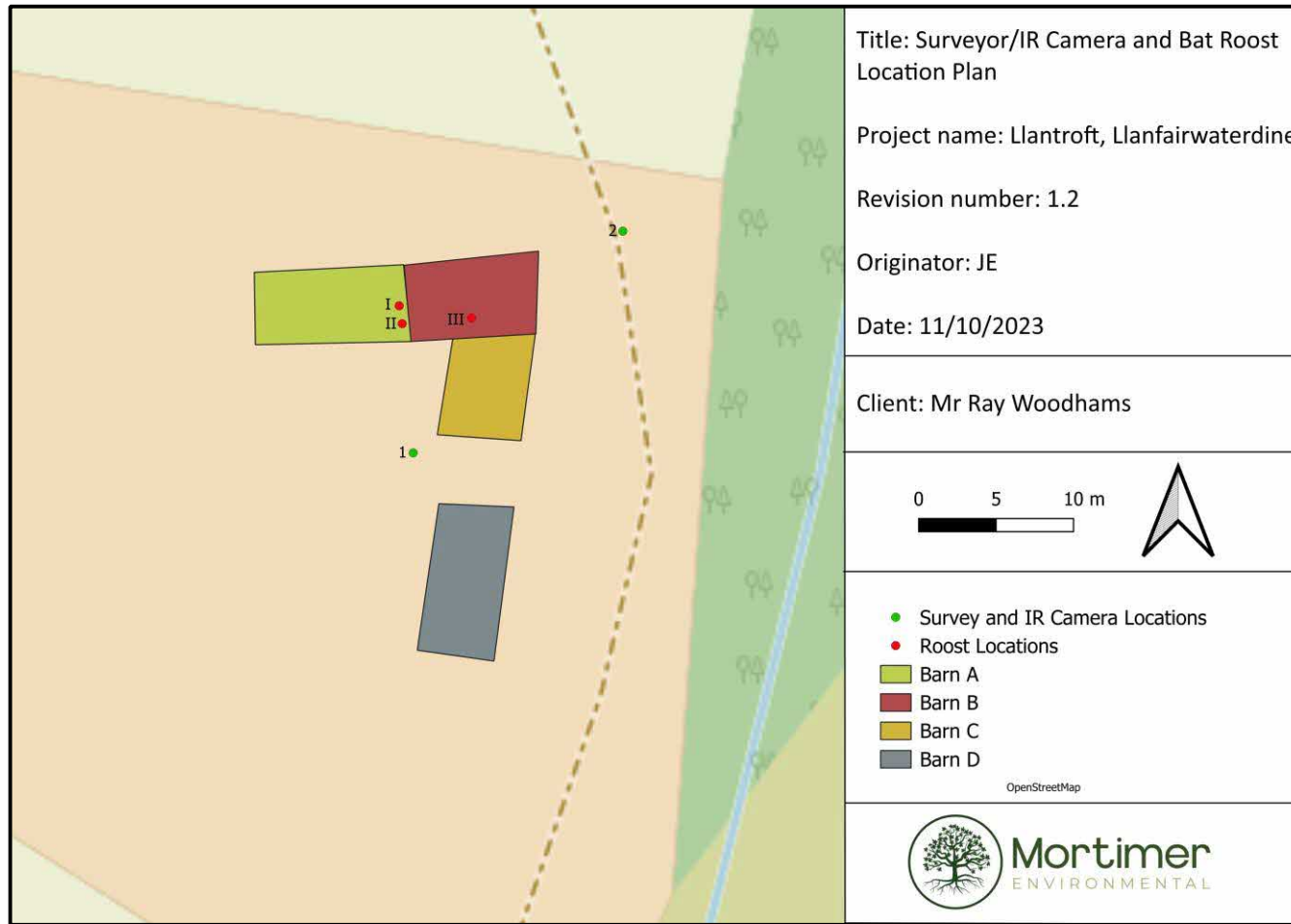


Figure 2. Plan of Barns, Survey Results and Surveyor & IR camera locations at Llantroft.

Plan showing locations of barns subject to surveys, bat emergences and surveyor & IR camera locations at Llantroft for bat surveys were undertaken in 2023.

