



**envirotech**

Ecological Consultants  
Environmental and Rural Chartered Surveyors

## BAT, BARN OWL & NESTING BIRD SURVEY AT

Crow Trees Brow, Chatburn



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## ***Accuracy of report***

This report has been compiled based on the methodology as detailed and the professional experience of the surveyor. Whilst the report reflects the situation found as accurately as possible, bats, nesting birds and barn owls are wild and can move freely from site to site. Their presence or absence detailed in this report does not entirely preclude the possibility of a different past, current or future use of the site surveyed.

We would ask all clients acting upon the contents of this report to show due diligence when undertaking work on their site and or in their interaction with bat species, nesting birds and or barn owls. If bats, nesting birds or barn owls are found during a work programme and continuing the work programme could result in their disturbance, injury or death either directly or indirectly an offence may be committed.

These species may only be disturbed, injured or killed under licence.

If in doubt, stop work and seek further professional advice.

## ***Quality and Environmental Assurance***

This report has been printed on recycled paper as part of our commitment to achieving both the ISO 9001 Quality Assurance and ISO 14001 Environmental Assurance standards. Envirotech has been awarded the gold standard by the Cumbria Business Environmental Network for its Environmental management systems.

Signed



Andrew Gardner BSc (Hons), MSc, MRICS, Dip NDEA  
Director

Author	Emily Peacock	Date	14/07/2022
Checked by	Andrew Gardner	Date	18/07/2022
Report Version	2		
Field data entered	<input type="checkbox"/>		
Report Reference	7903		

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# 1. EXECUTIVE SUMMARY

In April 2022 Envirotech NW Ltd surveyed land off Crow Trees Brow, BB7 4AA. It is proposed that new houses are constructed on the site, barns are converted and a farmhouse renovated.

A daytime inspection was undertaken on 11<sup>th</sup> April 2022. This involved a close inspection of the building for signs of use by bats, barn owls and birds both internally and externally.

An emergence survey was undertaken on 5<sup>th</sup> May and 23<sup>rd</sup> June 2022. This involved four surveyors equipped with bat detectors observing the buildings for signs of emerging bats.

A desk study and data search were also undertaken to ensure the reasonable probable use of the site by bats, barn owls and nesting birds could be determined.

The habitat around the site offers a moderate potential for foraging being relatively enclosed by pasture, hedge and mature trees. There is good connectivity between the site and higher quality foraging areas.

The farm house, the cheese room and the dairy barn are confirmed to be used by bats for roosting. No more than 11 soprano and common pipistrelles were seen emerging. These results remained consistent across both surveys with some variations in density of bats and roost locations.

There is potential for barn owls however no evidence of use was found.

There is potential for nesting birds and old inactive nests have been found. One active nest was observed in the open barn.

There is no specific mitigation for barn owls and it is advised that some provisions for nesting birds be included in the proposed development. Work should be undertaken in such a way that it does not interfere with active nests.

There is specific mitigation required in order to replace or where possible retain bat roosts.

On the basis of the survey work carried out, under guidance provided in respect of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, and considering the plans for the site, it is considered that a Protected Species Mitigation Licence (PSML) for bats will be required.

## 2. INTRODUCTION

### 2.1 Site Description

The site lies in a semi-rural location within the village of Chatburn. The surveyed buildings comprise a rendered farmhouse, a stone built dairy barn, attached outbuildings, an open barn and a collection of smaller outbuildings such as a coal store and a green house. The majority of the buildings are stone built with slate roofs.

There is pasture to the South and fragmented woodland in the local area, the site is in a sheltered position, Figure 1 and 2.





- Site Boundary
- Building Number

Figure 2  
Site Boundary



## **2.2 Proposed Works**

It is proposed that the buildings are converted and renovated to form residential accommodation. The smaller buildings will be demolished. There will be significant internal and external alteration to the buildings affected.

The timing of work is unknown.

## **2.3 Aims of Study**

To ensure that the proposed development does not affect any bat species, barn owls or nesting birds which are listed under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and or the Wildlife and Countryside Act (1981) (as amended) the survey will:-

- ⇒ Identify past and/or current use of the site by bat species, barn owls and nesting birds.
- ⇒ Assess the likely impact of the proposed development on these species.
- ⇒ Provide an outline mitigation/compensation scheme (if required) for bat species, barn owls and nesting birds affected by the development.



## 3. METHODOLOGY

### 3.1 Bats

#### 3.1.1 Rationale of Survey

The methods used comply with those described in Hundt (2012) and Collins, J (ed) (2016). The following extracts from Collins, J (ed) (2016) are used to determine the appropriate level of survey in accordance with the guidelines.

**Key point 1:** Guidelines should be interpreted using professional expertise.

*“The guidelines do not aim to either override or replace knowledge and experience. It is accepted that departures from the guidelines (e.g. either decreasing or increasing the number of surveys carried out or using alternative methods) are often appropriate. However, in this scenario an ecologist should provide documentary evidence of (a) their expertise in making this judgement and (b) the ecological rationale behind the judgement.*

*Equally, it would be inappropriate for someone with no knowledge or experience to read these guidelines and expect to be able to design, carry out, interpret the results of and report on professional surveys as a result, simply following the guidelines without the ability to apply any professional judgement.”* Section 1.1.3

**Key point 2:** Guidelines are descriptive rather than prescriptive and must be adapted on a case by case basis.

*“The guidelines should be interpreted and adapted on a case-by case basis according to site-specific factors and the professional judgement of an experienced ecologist. Where examples are used in the guidelines, they are descriptive rather than prescriptive.”* Section 1.1.3

**Key point 3:** Surveys should be undertaken where it is reasonably likely bats are present and may be affected by the proposal. Where bats are not likely to be present and or will not be affected by the proposal, survey could but need not be undertaken.

*“It is reasonable to request surveys where proposed activities are likely to negatively impact bats and their habitats. However, surveys should always be tailored to the predicted, specific impacts of the proposed activities (see Section 2.2.2). Excessive, speculative surveys are expensive and cause reputational damage to the ecological profession.”* Section 2.1

**Key point 4:** Surveys should be proportionate to predicated impacts.

*“When planning surveys it is important to take a proportionate approach. The type of survey (or suite of surveys) undertaken and the amount of effort expended should be proportionate to the predicted impacts of the proposed activities on bats. Clause 4.1.2 of BS42020 (BSI, 2013) states that ‘professionals should take a proportionate approach to ensure that the provision of information with the (planning) application is appropriate to the environmental risk associated with the development and its location”* Section 2.2.5

### 3.1.2 Desk Study

*“The aim of a desk study for bats is to collate and review existing information about a site and its surroundings to inform the design of subsequent bat surveys.”* Section 4.2.1

*“As a minimum, it is recommended that background data searches should be carried out upto 2km from the proposed development boundary.”* Section 4.2.2

**Key point 5:** A records search was undertaken of the Envirotech and LERN dataset. No additional data searches were considered necessary at this site as the bat species likely to be found in the local area could be adequately determined from the records searched.

*“The desk study records provide contextual information for the survey design stage as well as the evaluation of the survey results. They should be interpreted to identify:*

- *If proposed activities are likely to impact on a SAC or the qualifying feature of a SAC (this may trigger the need for a HRA);*
- *If the proposed activities are likely to impact on other designated sites and thus require consultation with relevant bodies;*
- *Any species (or genera) confirmed/thought to be present;*
- *Any bat roosts that will be impacted (on or off-site);*
- *If it is likely that the CSZs of bats from roosts off-site will be impacted (see Section 3.7);*
- *If there are any rare species in the area that may require species-specific survey methodologies.”* Section 4.2.3

**Key point 6:** Likely bat roosting and feeding sites on and adjacent to the site were identified from aerial photography and the use of Google Street View for ground level analysis. This allows us to identify habitat connectivity and potential foraging areas at a landscape level. We are also able to relate the results of the records search against habitat types and the species of bat which could and or are recorded in the local area. Identification of bat species which may occur locally allows for additional field based surveys to be correctly targeted.

### 3.1.3 Field Survey

**Key Point 7:** To ground truth the desktop data (Key point 5) a field assessment of habitat at and adjacent to the site was made. This allows us to cross check our interpretation of aerial photography with actual habitat on the ground. There is occasionally significant change between landscape detailed on aerial photographs and habitat on the ground. Buildings, hedgerows and roads may be built or removed. For example occasionally woodland is felled or has been replanted.

*“A preliminary ecological appraisal for bats is a walkover of the proposed development site to observe, assess and record any habitats suitable for bats to roost, commute and forage both on site and in the surrounding area (it is important that connectivity within the landscape is also considered at this stage). The aim is to determine the suitability of a site for bats, to assess whether further bat surveys will be needed and how those surveys should safely be carried out.”* Section 4.3.1

**Key point 8:** A thorough inspection of the walls and eaves was undertaken using a torch and short focus binoculars to locate potential bat roosts. Gaps and cracks in the walls or under the eaves and soffits may provide access to the buildings by bats. Where possible all gaps and cracks

judged to be of a suitable size for bats to take entry to the buildings were inspected either from the ground or the top of a ladder. Where appropriate an endoscope was used to fully inspect these gaps internally.

**Key Point 9:** A thorough inspection of the roof was undertaken using a torch and short focus binoculars to locate potential bat roosts. Gaps under the roof coverings, ridge lines and flashing may provide suitable roost sites for bats. All gaps and cracks judged to be of a suitable size for bats to take entry to the buildings were inspected either from the ground or the top of a ladder. Using short focus high quality binoculars and a torch to illuminate any gaps underneath the roof coverings it is often possible to see residual evidence of bats such as droppings, scratch, grease and urine staining, lichen build-up from increase nutrient levels or bats themselves.

**Key Point 10:** A thorough inspection of the interior and exterior of the buildings to look for signs of bats such as grease or scratch marks, bat droppings and feeding detritus was made. Windows and or other items in and around the site were inspected for urine staining.

**Key Point 11:** A thorough search for detritus associated with bat feeding perches and roosts was undertaken. These roosts are usually in roof voids, under eaves and open buildings.

**Key Point 12:** Internal voids and rooms were assessed where it was considered bats may be able to take access. Indications of use such as grease and scratch marks, urine staining, droppings, desiccated young bats, dead bats in water tanks and cobweb free areas under the roof and roof supports were all assessed.

*“The time needed for a preliminary roost assessment will vary according to the complexity of the structure and the number of ecologists deployed. Large structures with multiple roof spaces, multiple human access points and/or abundant voids and crevices will clearly take some time to understand and search thoroughly. Also, structures may contain several different bat roosts of different species each with their own access point and used at different times of the year. This all adds time to the survey.”* Section 5.2.7

**Key Point 13:** It is the considered opinion of the surveyors who undertook this survey that the time taken to undertake the survey was sufficient given the complexity of the buildings, methods used, time of year and species of bat which may be present.

*“If the structure has been classified as having low suitability for bats (see Table 4.1), an ecologist should make a professional judgement on how to proceed based on all of the evidence available.*

*If sufficient areas (including voids, cracks and crevices) of a structure have been inspected and no evidence found (and is unlikely to have been removed by weather or cleaning or be hidden) then further surveys may not be appropriate.*

*Information (photographs and detailed descriptions) should be presented in the survey report to justify this conclusion and the likelihood of bats being present at other times of the year estimated. If there is a reasonable likelihood that bat roosts could be present, and particularly if there are areas that are inaccessible for survey, then further surveys may be needed and these should be proportionate to the circumstances (see Section 2.2.5).*

*If no suitable habitat for bats is found, then further surveys are not necessary. In this scenario, it is necessary to document how this decision has been reached; photographs and detailed descriptions should be made available as evidence of a robust survey and assessment.”* Section 5.2.9

**Key Point 14:** The suitability of a sites potential for roosting is categorised by BCT Collins, J (ed) (2016) as Negligible, Low, Moderate and High and then suggests a level of survey effort required to be confident in the absence of bats. We consider this range to be too coarse, there being a transition between each level of suitability which is not reflected in the guidelines. We have a modified schedule of suitability using a risk level between 0 and 7. See Key points 1, 2, 3, 4 and 13 which justify this approach.