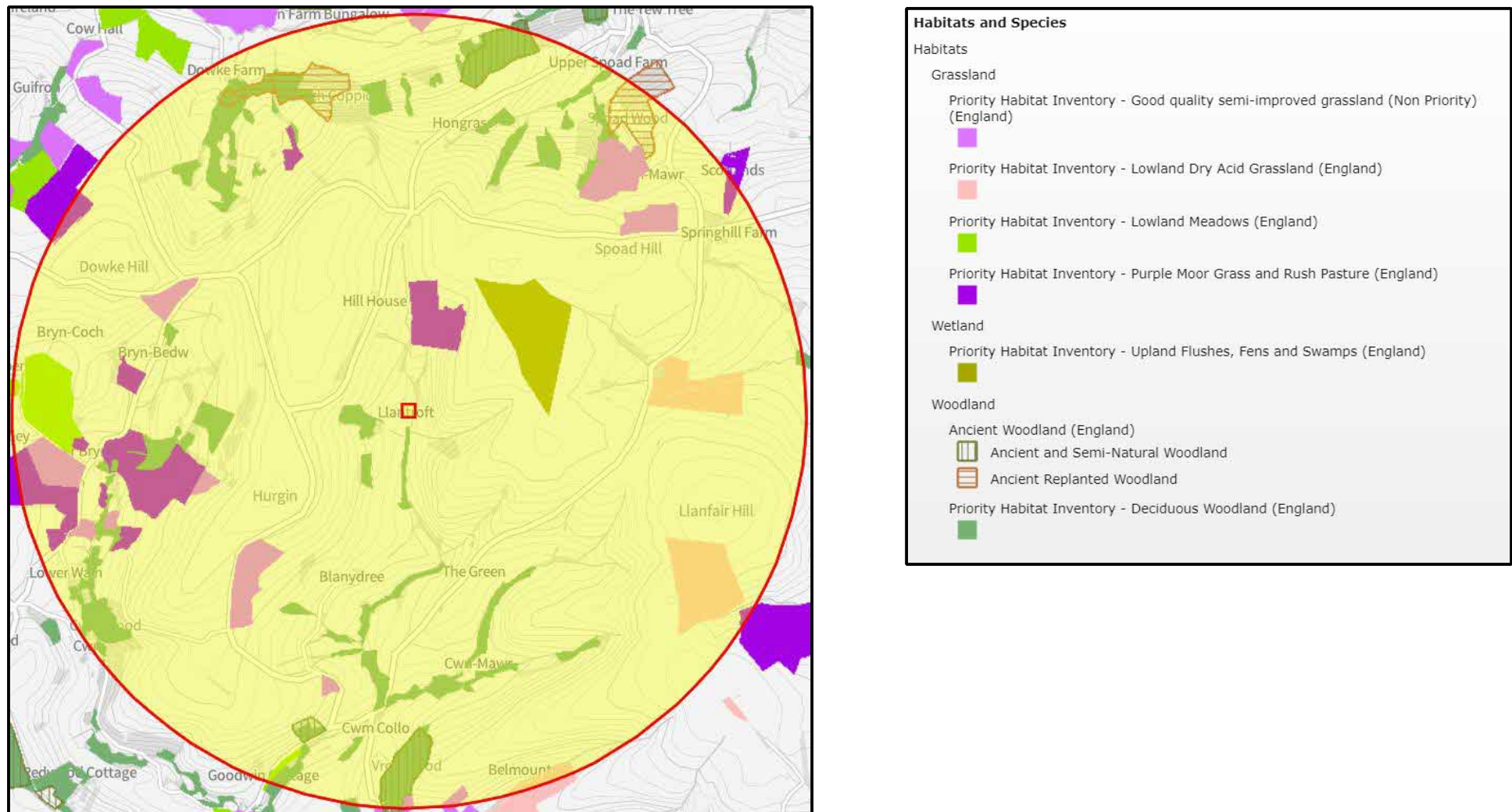


Figure 3. Designated Sites & Priority Habitats

Priority Habitats located within 2 km of Llantroft (yellow circle). Images produced courtesy of Magic maps (<http://www.magic.gov.uk/>), contains public sector information licensed under the Open Government Licence v3.