Suitability Collins (2016)	Description Roosting habitats	Risk Level	Survey level
<b>Modified from Collins (2016)</b>			
Negligible	No features on site which could be used by roosting bats.	0	No additional survey required
	Negligible habitat features on site likely to be used by roosting bats.	1	
	Features on site could only be used by bats occasionally, habitual use in or between years is unlikely	2	Surveyor to make judgement as to if additional surveys likely to provide useful information about the site. RAM's and provision of new roosting provision to be recommended
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically but no evidence of use found, could provide roost sites which are used in or between years.	3	
	One or more potential roost sites. Potential for habitual use in or between years. Unlikely to contribute to long term favourable conservation status of the species.	4	Single survey (dusk or dawn) at appropriate time of year May to August. Roosts are often transitional, surveys early and late in season may be appropriate (April and September)
	Potential for habitual use in or between years, roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). May be used for transitional or day roost sites by common bat species. Function likely to support favorable conservation status of bats locally.	5	Single survey (dusk or dawn) between May and August.  Roosts are often transitional, surveys early and late in season may be appropriate. Consider additional survey in transitional period April and September
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only - the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	6	Two surveys (dusk or dawn) between May and August. Consider additional survey in transitional period April and September
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	7	Three surveys (at least one dawn) between May and August. Consider additional survey in transitional period April and September

**Table 1 Risk and need for additional survey following preliminary appraisal for bats.**

**Key Point 15:** Having undertaken a detailed inspection of the site, additional presence/absence surveys were required:

A roost has been identified, but more information is needed in order to assess its importance and the potential significance of any impacts on it. Information may be needed on the number of bats within the colony, the access points, the species, and flight paths to and from the roost	<input type="checkbox"/>
A comprehensive internal inspection survey is not possible because of restricted access, but given the sites location, bat species likely to be found in the local area, and potential roost sites, the structure or tree has a reasonable likelihood of supporting bats	<input type="checkbox"/>
A comprehensive preliminary roost assessment is not possible because it is a sub-optimal time of year, or there is a risk that evidence of bat use may have been removed by weather, human activities or the presence of livestock	<input type="checkbox"/>
A preliminary roost assessment has not ruled out the reasonable likelihood of a roost being present, but no definitive evidence of the presence of bats has been recorded.	<input checked="" type="checkbox"/>
A preliminary roost assessment <u>has ruled out the reasonable likelihood of a roost being present</u> , but the surveyor was on site at a time of day when additional survey information could be gained to provide additional contextual information about the site and the opportunity to do so can be taken.	<input type="checkbox"/>

*Table 2 Need for additional survey following preliminary ecological appraisal for bats.*

**Key Point 16:** Potential roost locations were identified during the initial survey and were all adequately covered during the emergence survey. There was either direct visual coverage, with appropriate overlap between surveyors, coverage by infrared video camera or areas with limited visual coverage were noted and surveyors were positioned such that any bats emerging from these areas could be distinguished from bats which had commuted into the site.

**Key Point 17:** Bat commuting routes and activity in and around the site were observed and noted. The surveyors were either in visual and verbal contact or used 2-way radios to communicate bat activity over the site to each other. This reduced the potential for double counting or miss-recording bats which have flown into rather than emerged from the site or vice versa.

**Key Point 18:** A passive pre-emergence scan was made around potential roost sites with a bat detector set at 17 KHz. This would detect pre-emergence social chatter from bats. The surveyors were also listening for audible chatter during the inspection.

**Key Point 19:** An active scan was made with a bat detector post emergence. The surveyors adjust the frequency of the bat detector in response to bat sightings to confirm species. Some bat detectors have auto-tuning capability, see Table 3.

Bat Detector	Capabilities	Used
Bat Box Duet	Heterodyne and frequency division, manual tuning.	<input type="checkbox"/>
Echo Meter EM3(+)	Heterodyne, frequency division or time expansion. Recording capability, auto tuning.	<input type="checkbox"/>
Echo Meter Touch 2 Pro	Heterodyne, frequency division or time expansion. Recording capability, auto tuning.	<input checked="" type="checkbox"/>
Anabat	Zero Crossing, recording capability.	<input type="checkbox"/>

Table 3 Bat detectors used and capabilities.

### 3.1.4 Timing

*“Recorded bat activity is dependent on the prevailing conditions at the time of the survey, which vary temporally (through the night, between nights, through the seasons and between years) and spatially (dependent on latitude and longitude).”*

*Bat activity is also determined by what the bats are doing at different times of the year; in general:*

- *April surveys may detect transitional roosts.*
- *May to August surveys may detect maternity colonies and males/non-breeding females in summer roosts.*
- *August is particularly good for maximum counts of both adults and juveniles and can be useful to observe roost re-entry because the young bats are inexperienced at flying and are often easy to observe as they try to enter the roost.*
- *August to October surveys may detect mating bats. September and October surveys may detect transitional roosts used after bats have dispersed from maternity colonies but before they go into hibernacula (although October may be less suitable for surveys in more northerly latitudes).*

*It is important to stress that prevailing conditions and local trends in bat activity (for example, when were the young born in the year in question?) should be considered and recorded to provide context to survey results. Section 7.1.7*

**Key Point 20:** Bats use of sites varies throughout the year. The “most active season” for bats is April - September. For assessing maternity colonies the optimum time period is May to August. Surveys should however be chosen to maximize the likelihood of detecting bat activity which may be between April and October for summer roosts and December and February for winter hibernation. There is overlap between the two periods which should be addressed by survey where appropriate.

The timing of the survey should therefore account for the functionality and potential of the site to be used by bats for different purposes. Some sites may be unsuitable for maternity roosting but have a high potential for transition or day roosts. Some sites may have the potential to perform several functions.

Mitchell-Jones (2004) indicate that:

*“The presence of a significant bat roost (invariably a maternity roost) can normally be determined on a single visit at any time of year, provided that the entire structure is accessible and that any signs of bats have not been removed by others”.*

Bats use different types of roost at different times of the year. The following roost types/ times shown on Figure 3 are taken from Mitchell-Jones (2004) and were considered in the assessment of this site. Times of the year given in Figure 3 should however be considered in light of factors such as fluctuations in temperatures between years, altitude, weather conditions, species and latitude which all affect the movement of bats between roost sites.

*“An experienced surveyor should carry out surveys at a time that gives them the highest chance of establishing whether or not bats are present and how they are using the habitat including roosts). Actual timings will depend on a number of factors including the surveyor’s knowledge and experience of the site and surrounding habitats, existing data records, possible bat species present, geographical location, weather conditions in that particular year and, of course, the aims and objectives of the survey.”* Section 2.4

A table showing the timing of the surveys in relation to the bat year is shown on Figure 3.



This site was assessed at the following periods in the bat year. Some roost types can be clearly identified when not in use or can be inferred from habitat type/residual evidence.

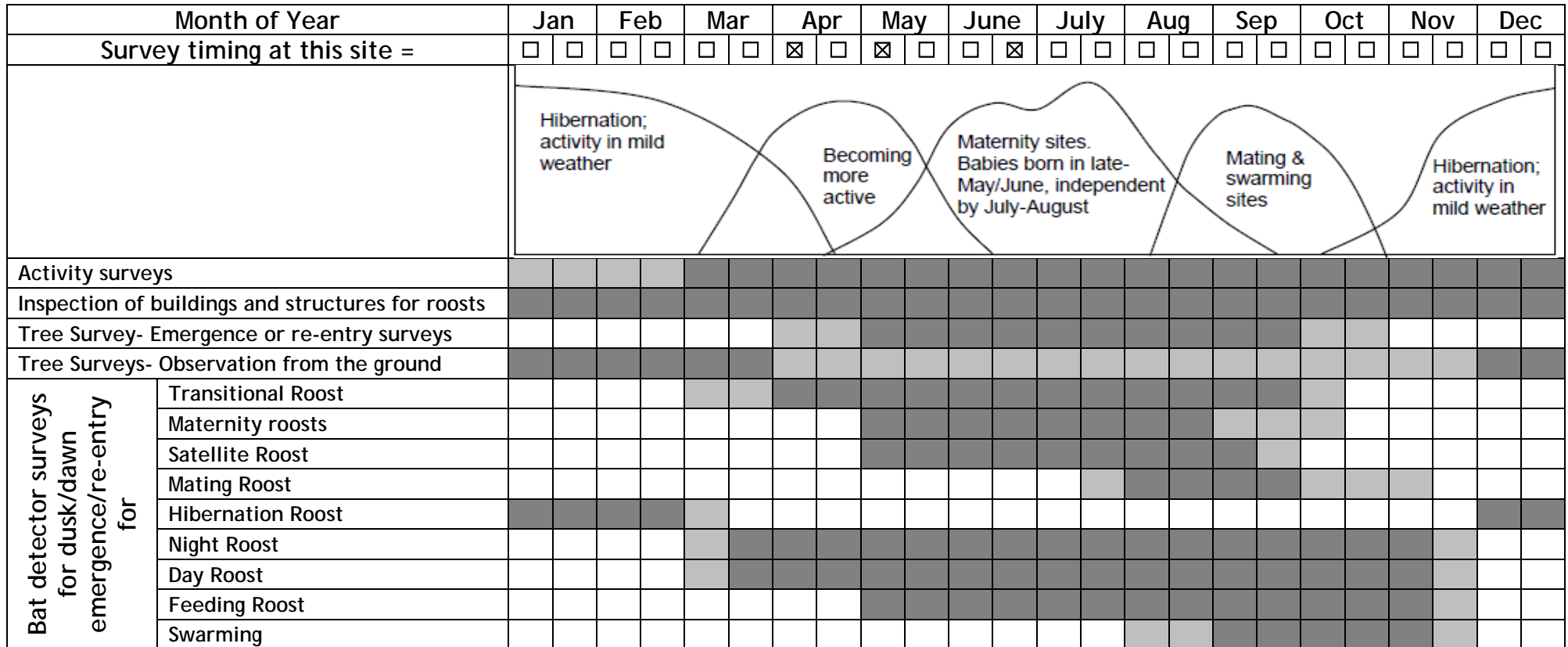


Figure 3 Survey timing in the bat year from Mitchell-Jones (2004).

**Key Point 21:** An assessment of the species of bat likely to be found at the survey site has been made (Key Point 5, 6, 7 and 8). An assessment of the weather and time of year before and during the survey was also made. The duration and timing of survey was considered proportionate to the species of bats likely to be found, potential roost types, weather and cover around potential roost entrances.

**Key Point 22:** *“When presence is established, this should trigger roost characterisation surveys unless sufficient information has already been collected to inform the impact assessment and design of mitigation measures.” - Section 7.2.1*

Based on the above criteria, two dusk activity surveys were undertaken. The number of surveys and timing are in accordance with Collins, J. (ed) (2016) Table 3, Figure 3 and Figure 5 because a daytime survey could not rule out the presence of bats on site. The two dusk surveys produced very similar results allowing the risk to be accurately determined.

**Key Point 23:** Sunset is a very poor indicator of bat emergence times as lux levels associated with it are highly variable and are dependent upon atmospheric conditions. A combination of sunlight, high pressure, dry air dust particles and cloud cover can create a prolonged sunset. Delayed emergence can occur during very high pressure systems, which intensify and prolong sunsets. This can delay or bring forward emergence considerably and can skew conclusions as to how far bats have travelled from their roost if sunset is used as the time base from which activity is then monitored. Variations in local conditions also do not allow for comparisons to be made between emergence at different sites on the same day. The time of year also affects the time it takes to go dark with light levels falling and rising more quickly in spring and autumn than in summer when the arc of the sun is higher in the sky.

There is a variable correlation between sunset and lux levels hence we consider they should be used independently of each other. Lux levels provide a far greater degree of certainty in respect of identifying likely bat emergence time and commuting distances, time after sunset is a poor substitute for analysing bat activity information

Emergence of *Pipistrelle* spp. usually commences at 200lux (from maternity roosts when bats have a high energy requirement) and 40lux from non-breeding and transitional roosts. Noctule are also an early emerging species at around 200lux. Emergence for whiskered/Brandts occurs between 40 and 4 Lux with brown long-eared and Daubenton's using emerging when light levels fall below 4 Lux.

During the activity survey lux levels were monitored by taking an average light reading, facing away from any potential roost sites at an angle of 45 degrees.

The activity survey continued until such a time as bat flight heights, emergence points and activity could no longer be reasonably determined. At this point the no additional useful information about the site could be gained

Date of visit		11th April 2022		5 <sup>th</sup> May 2022		23 <sup>rd</sup> June 2022	
Site inspection		1hr		1.5hr		1.5hr	
Weather conditions	Cloud	30%		Nil		20%	
	Wind	Nil		Nil		Nil	
	Rain	Nil		Nil		Nil	
	Temperature	12°C		10°C		13°C	
Emergence survey	Start/ Light Level	N/A	250 lux	20:30	250 lux	21:45	250 lux
	End/ Light Level	N/A	0.2 lux	22:00	0.2Lux	23:15	0.2Lux
Surveyors		AG, EP		HG, EP, MT, AR		HG, EP, BF, JS	

Table 4 Survey dates and times.

Weather conditions were considered acceptable for a survey at the site given the potential for use of the site and species which may be present. Bats are usually active with temperatures above 7 degrees Celsius.

#### Surveyors

1. (AG) Mr Andrew Gardner BSc (Hons), MSc, MRICS  
Natural England Bat Class Licence (Level 2)
2. (EP) Miss Emily Peacock  
Natural England Bat Class Licence Agent (Level 1)
3. (HG) Mrs Hannah Gardner BSc (Hons), MSc, MRICS, CEnv  
Natural England Registered Roost Visitor (Trainee)
4. (MT) Mr Matthew Thompson BSc (Hons)  
Natural England Bat Class Licence (Level 2)
5. (AR) Ms Alison Rothwell  
Natural England Bat Class Licence Agent (Level 1)
6. (BF) Mr Bradley Foster BSc (Hons)  
Natural England Bat Class Licence Agent (Level 1)

7. (JS) Mr Jack Sykes BSc (Hons), MCIEEM  
Natural England Bat Class Licence (Level 2)

## **3.2 Barn Owls**

### *3.2.1 Rationale*

Shawyer (2011) states

“Surveys are a sampling activity where discrete information is gathered from a specific site or wider area.

They usually represent a single case study but can involve repeat visits to a site. A survey is distinguishable from monitoring which usually takes place at regular intervals, often yearly, the main aim of which is to investigate the progress of a research or conservation objective and may involve the study of population dynamics in the species concerned.

The purpose of this survey is, in accordance with Shawyer (2011) to determine the:

- i. Distribution, abundance and breeding status of barn owls in the area of interest;
- ii. Extent to which barn owls are likely to be affected by a proposed development, and where the presence of this bird has been confirmed;
- iii. To enable an appropriate mitigation strategy to be designed and implemented.

In particular the survey is necessary for the purposes of:

- i. Ensuring legal compliance;
- ii. Determining a planning application;
- iii. Avoiding the enforced cessation of development work should an active breeding site be discovered that would be directly or indirectly damaged or disturbed through continuance of the work.

### *3.2.2 Desk Study*

**Key Point 15:** A desk study was conducted within 2km of the site. The purpose of this initial study was to assess the probability of barn owl occurrence on the site and to provide an estimate of its population size and relative abundance at the local, regional and national levels. This enables the significance of any adverse effect from a proposed development to be determined not only on the site itself but within the wider area and provides important guidance for any future mitigation strategy.

**Key Point 16:** Where the initial desk study has revealed a reasonable likelihood that barn owls may be present in the general area of interest (and in many rural areas of Britain this will be a high probability) or where a barn owl recovery programme is suspected or has been identified there, a field survey must then be undertaken.

### *3.2.3 Field Survey*

Field surveys are essential to determine the full status of the species in the study area, the potential effect of the development and the mitigation, compensation or enhancement measures to be applied. They should aim to locate and confirm the distribution, abundance and

breeding status of barn owls as well as the relative importance of the habitats they utilise within the survey area.

Cavities, mostly those located in the main trunk or crown of mature hollow trees, provide almost one third of natural breeding sites in the UK Shawyer (2011). Fissures in rock faces, including quarries, make up a small proportion of other breeding sites, particularly in northern Britain.

#### 3.2.3.1 *Defining and recording a Potential Nest Site (PNS)*

**Key Point 17:** Trees and built structures were observed at close quarters to establish if they possess any holes, cavities or chambers and where these were identified, using appropriate techniques, they were checked to determine if they were of a suitable size and structure to provide a suitable barn owl nest site. Only those sites which possess a hole of at least 80 mm diameter (about tennis ball size) or vertical slot of this width backed by a sufficiently large and dark chamber with a floor area greater than 250 mm x 250 mm, were recorded, as a Potential Nest Sites (PNS).

#### 3.2.3.2 *Defining and Recording an Active Roost Site (ARS)*

**Key Point 18:** These are defined as a place at which breeding does not occur, but where the bird is seen or heard regularly or its current or recent presence (last 12 months) can be recognised by signs of thick, chalky-white, streaky droppings (commonly referred to as 'splashing', 'whitewash', 'mutes' or 'liming') which is usually accompanied by regurgitated pellets and moulted feathers. Pellets and feathers are diagnostic and provide evidence that the roost site is that of a barn owl rather than another bird of prey such as a kestrel (*Falco tinnunculus*), little owl (*Athene noctua*) or tawny owl (*Strix aluco*) which also excrete, projectile chalky-white droppings but whose feathers and pellets differ in appearance.

**Key Point 19:** Any ARS were recorded as being occasionally-used or regularly-used, depending on the amount of pellets, droppings and feathers that are revealed at the site. ARS were also recorded as a winter, spring, autumn or summer roost. This can usually be determined by the age of pellets and the presence or absence of moulted wing and tail feathers at the site.

#### 3.2.3.3 *Defining and Recording a Temporary Rest Site (TRS)*

**Key Point 20:** Small spots of thick, chalky cream-coloured droppings that can often be seen underneath a tree, in a building or on a fence post and which are sometimes accompanied by an occasional pellet or body feather, can indicate a temporary night-time stopping-off place of a barn owl. Although this level of observation is not an essential requirement of a barn owl survey, when these signs are identified they are best described and recorded as a Temporary Rest Site (TRS) rather than an ARS.

#### 3.2.3.4 *Confirming an Occupied Breeding Site (OBS)*

**Key Point 21:** To confirm the presence of an Occupied Breeding Site (OBS), e.g. one where breeding was taking place or where it had done so in the recent past a detailed inspection of the PNS and ARS previously identified is carried out. This is accomplished by checking for the presence of adult barn owls, their moulted feathers, pellets, eggs, egg shells, chicks or down.

### **3.3 Nesting Birds**

#### **3.3.1 Rationale**

The purpose of the survey is to determine the:

- i. Distribution, abundance and breeding status of birds in the area of interest;
- ii. Extent to which birds are likely to be affected by the proposed work; and where the presence of nesting birds has been confirmed;
- iii. To enable an appropriate mitigation strategy to be designed and implemented.

In particular the survey is necessary for the purposes of:

- i. Ensuring legal compliance;
- ii. Determining a planning application;
- iii. Avoiding the enforced cessation of development work should an active breeding site be discovered that would be directly damaged or disturbed through continuance of the work.

#### **3.3.2 Desk Study**

**Key Point 22:** A desk study was conducted for the area within 2km of the site. The purpose of this initial study was to assess the probability of nesting birds' occurrence on the site and to provide an estimate the population and relative abundance at the local, regional and national levels. This enables the significance of any adverse effect from a proposed development to be determined not only on the site itself but within the wider area and provides important guidance for any future mitigation strategy.

**Key Point 23:** Where the initial desk study has revealed a reasonable likelihood that nesting birds may be present in the general area of interest (and in many rural areas of Britain this will be a high probability) a field survey must then be undertaken.

#### **3.3.3 Field Survey**

Field surveys are essential to determine the full status of the species of nesting bird in the study area, the potential effect of the development and the mitigation, compensation or enhancement measures to be applied. They should aim to locate and confirm the distribution, abundance and breeding status of birds as well as the relative importance of the habitats they utilise within the survey area.

**Key Point 24:** Cavities, mostly those located in the main trunk or crown of mature hollow trees, gaps, cracks and the eaves and internal spaces of buildings, shrubs, scrub and hedges on and adjacent to the development area may all provide suitable nest sites. These were all inspected for indications of past or current nesting and roosting by birds. The species of bird and its relative abundance on site was also assessed where possible based upon droppings, nest shape, size and location, egg remains, feathers and birds seen on site which from their behaviour indicate nesting may occur.

## 4. DEFINITIONS

Definitions used in this report are detailed here, in reference to Hundt (2012) and Collins ed. (2016).

### Building

A structure with walls and a roof, for example a residential property, block of flats, office block, warehouse, garden house, folly, barn, stable, lime kiln, tower, church, former military pill box, school, hospital or village hall. Some buildings have cellars (underground sites) beneath them.

### Built structure

A structure that was made by humans but cannot be described as a building or as an underground site, for example a bridge, wall, monument, statue, free-standing chimney, or derelict building consisting only of walls.

### Underground site

A human-made or natural structure that is entirely or partially underground, for example a cave, cellar, subterranean, mine, duct, tunnel, military bunker, well, or ice house.

### Roost (breeding site / resting place)

The implementation of the EU Habitats Directive provides general definitions for breeding sites and resting places. For bats the two often overlap, which is why in many cases they are both referred to as roosts. Any interpretation of the terms 'breeding sites', 'resting places' and 'roosts' must take into account the prevailing conditions.

Natural England licensing guidelines (Natural England, 2011) discusses the age of roosts and mitigation requirements as well as the period of time bat roosts are protected when not used. The following is reproduced from this document.

"Q. The development site ceased to be inhabited last year and it is prone to vandalism. I found evidence of a maternity roost but all current signs suggest that the site is now abandoned by bats. What should I mitigate for?"

Wildlife Advisers do not use a tightly defined period within which bat need to have used a structure beyond which it is no longer regarded as a bat roost. A structure can be regarded as a bat roost even if not knowingly occupied by bats for a year or two."

The Method Statements mitigation should reflect compensation for a roost at its highest status within recent years. For example, meagre mitigation for an occasionally used, summer, non-maternity roost that had declined from a maternity roost as a result of human induced change to the roosts conditions e.g. vandalism, may not be acceptable to the Wildlife Adviser.

A demolished structure, irrespective of its previous bat occupancy, clearly, ceases to be a bat roost. An intact structure without bat occupancy perhaps after a few years, and more assuredly after five years, also ceases to be a bat roost". [Emphasis added]

Natural England's guidelines are derived from the European Commission's Article 12 guidance on the definition of resting places for European Protected species.



European Commission (2021), section (54) and (59) state

The 2021 guidance states of this offence: *“The protection applies all year round if these sites are used on a regular basis”* (pg 32). It goes on to state: *“Thus, it follows from Article 12(1)(d) that such breeding sites and resting places also need to be protected when they are used only occasionally or are even abandoned but where there is a reasonably high probability that the species concerned will return to these sites and places. If, for example, a certain cave is used every year by a number of bats for hibernation (because the species has the habit of returning to the same winter roost every year), the functionality of this cave as a hibernating site should be protected in summer as well so that the bats can reuse it in winter”* (pg 33).

The guidance also states that breeding sites and resting places “that are used regularly either within or between years, must be protected even when not occupied” (pg 33 and pg 35).

### Resting places: a definition

Resting places are defined here as the areas essential to sustain an animal or group of animals when they are not active. For species that have a sessile stage, a resting place is defined as the site of attachment. Resting places will include structures created by animals to function as resting places, such as roosts, burrows or hides. Resting places that are used regularly, either within or between years, must be protected even when not occupied.

Resting places essential for survival may include one or more structures and habitat features required for:

1. thermoregulatory behaviour, e.g. *Lacerta agilis* (sand lizard);
2. resting, sleeping or recuperation, e.g. *Nyctalus leisleri* (Leisler's bat) roosts;
3. hiding, protection or refuge, e.g. *Macrothele calpeiana* burrows; and
4. hibernation, e.g. bat dormitories, and *Muscardinus avellanarius* (common dormouse) hides.

It is clear that for a site to be classified as a roost when not occupied there must have been past habitual and the probability of future use within at least a two year period as defined as “within or between years”.

European Commission (2021) summaries the requirement for the protection of resting sites thus

“Breeding sites and resting places must be strictly protected because they are crucial to the life cycle of animals and are vital elements of a species’ entire habitat. Article 12(1)(d) should therefore be understood as aiming to safeguard the continued ecological functionality of such sites and places, ensuring that they continue to provide all the elements needed by the animal to rest or to breed successfully. The protection applies all year round if these sites are used on a regular basis.” [Emphasis added]

As the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 derives and is guided by legislation and guidelines issued by the European Commission, this definition is still valid within the transition period.

## *Summary*

### *“Breeding site”*

Breeding is defined here as mating, giving birth to young (including egg laying) or production of offspring where reproduction is asexual. A breeding site is defined here as the areas needed to mate and to give birth in, and covers also the vicinity of the nest or parturition site, where offspring are dependent on such sites. For some species, a breeding site will also include associated structures needed for territorial definition and defence. For species that reproduce asexually, a breeding site is defined as the area needed to produce offspring. Breeding sites that are used regularly, either within or between years, must be protected even when not occupied.

The breeding site may thus include areas required for:

1. courtship;
2. mating;
3. nest construction or selection of egg laying or parturition site;
4. places used for the purpose of parturition or egg laying or production of offspring where reproduction is asexual;
5. places of egg development and egg hatching;
6. nest or parturition sites when occupied by young dependent on that site; and
7. wider habitats that make reproduction successful, including feeding grounds.

### *Resting place*

Resting places are defined here as the areas essential to sustain an animal or group of animals when they are not active. For species that have a sessile stage, a resting place is defined as the site of attachment. Resting places will include structures created by animals to function as resting places, such as roosts, burrows or hides. Resting places that are used regularly, either within or between years, must be protected even when not occupied.