10. Appendix 1. Table A

Timings and Weather Conditions for Bat Activity Surveys undertaken at Llantroft in 2023.

Date (2023)	Survey Period (hrs)	Sunset Time (hrs)	Weather Conditions	Surveyor Positions (see Figure 2)
25 July	Dusk 20:50 – 23:15	21:13	Temperature range 12 - 14°C Clear (1/8 cloud) Dry (1 - no PPT) Still (BF1)	S1, S2
16 August	Dusk 20:20 – 22:40	20:38	Temperature range 22°C Clear (1/8 cloud) Dry (1 - no PPT) Still (BF1)	S1, S2
05 September	Dusk 19:30 – 21:50	19:50	Temperature range 17 - 19°C Clear (1/8 cloud) Dry (1 - no PPT) Still (BF1)	S1, S2

11. Appendix 2. Guidelines for Proportionate Mitigation

Taken from 'UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats'.
(Reason & Wray, 2023)

Value of receptor	Roost category: note this table relates to a feature's original VALUATION and does not mean that all such sites are 'places of shelter' as referenced in the W&CA or Habitats Regulations. Inclusion in this table does <u>not</u> indicate that a licence <u>would</u> be required; this would be driven by any impacts and the likelihood of an offence.						
	Feeding perches; night-roosts Individual or very small occasional/transitional /opportunistic roosts	Non-breeding day roosts	Mating sites (excluding individual trees and larger swarming sites) Small numbers of hibernating bats	Larger transitional roosts	Hibernation sites	Autumn swarming sites (largely, vesper species which hibernate underground (Myotis, long-eared bats and barbastelle)	Maternity sites
Site	Flexible (in terms of timing and type)	Flexible (in terms of timing and type)	Flexible (type); do not leave bats without a roost	Flexible (in terms of timing and type)			Flexible (type); do not leave bats without a roost
Local							
District		Like-for like replacement; no timing constraints	Like-for like replacement; do not leave bats without a roost	Like-for like replacement; do not leave bats without a roost	Like-for like replacement (as close as possible or better); do not leave bats without a roost	Like-for like replacement (as close as possible or better); do not leave bats without a roost	Like-for like replacement (as close as possible or better); do not leave bats without a roost
County					Like-for like replacement (as close as possible or better); do not leave bats without a roost	Like-for like replacement (as close as possible or better); do not leave bats without a roost	Like-for like replacement (as close as possible or better); do not leave bats without a roost
Regional					Like-for like replacement (as close as possible, or better); do not leave bats without a roost; erected (if possible) to be available in relevant season before original removed	Like-for like replacement (as close as possible, or better); do not leave bats without a roost; erected (if possible) to be available in relevant season before original removed	Like-for like replacement (as close as possible, or better); do not leave bats without a roost; erected (if possible) to be available in relevant season before original removed
National					As agreed with SNCB	As agreed with SNCB	As agreed with SNCB

12. Appendix 3. Table B

Results of Bat Activity Surveys at Llantroft in 2023.

	Date (2023)	Surveyor Position	Bat Species	No. Observations	Behaviour Recorded* (For roost locations see Figure 2 & Appendix 3)
Survey Replicate 1	25 July	S1	Common pipistrelle	6	E, C (roost location I)
			Soprano pipistrelle	2	E, C (roost location I)
		S2	Common pipistrelle	2	C
			Soprano pipistrelle	3	E, F (roost location I)
			Noctule	1	C
Survey Replicate 2	16 August	S1	Common pipistrelle	2	C, F
			Soprano pipistrelle	2	E, C (roost location I)
			Noctule	1	C
			Myotis spp.	5	E, R, C (roost location III)
			Serotine	1	C
			Unconfirmed - potentially serotine	2	E (roost location II)
		S2	Common pipistrelle	4	E, C, F (roost location I)
			Soprano pipistrelle	3	C
			Noctule	1	C
Survey Replicate 3	05 September	S1	Common pipistrelle	1	F
			Soprano pipistrelle	1	C
			Noctule	1	C
			Myotis spp.	4	E, R (roost location III)
			Myotis spp.	2	F
		S2	Common pipistrelle	2	E, F (roost location I)
			Soprano pipistrelle	4	C, F
			Noctule	1	C
			Myotis spp.	3	C
			Brown long-eared	2	C