1. Thermoregulatory behaviour
2. Resting, sleeping or recuperation
3. Hiding, protection or refuge
4. Hibernation

## 5. RESULTS

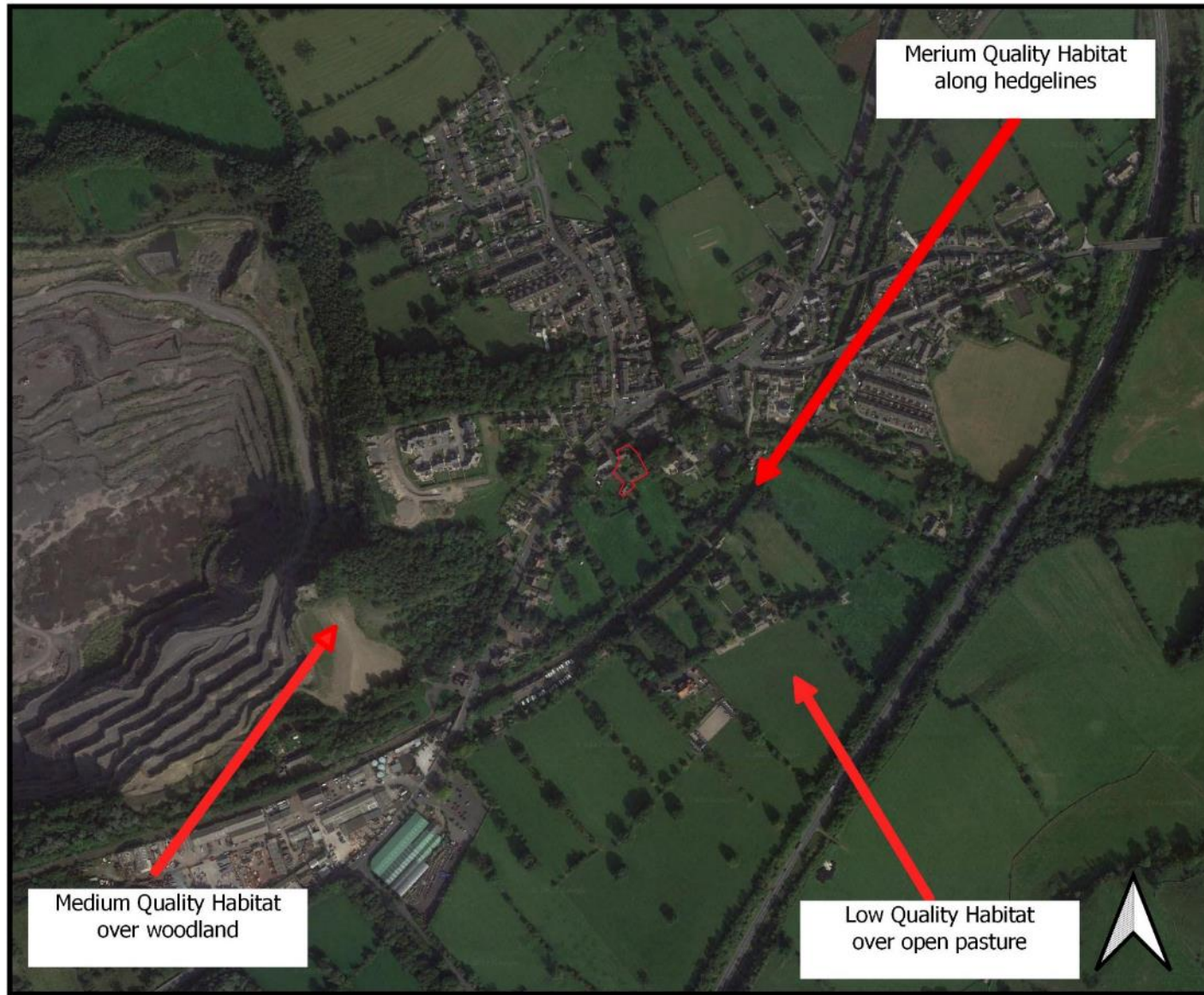
### 5.1 Desk Study

A search of the Envirotech and LERN dataset returned 27 records of four bat species within 2km but no records for the site.

Records are shown on Figure 4.



The habitat at and adjacent to the site was assessed from satellite imagery this was then ground truthed, Figure 5.



Site Boundary

Figure 5  
Habitat Adjacent Site



From the pre-existing records, a review of aerial photography, a field assessment of the area adjacent to the site and the experience of the surveyor, bat species which may occur on or adjacent to the site and the rationale for this decision are detailed in Table 3. This assessment does not look at the roosting potential of the site. The assessment of bats which are indicated as potentially occurring on the site or local area is based on the initial largely desk based scoping survey. Additional site specific assessment is provided later in this report. This assessment does however allow for the scope of site survey to be refined.

BAT SPECIES	ROOST PREFERENCE*			NICHE*	SUITABLE HABITAT		RECORDED WITHIN 2KM
	Crevice	Void	Tree		Locally	On site	
Common pipistrelle <i>Pipistrellus pipistrellus</i>	✓	✗	✓	Generalist	☒	☒	☒
Soprano pipistrelle <i>Pipistrellus pygmaeus</i>	✓	✗	✓	Riparian/Generalist	☒	☒	☒
Nathusius pipistrelle <i>Pipistrellus nathusii</i>	✓	✗	✓	Enclosed woodland	☐	☐	☐
Brown long-eared <i>Plecotus auritus</i>	✗	✓	✓	Enclosed woodland	☐	☐	☐
Whiskered <i>Myotis mystacinus</i>	✓	✓	✓	Linear vegetation	☒	☒	☒
Brandt's <i>Myotis brandtii</i>	✓	✓	✓	Linear vegetation	☐	☒	☐
Natterer's <i>Myotis nattereri</i>	✗	✓	✓	Enclosed riparian	☐	☐	☐
Daubenton's <i>Myotis daubentonii</i>	✓	✗	✓	Open aquatic	☐	☐	☐
Alcathoe's <i>Myotis alcathoe</i>	✗	✗	✓	Enclosed woodland	☐	☐	☐
Noctule <i>Nyctalus noctula</i>	✗	✗	✓	Above woodland/water	☒	☐	☒

Table 3 Bat species whose geographical range extends to the region in which the site is located. \*Typically but not exclusively.

### *Barn Owls*

There are no records of barn owls within 2km of the site on the Envirotech and LERN datasets. The habitat around the site appears to be suitable for hunting barn owls as there are areas of rough grassland which are suitable for voles and other small mammal prey.

### *Birds*

The surrounding habitat would offer suitable nesting and foraging areas for birds.

## **5.2 Field Survey**

### *5.2.1 Habitat Description*

The habitat on and adjacent to the site identified from satellite images was ground truthed. Details of the habitats found on and adjacent to the site are detailed in Figure 5.

It is judged that the most suitable commuting routes for bats into and out of the site is the road to the South-west which follows the area of woodland. Bats could also come from the South-east although the railway line is towards the South of the site. The surrounding habitat is considered to have moderate foraging potential.

Details of the surrounding land and its ability to support bats can be found in the Preliminary Ecological Appraisal report.

### *5.2.2 Bat Roost Survey*

#### *5.2.2.1 General description*

There are multiple buildings on site which comprise a farm house, cheese room, dairy barn, an open barn and a series of attached buildings and outbuildings. These are referenced on Figure 2.

#### *5.2.3 Building 1 Farm House*

##### *5.2.3.1 External walls/ Eaves*

The walls of this building are rendered and are in excellent condition. There are no gaps or cracks. The walls all appear well sealed and secure.

The soffit and eaves boards are in good condition. There were no indications of roosting by bats in these areas.

There is an enclosed cellar within the building with no potential access points for bats.

##### *5.2.3.2 Roof*

The roof is covered by slate which is tightly fitted. Small gaps were noted along the ridge line but in general the roof is secure.

##### *5.2.3.3 Internal walls*

The internal walls of the house are unavailable to roosting bats as they form part of the residence. The internal rooms are all lit by windows.

#### *5.2.3.4 Roof Voids/ Roof structure*

The timber beams in the roof were found to be in excellent condition with no rot, splits or gaps suitable for roosting or hibernating bats. There was a good covering of cobwebs under the roof and spanning the internal space. The roof is part lined and part unlined.

The roof voids are open to the internal rooms/ occupied space, most have been lit by windows. Those which are darkened are spanned by cobwebs. Insulation was present at ceiling level and no indications of use by bats could be found.

#### *5.2.3.5 Summary*

To summarise the building is of moderate size and the external walls and roof are in good condition. Overall, this building has low potential for use by bats, our categorisation would be 4. Further details of our categorisation can be found in Table 1.

### *5.2.4 Building 2 Cheese Room*

#### *5.2.4.1 External walls/ Eaves*

Connected to the farm house, the walls of this building are rendered and are in excellent condition. There are no gaps or cracks. The walls look well sealed and secure.

The soffit and eaves boards are in good condition. There were no indications of roosting by bats in these areas.

#### *5.2.4.2 Roof*

The roof of the building is made from slate and is part lined and part unlined. There were a large number of raised slates on both roof pitches. The full extent of the gaps could be seen from the ground with close focus binoculars and a 1,000,000 candle power torch. No indications of use by bats could be found. As part of the roof is unlined any use of the roof would also result in droppings being deposited internally, none were found.

#### *5.2.4.3 Internal walls*

The internal walls of the building are vaulted upto the roof. They appear well sealed with cobwebs and dust on them. There was no evidence of bats found.

#### *5.2.4.4 Roof Voids/ Roof structure*

The timber beams in the roof were found to be in excellent condition with no rot, splits or gaps suitable for roosting or hibernating bats. There was a good covering of cobwebs under the roof and spanning the internal space. The vaulted roof makes the internal space open and exposed.

#### *5.2.3.5 Summary*

To summarise the building is of small size and the external walls are in excellent condition. The building is attached to the farm house which is also well sealed. Small gaps under the roof coverings had no indication of use by bats, but would be suitable for use. Overall this building has low potential for use by bats, our categorisation would be 4. Further details of our categorisation can be found in Table 1.



## 5.2.5 *Building 3 Dairy Barn*

### 5.2.5.1 *External walls/ Eaves*

The walls of this building are natural stone and are in fair condition. There are gaps and cracks in the stonework suitable for roosting bats. As many gaps as possible were inspected and no evidence of use was noted, but the number of gaps and complexity of the wall cavity make a full inspection impossible. To the South side is a single storey extension which is rendered.

### 5.2.5.2 *Roof*

The roof of the building is made from slate and is unlined. There were a large number of raised and slipped slates on both roof pitches. The full extent of the gaps on the East elevation could be seen from the ground with close focus binoculars and a 1,000,000 candle power torch. No indications of use by bats could be found. As the roof is unlined any use of the roof would also result in droppings being deposited internally. The West elevation cannot be fully seen due to it facing a garden in separate ownership.

The single storey element was of similar condition. There appears to have been some fire damage and the interior is blackened and burnt.

### 5.2.5.3 *Internal walls*

The internal walls of the building are vaulted to the roof space. There is a hay loft present but this is not darkened and is open to the ground floor rooms.

Hay and other debris was found scattered over the floor which made the search for droppings more difficult but no evidence of use by bats was found.

The single storey element has a large window making the building very light and less suitable for use.

### 5.2.5.4 *Roof Voids/ Roof structure*

The timber beams in the roof were found to be in poor condition with some rot. These were somewhat suitable for roosting bats.

The single storey element offers less potential due to fire damage, the roof timbers appear blacked and dried out, more similar to charcoal than timber.

### 5.2.5.5 *Summary*

To summarise the building is of moderate size and the external walls are in poor condition with numerous suitable gaps for bats in the external walls. Small gaps also occur under displaced roof coverings, no indications of use by bats were found. Overall, this building has moderate potential for use by bats, our categorisation would be 6.

Further details of our categorisation can be found in Table 1.

## *5.2.6 Building 4 Coal store, green house and other outbuildings*

### *5.2.6.1 External walls/ Eaves*

The walls of these building are natural stone and are in fair condition. There are gaps and cracks suitable for roosting bats. An inspection did not reveal any signs of use.

The greenhouse is partly collapsed and made from timber and glass. The green house offers negligible potential and therefore doesn't require further description.

### *5.2.6.2 Roof*

The roof of the building is made from slate and is unlined. There were a large number of raised slates on the single roof pitch present. The full extent of the gaps could be seen from the ground with a 1,000,000 candle power torch. No indications of use by bats could be found. As the roof is unlined any use of the roof would also result in droppings being deposited internally but no evidence of use was found.

### *5.2.6.3 Internal walls*

The internal walls of these buildings are vaulted to the roof but stored items within the building cover much of the walls. The open front of the building would allow free access by bats. There was no evidence of bats found but there is a low potential for use.

### *5.2.6.4 Roof Voids/ Roof structure*

The timber beams in the roofs were found to be in poor condition with limited amounts of rot. These may provide suitable roost sites where the join the internal walls but no evidence of use was found.

### *5.2.6.5 Summary*

To summarise these buildings are of small size and the external walls are in poor condition. Small gaps under the roof coverings have no indication of use by bats. However, the buildings would be suitable for use by bats. Overall, these building has low potential for use by bats, our categorisation would be 3.

## *5.2.7 Building 5 Open barn and outbuildings*

### *5.2.7.1 External walls/ Eaves*

The walls of this building are brick and are in good condition. There are no structural gaps or cracks. There are also wooden slats running along part of the barn. This barn is extremely open.

The outbuildings are small, tin shed-like in design. They offer negligible potential especially when there are so many moderate quality buildings locally.

### *5.2.7.2 Roof*

The roof of the building is made from slate and is unlined. There were a large number of raised slates on both roof pitches. The full extent of the gaps could be seen from the ground with a

1,000,000 candle power torch. No indications of use by bats could be found. As the roof is unlined any use of the roof would also result in droppings being deposited internally. No evidence of use was however noted.

#### 5.2.7.3 *Internal walls*

The internal walls of the building are vaulted to the roof. The buildings internal space is too open and exposed for use by bats for roosting.

#### 5.2.7.4 *Roof Voids/ Roof structure*

The timber beams in the roof were found to be in good condition with no rot, splits or gaps. The barn was open and airy.

#### 5.2.7.5 *Summary*

To summarise the building is of moderate size and the external walls are in good condition. Small gaps under the roof coverings have no indication of use by bats. The building is limited in its suitability for use by bats on account of it being so open. Overall, this building has low potential for use by bats, our categorisation would be 3.

### 5.2.8 *Activity Survey*

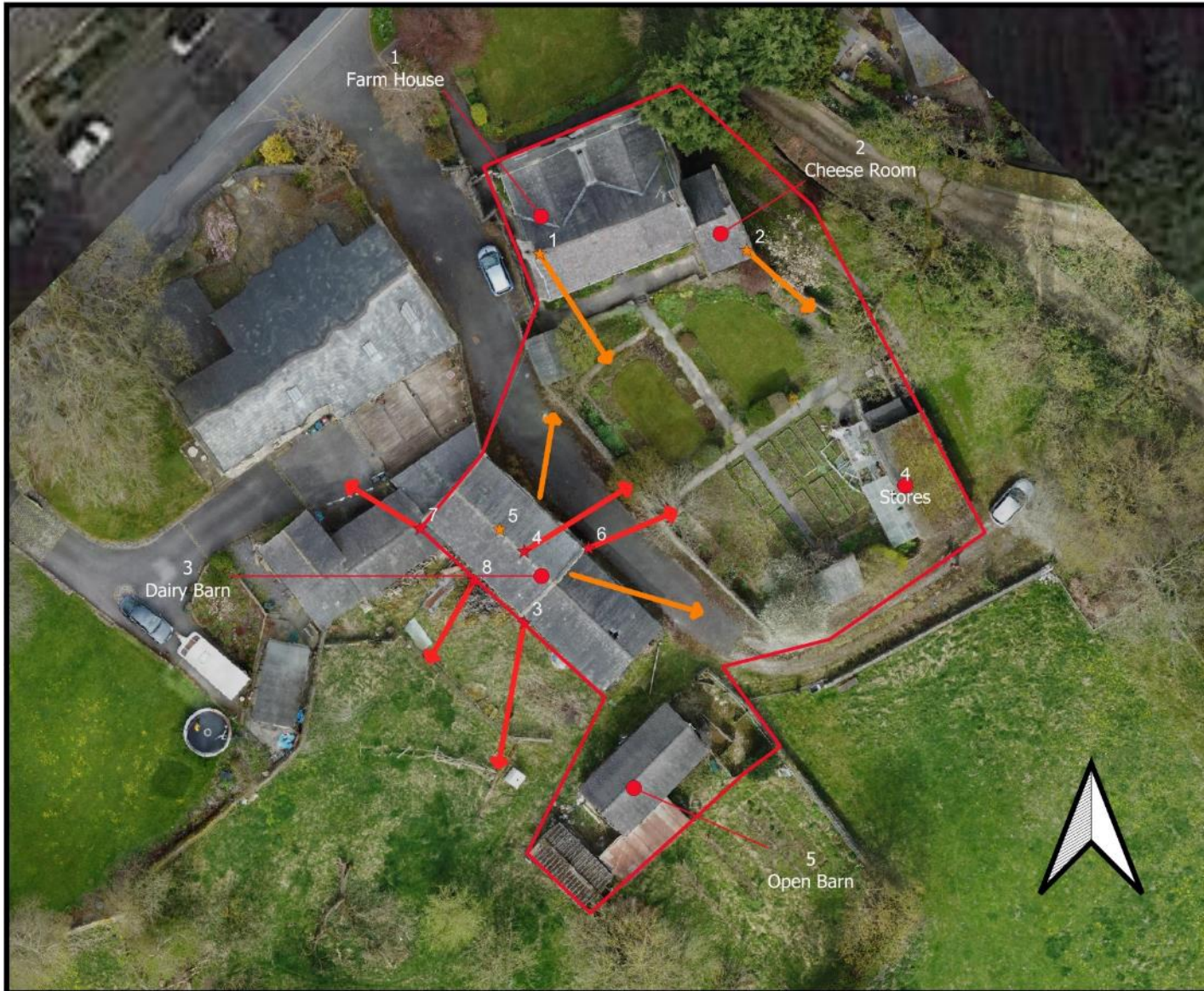
During the first activity

- Six soprano pipistrelle bats were seen emerging from Building 1 (Roost 1)
- Two soprano pipistrelles were seen emerging from the roof of Building 2 (Roost 2)
- Three common pipistrelle bats were recorded emerging from the corner of Building 3 (Roost 3)
- A single common pipistrelle was seen emerging from the ridgeline of Building 3 (Roost 4).

During the second activity survey

- Six soprano pipistrelle bats emerged from the circular hole in the East side of Building 3, these had been roosting within the internal space (Roost 5)
- One common pipistrelle emerged from the wall of Building 3 (Roost 6)
- One common pipistrelle emerged from the roof of Building 3 (Roost 7)
- One common pipistrelle emerged from the Western roof pitch of Building 3 (Roost 8)
- One soprano pipistrelle emerged from a hole in the South gable of Building 3, this had been roosting within the internal space (Roost 5).

Bat activity is plotted on Figure 6.



- Site Boundary
- Building Number
- Roost
  - ★ Common Pipistrelle
  - ★ Soprano Pipistrelle
- Bat Flight Lines
  - ➔ Common Pipistrelle
  - ➔ Soprano Pipistrelle

Figure 6  
Bat Activity



## 5.2.9 *Barn Owls*

### 5.2.9.1 *Potential Nest Sites (PNS)*

Potential nest sites occur within Building 3 to the wall tops.

### 5.2.9.2 *Active Roost Sites (ARS)*

There was no "white wash" or significant collections of fresh barn owl pellets on the floor or on surfaces inside the building which suggest that barn owls do not have an active roost site within the buildings.

### 5.2.9.3 *Temporary Roost Sites (TRS)*

There was no "white wash" or old barn owl pellets on the floors or on surfaces inside the buildings which suggest that barn owls do not have a temporary roost site within the buildings.

### 5.2.9.4 *Occupied Breeding Sites (OBS)*

There were no significant collections of barn owl pellets, chick down, chick leg bones, "white wash", moulted feathers or other indications of an occupied breeding site in the buildings.

## 5.2.10 *Nesting birds*

A few nests were found present in Building 3. The nests were found to be vacant at the time of the surveys. There was evidence of a cat living in the same barn. The cat actually preyed upon and killed a wren whilst we were conducting the survey.

## **6. CONSTRAINTS**

### **6.1 *Bats***

We judge that the site survey is sufficient to address the risk to bats at the site based on the species present in the local area, construction of the buildings and nature of the proposed work.

### **6.2 *Barn Owls***

No constraints.

### **6.3 *Nesting Birds***

Surveys were undertaken inside the early nesting season this is not considered to be a significant constraint as old nest sites were still identifiable and site conditions are not likely to have changed since the previous breeding season.

During the emergence surveys there was no internal access to the building apart from those that are open such as the open barn. As mentioned, this is not considered a significant constraint as all buildings were access earlier in the year for their potential.

## 7. INTERPRETATION

### 7.1 Presence / absence

There is evidence of at least eight soprano pipistrelles using three buildings on site and at least four common pipistrelles using one of the buildings on site.

There were an additional ten or so common pipistrelles and soprano pipistrelles commuting through site and foraging around site during both surveys.

Building	Species	Peak Count	Survey Number	Number of roosts
1	Soprano Pipistrelle	6	1	1
2	Soprano Pipistrelle	2	1	1
3	Soprano Pipistrelle	7	2	1
	Common Pipistrelle	3	2	5

Table 4 *Bat species, peak counts and roosts*

### 7.2 Population size class assessment

From a review of adjacent habitat the maximum number of bats that are likely to use an area within 250m of the site is of the magnitude around 10-100 common and soprano pipistrelles.

Barn owls are currently considered to be absent.

There was evidence of a new nest created in Building 5.

### 7.3 Site status assessment

Three of the buildings, Building 1, Building 2 and Building 3 are confirmed to be soprano pipistrelle roosts. Building 3 is also a common pipistrelle roost.

The six Soprano Pipistrelle in roost 1 were absent on the second visit. The seven Soprano pipistrelle in roost 5 were absent on the second visit. We consider that the bats in roost 1 had likely moved to roost 5. This movement as well as the number of bats present and time of year would suggest non-breeding females in a day roost. These bats may also share roost 2. This would put the peak count of Soprano Pipistrelle on the site as a whole at eight individuals.

Common Pipistrelle appear to be using several roost sites as individuals or small groups, peak count 3. This movement as well as the number of bats present and time of year would suggest non-breeding females or males in day roosts.

These day roosts may also be used as transitional roosts.

Building	Species	Peak Count	Roost type	Roost Number
1	Soprano Pipistrelle	6	Day	1
2	Soprano Pipistrelle	2	Day	2
3	Common Pipistrelle	3	Day	3
	Common Pipistrelle	1	Day	4
	Soprano Pipistrelle	7	Day	5
	Common Pipistrelle	1	Day	6
	Common Pipistrelle	1	Day	7

*Table 5 Bat species and roosts classification.*

We are of the opinion that the buildings are not currently used by barn owls and will have a low significance for this species.

The buildings may be used by low numbers of swallow and other nesting birds.



## **8. POTENTIAL IMPACTS**

### **8.1 Bat Roosts**

#### *8.1.1 Pre and mid-activity impacts*

A worst-case scenario will be considered in addressing potential impacts at the site without mitigation.

##### *8.1.1.1 Maternity Roosts*

We judge there is no risk to a maternity colony or gathering roost at this site from the proposals. The number and species of bat as well as the time of year surveys were undertaken and movement of bats between roosts would suggest this roost type is not present.

##### *8.1.1.2 Satellite Roosts*

We consider that satellite roosts will not be affected by the proposal. The number and species of bat as well as the time of year surveys were undertaken and movement of bats between roosts would suggest this roost type is not present.

##### *8.1.1.3 Transitional and day roost sites*

We judge there is a high risk of disturbing bats in or loss of transitional or day roost sites from the proposals without mitigation. This may also result in the killing or injury of bats. Given the number of roost sites on site as well as mixed species, these roosts are considered to have a moderate conservation significance.

##### *8.1.1.4 Night Roosts*

Night roosts are typically used by bats which are commuting longer distances from their day roost sites to feed and are used as a resting site between feeding sessions. These roost sites are not usually suitable for day roosting. Given the sites location adjacent good foraging areas, it is unlikely bats not already present in the local area would use the site for night roosting.

##### *8.1.1.5 Feeding roosts*

We consider the site is likely used by the observed species for feeding roosts. Species which use feeding roosts such as Brown Long-eared were not observed on site.

##### *8.1.1.6 Lek sites*

In our experience lek sites are commonly found close to strong commuting and foraging routes. There were no potential lek sites identified in the buildings. It is therefore unlikely there will be use of the buildings by bats for lekking.

##### *8.1.1.7 Hibernation*

Some buildings are far too open to support hibernating bats and that is where the timber has most deteriorated. The areas with rotten wood or damp are also too open to be optimal. With

the exception of the farm house cellar which offers good conditions however is completely secured.

#### *8.1.1.8 Swarming*

There is unlikely to be any loss of a swarming site. Swarming sites are generally found at or near hibernation sites. We judge that the site is unlikely to be used by *Myotis* spp. bats and brown long-eared bats which have been known to swarm as there are no hibernation sites for these species in the buildings.