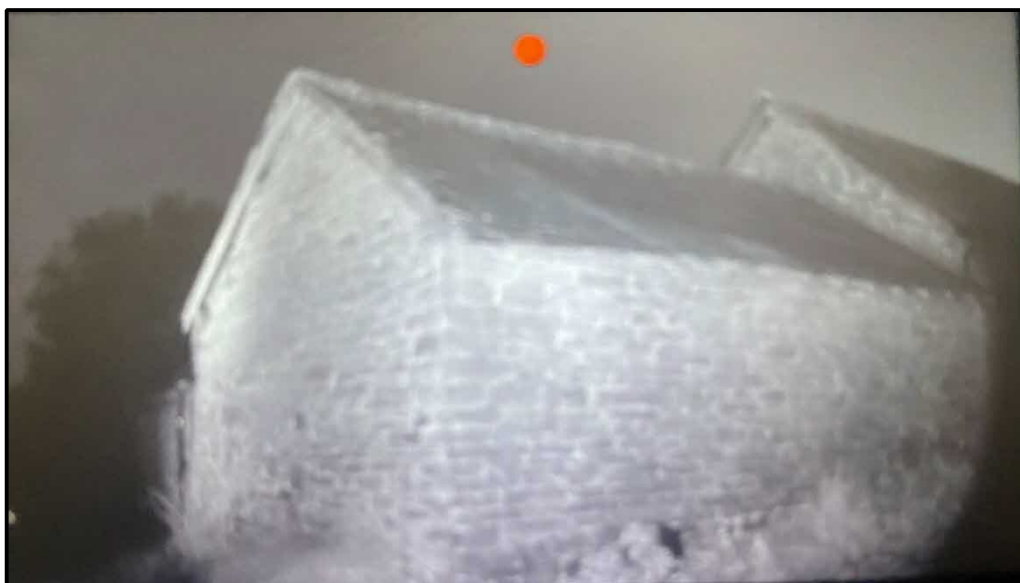
* E – emergence from roost, R – return to roost, F – foraging, C – commuting, S - socialisation

13. Appendix 4: IR Camera Images

Photographs showing field-of-view images captured from IR cameras used during the dusk emergence surveys undertaken in 2023 at Llantroft (images captured during darkest point of survey). Surveyor locations (S1 & S2) are shown in Figure 2.



Surveyor Location 1



Surveyor Location 2

14. Appendix 5. Bat Roost Locations

Photographs showing the locations of bat roosts and access points at Llantroft during 2023. Roost locations are circled in blue, with emerging / returning bats circled in yellow. Videos of bats emerging from roosts can be found in Table 3.



PLATE 1: Roost Location I

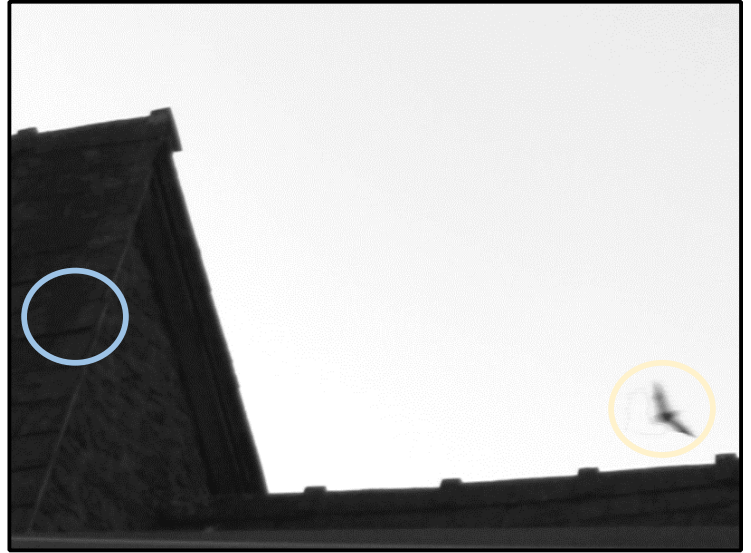


PLATE 2: Roost Location II



PLATE 3: Roost Location III