#### *8.1.1.9 Summary*

Without mitigation, there is considered to be a high potential for the alteration or loss of confirmed day and transitional roost sites for low numbers of common and soprano pipistrelle bats at the site and this is likely to have an impact on their local distribution.

#### *8.1.2 Long term impacts*

There is on balance a risk of long-term negative impacts on the favourable conservation status of bats in the local area as a result of the proposed work. The number of roost sites and species mix would suggest the site is of moderate importance to bats locally.

#### *8.1.3 Post activity interference impacts*

There is likely to be some disturbance to roosting bats during the post construction phase of the project. There previously had been some disturbance at the site from existing use of the site and surrounds. The site is however disused presently and the increase in artificial lighting along with the increased number of residents may have an effect on the local bat population and their distribution.

#### *8.1.4 Other impacts*

It is our opinion that there will be no significant other negative impacts relating to the proposed work which may affect bat species providing mitigation is followed.

#### *8.1.5 Bat Foraging and Commuting Habitat*

There is likely to be a disruption to commuting routes at the site. There is a moderate number of bats using the site to commute and forage. Artificial lighting, increased usage and destruction of linear vegetation would all negatively impact foraging and commuting across site.

### **8.2 Barn Owls**

There is a low potential for use of the site by barn owls. There are no potential nest sites within the buildings and there is no indication of any type of past use.

### **8.3 Nesting birds**

A new nest and a low number of old swallow and other bird nest sites were found at the site. There is the potential for a disturbance to nesting birds during the construction phase. Creation

of new nesting provision in the new houses along with retention of vegetation or additional diversity planting would greatly improve the situation for birds locally.

## **9. RECOMMENDATIONS AND MITIGATION**

### **9.1 Further Survey**

The site should be rechecked for nesting birds if work is to commence in the period March-September inclusive.

### **9.2 Mitigation Measures**

#### *9.2.1 Bats*

Natural England requires that mitigation addresses the impacts picked up by the site assessment, as follows:-

- Quantitative characteristics: There should be no net loss of roost sites, and in fact where significant impacts are predicted there will be an expectation that compensation will provide an enhanced resource compared with that to be lost. The reasoning behind this concept is that the acceptability of newly created roosts by bats is not predictable.
- Qualitative characteristics: the plans should aim to replace like with like. As an extreme example, it would be unacceptable to replace maternity roosts with hibernation sites.
- Functional characteristics: compensation should aim to ensure that the affected bat population can function as before. This may require attention to the environment around the roost.

Natural England also recommends that precautions are taken to avoid the deliberate killing or injury of bats during development work at the site.

#### *9.2.1.1 Bat Roosts*

The following guidelines will therefore need to be adhered to.

1. A Protected Species Mitigation Licence (PSML) will be acquired before works take place at the site. Planning permission will need to be in place to make the application for an PSML.
2. Contractors will need to be briefed and work to a method statement to ensure that bats are not harmed as a result of the works. An ecologist will need to be present when work starts to check the site for bats and oversee initial demolition works.
3. Mitigation measures, which will include roosting features and bat access to the buildings as well as the specification of roofing materials will be set out in the PSML and will be adhered to.
4. Mitigation measures and associated works will need to be completed within the timescales set out in the PSML.
5. New compensatory roosts will be required to replace the soprano and common pipistrelle roosts to be lost.

6. The mitigation strategy should aim to replace like for like as far as possible. Outlined below are some suitable roost replacements and advice on positioning and construction.

### **Breakdown of roosts and characteristics**

Roost 1 and Roost 2 are soprano pipistrelle roosts that were used by six and two during the first survey. We recommend replicating the same conditions. At least two bat slates/tiles (detail 1a) should be placed ideally in the locations specified in detail 1.

Roost 3 is a common pipistrelle roost that was used by three bats during the first survey. We recommend replicating it by either placing a bat brick (detail 2) or bat wall top access (detail 3). A stone wall feature (detail 6) could be used dependant on whether the thick stone walls of the building are to be retained or not.

Roost 4 is a common pipistrelle roost that was used by one bat during the first survey. We recommend replicating it by placing at least one bat ridge (detail 4a) along the roof of the Building 3 as specified in detail1.

Roost 5 is a soprano pipistrelle roost that was used by six bats during the second survey. Soprano pipistrelles are crevice dwelling bats and typically do not roost in void spaces. Therefore, it is likely they were roosting in a crevice inside the hayloft and chose to exit via the circular hole. We recommend creating an additional three of the features below in a variety of locations to provide the bats roost features appropriate for the changing climate and different weather conditions.

Roost 6 is a common pipistrelle roost that was used by one bat during the second survey. We recommend replicating it by placing an additional bat brick (detail 2) or bat wall top access (detail 3) in the specified areas (detail 1).

Roost 7 is a common pipistrelle roost that was used by one bat during the second survey. It is unclear if the bat emerged from the hay loft wall or roof and therefore our recommendation would be the addition of another bat ridge (detail 4a) or an additional bat brick (detail 2). If another bat brick is to be added it should be on a different aspect to the previous bat bricks to offer variety similar to what will be lost.

Roost 8 is a common pipistrelle roost that was used by one bat during the second survey. It is unclear if the bat emerged from the hay loft wall or roof and therefore our recommendation would be the addition of another bat ridge (detail 4a) or an additional bat brick (detail 2). If another bat brick is to be added it should be on a different aspect to the previous bat bricks to offer variety similar to what will be lost.

Mitigation provided is for guidance only and is subject to change upon acquiring the PSML.

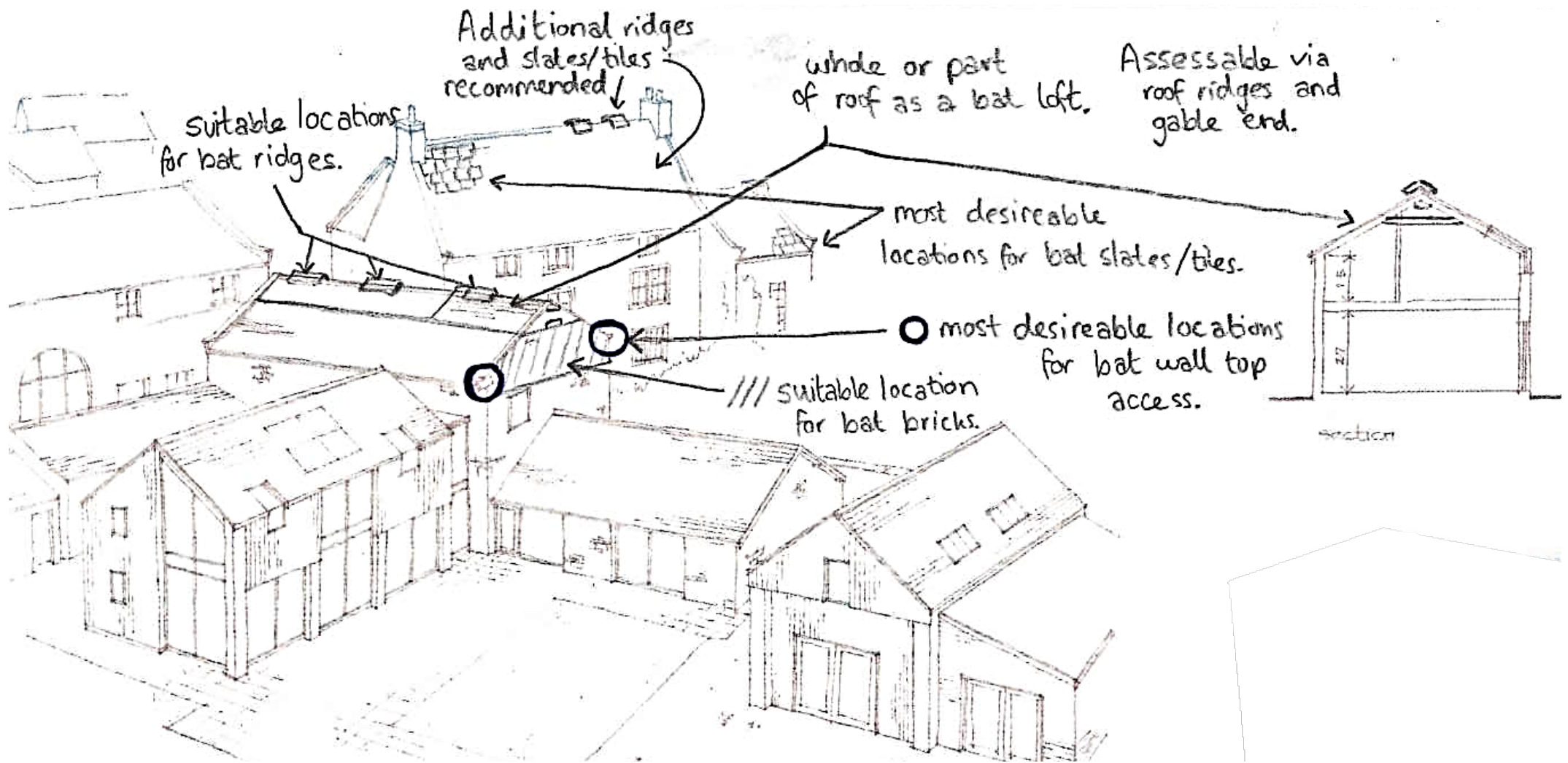


Figure 7 - Preferable locations for new bat roost creation.

BAT ACCESS 'SLATE'  
DETAIL 1A

RIDGE

SLATES

ROOF  
VOID

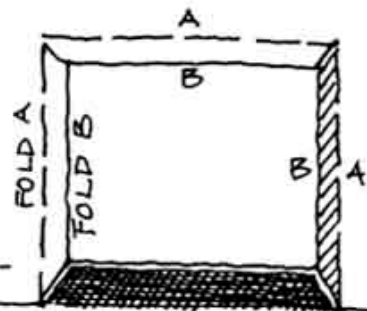
ACCESS 'SLATE'  
CODE G

20  
GAP

~ SECTION THROUGH ~  
ROOF

RIDGE LINE

CODE G LEAD.



20

TO SUIT SLATE

~ BAT ACCESS ~  
SLATE

SLATES

LEAD

SLATES

20 HIGH  
GAP

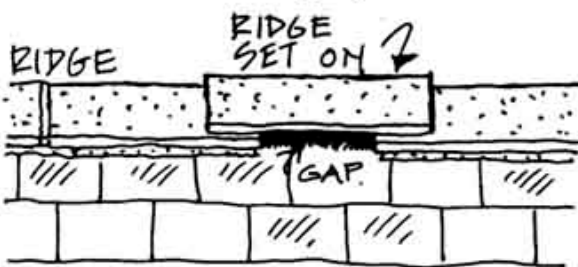
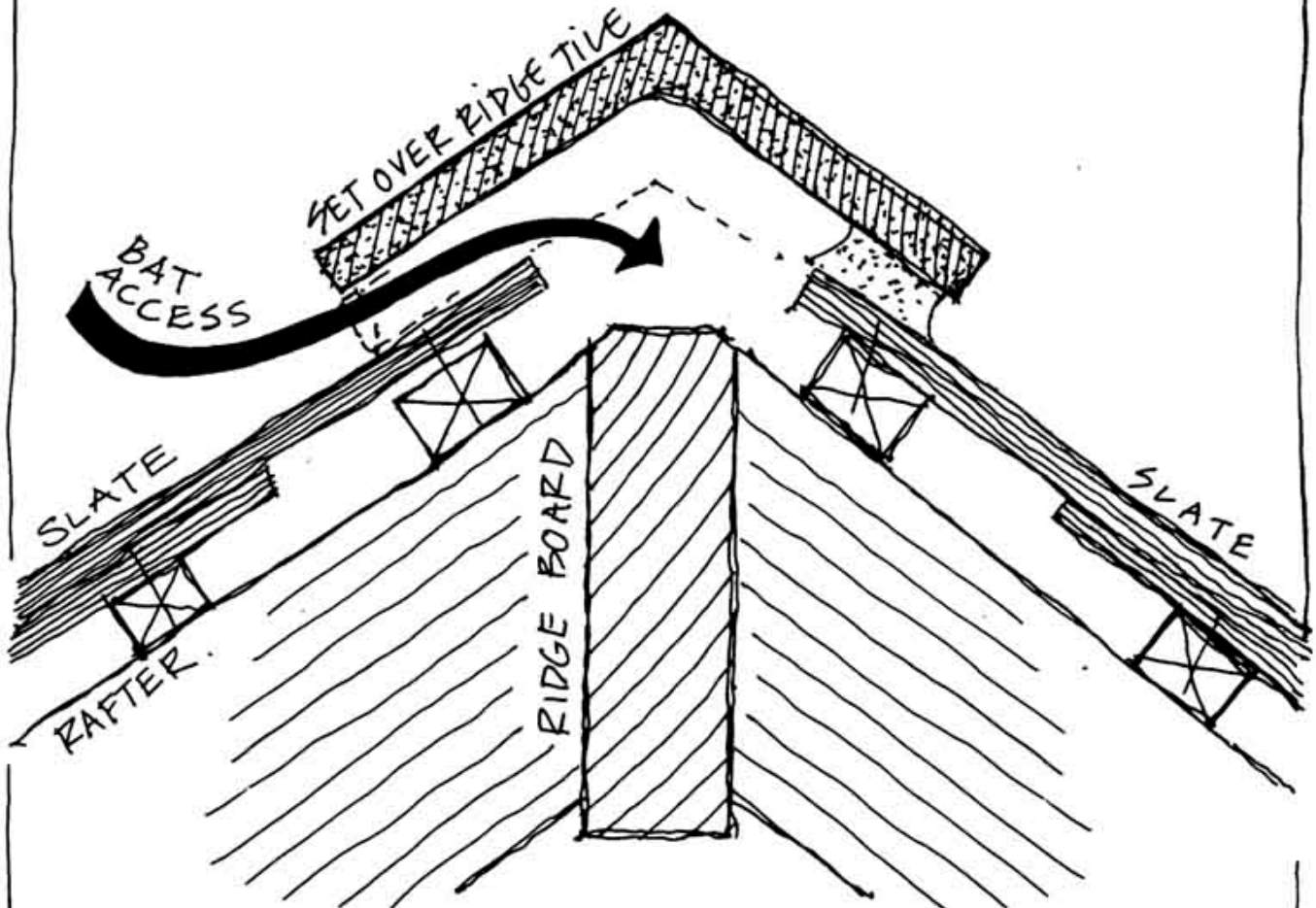
LAPS  
UNDER  
SLATE

~ BAT SLATE BUILT INTO SLOPE ~



SP

# RIDGE TILE ACCESS DETAIL 4A



~ OPTION A ~

ROOF RIDGE SET ON TOP OF GENERAL RIDGE TILES TO FORM BAT ACCESS GAP.



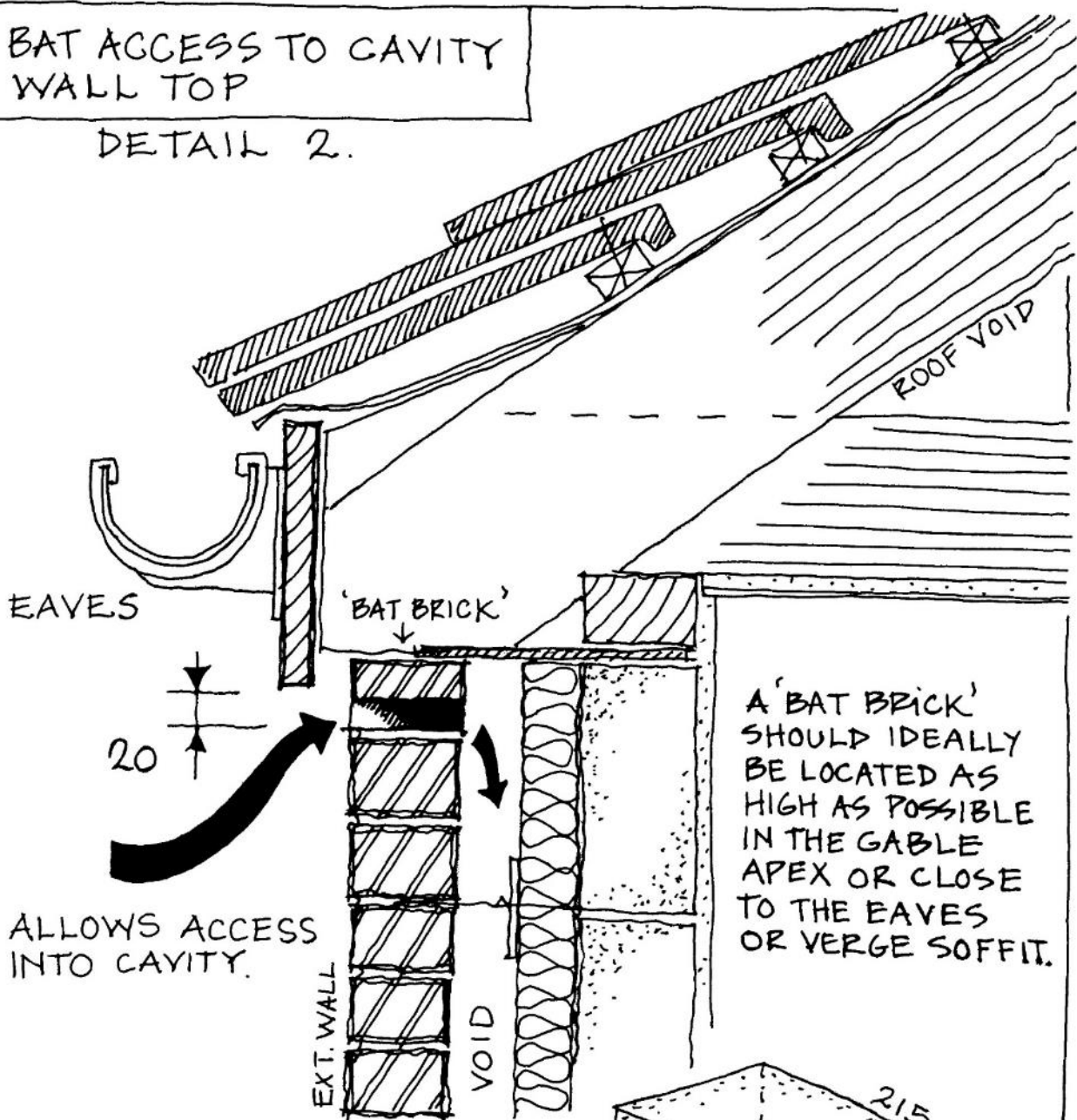
~ OPTION B ~

MAINTAIN 20MM MORTAR GAP. & LEAVE A SECTION OUT.



BAT ACCESS TO CAVITY  
WALL TOP

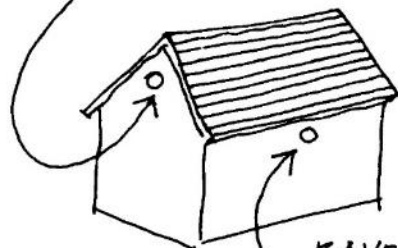
DETAIL 2.



ALLOWS ACCESS INTO CAVITY.

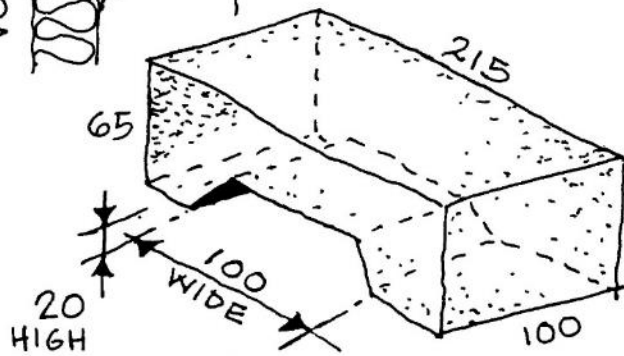
A 'BAT BRICK' SHOULD IDEALLY BE LOCATED AS HIGH AS POSSIBLE IN THE GABLE APEX OR CLOSE TO THE EAVES OR VERGE SOFFIT.

GABLE END LOCATION



- BAT BRICK - POSITIONS

EAVES/SOFFIT LOCATION



THE 'BAT BRICK'



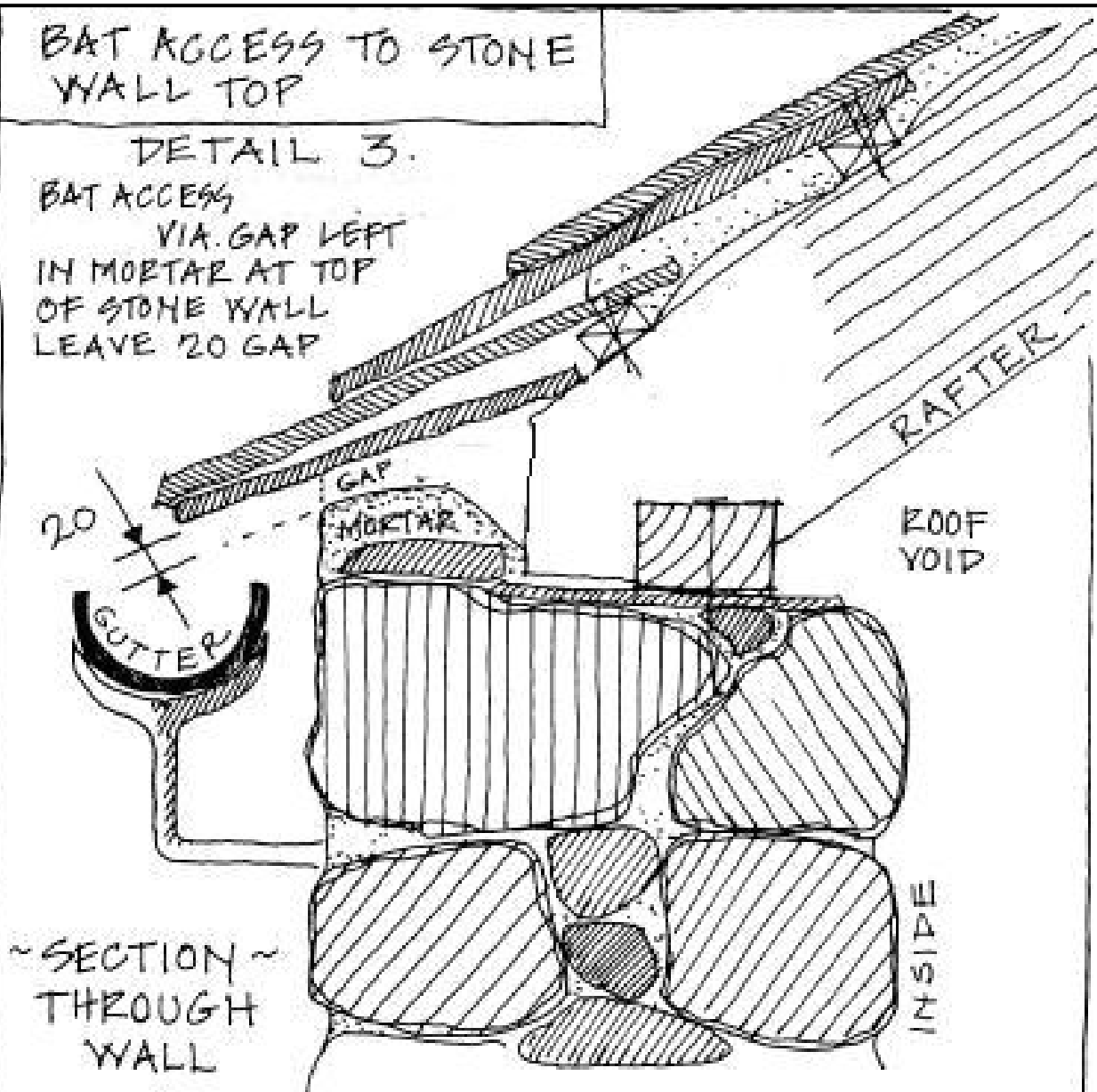
SP

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English Nature Cumbria Team, Juniper House, Murley Moss, Oxenholme Road, Kendal LA9 7RL. Tel: 01539 792800 Fax: 01539 792830 Email: cumbria@english-nature.org.uk

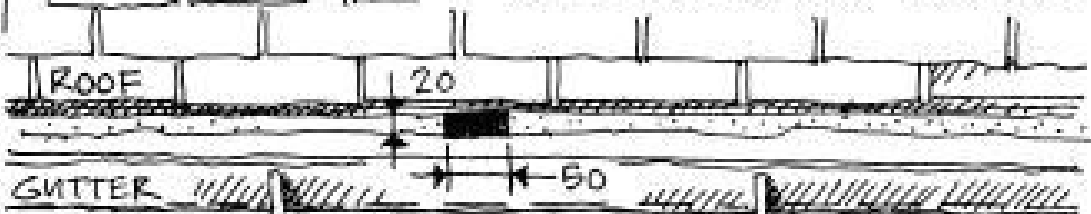
BAT ACCESS TO STONE WALL TOP

DETAIL 3.

BAT ACCESS  
VIA GAP LEFT  
IN MORTAR AT TOP  
OF STONE WALL  
LEAVE 20 GAP



~ ELEVATION ON EAVES ~



WALL FACE

- GAP LEFT OUT OF MORTAR TO ALLOW ACCESS INTO ROOF SPACE



SP

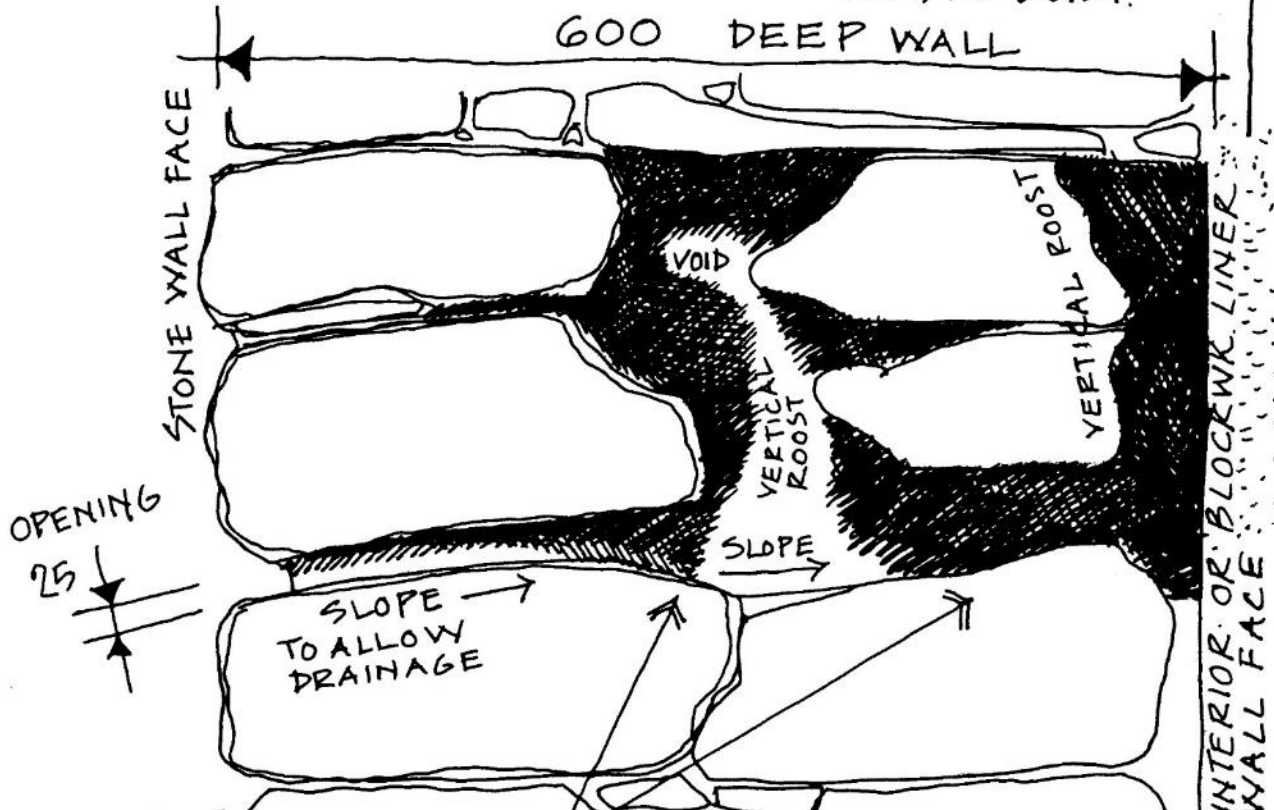
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**SOLID STONE WALL  
BAT ROOST**

SECTION THROUGH WALL  
IE; BARN CONVERSION  
WHERE THICK STONE  
WALLS ARE BEING  
KEPT/RE-BUILT.

**DETAIL G**

600 DEEP WALL



SECTION THRO' ENTRANCE (ACTUAL SIZE)



SECTION THROUGH BAT NICHE (ACTUAL SIZE)

PROVIDE A SERIES OF THESE BAT NICHE THROUGHOUT THE WALLS OF YOUR BARN CONVERSION - HATCHED AREAS ARE IDEAL LOCATIONS - AWAY FROM WINDOWS + DOOR.

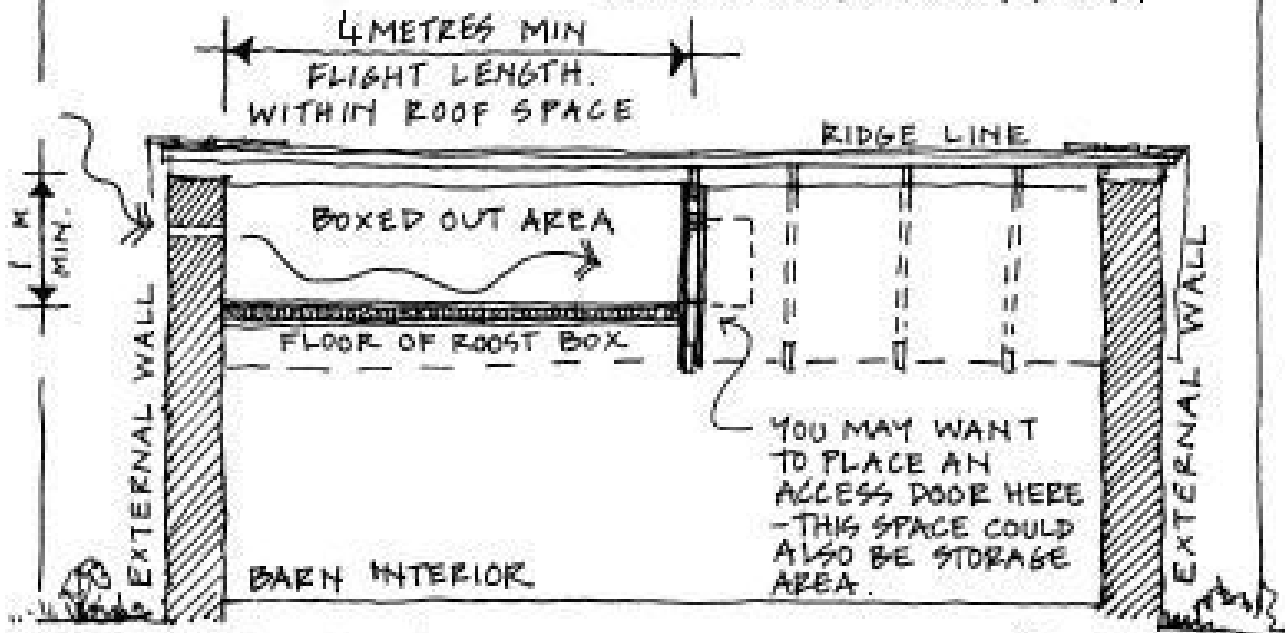


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# ROOF SPACE ROOST FOR LONG EARED BATS

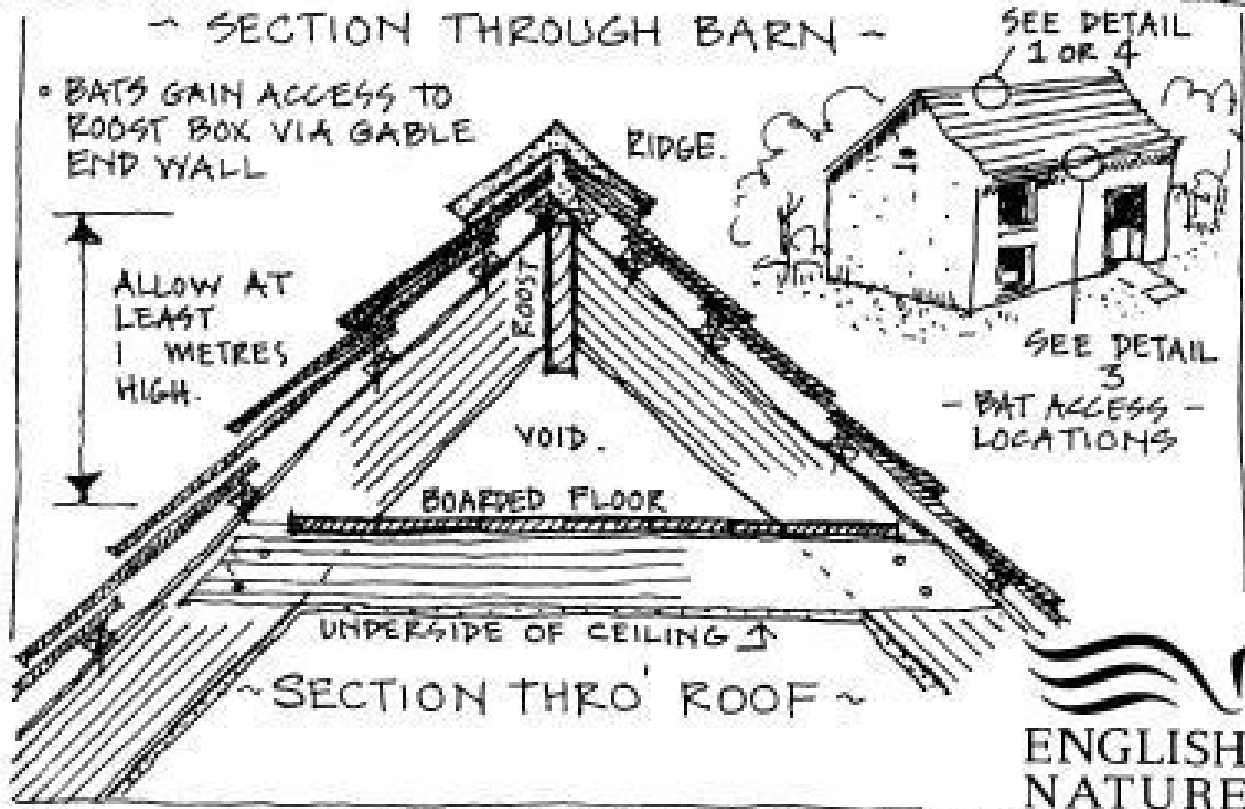
## DETAIL 8

- BOX OUT SECTION OF ROOF UNDER THE RIDGE BEAM WHERE LONG EARED BATS CAN ROOST



## SECTION THROUGH BARN

- BATS GAIN ACCESS TO ROOST BOX VIA GABLE END WALL



ENGLISH NATURE

SP

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#### *9.2.1.2 Mitigation for Foraging and Commuting Habitat*

It is our recommendation that all linear vegetation and mature trees are retained or improved. In addition to this a dark corridor should be considered. The landscaping plan should aim to incorporate a wild area free of artificial light that the bats can use as a passageway to commute to and from site.

#### *9.2.1.3 Requirement for Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 Licence*

At this stage, we judge that a Natural England license will be required to cover work on the buildings.

#### *9.2.2 Barn Owl Roost / Nest sites*

If barn owls are seen nesting at the site, all work should cease. The site will need to be re-assessed in regard to its use by barn owls. A Natural England licence may be required if continuing work is, on balance, likely to result in the disturbance of nesting barn owls or their killing or injury. The probability of barn owls using this site for nesting is very low.

#### *9.2.3 Bird Roost / Nest sites*

Work should not commence while any swallow or other bird nests are still in use. Birds usually finish nesting by early September. A check of the site for active nest sites should be made prior to work commencing if this is in the period March -September. A delay in the start of work may be required if active nest sites are located.

In addition to this we recommend providing new nesting provisions. This will positively impact local bird populations if nesting provisions can be incorporated in the development of new houses. This could be in the form of bird bricks or artificial nest boxes for swallows and other species.

## **10. MITIGATION SUMMARY**

The site survey found evidence of multiple common and soprano pipistrelle roosts in three of the buildings on site. Where roosts are to be lost or altered because it is not possible to retain them. Then new roosting provision should be supplied with emphasis on recreating or closely resembling the roost type and characteristics to be lost.

There was evidence of birds currently nesting in the open barn and evidence of previous nests in the dairy barn. Work will not be commenced or undertaken in such a way as active nest sites are disturbed. In addition, incorporating new nesting sites in to the proposed development should be considered.

There is no evidence of past use of the buildings by barn owls for roosting or nesting. We therefore determine the risk to remain very low. If barn owls are seen using the site, then all work should cease and further surveys may be required.

## 11. REFERENCES

Information from the following sources has been used in preparing the survey report.

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## APPENDIX 1 PHOTOGRAPHS

Photograph	Notes
 <p>The first photograph shows a two-story stone building with a grey slate roof, a chimney on the left, and a blue door. The second photograph is a similar view from a slightly different angle. The third photograph is a close-up of the gable end of the building, showing the texture of the stone and a window.</p>	<p>Farm House Building 1</p> <p>Well-sealed walls</p> <p>Roof has some potential along the ridge line</p>





Farm House Building 1

Well-sealed walls

Roof has some potential along  
the ridge line



Farm House Building 1

Roof voids are open to the internal rooms and windows



### Building 2 Cheese Room

Internal space is vaulted with part lined and part unlined roof



### Building 3

The Dairy barn and adjoining building with stone walls and a slate roof





Building 3

Numerous slipped slates

Damage to gable and internal room from fire



Building 3

Internal space with debris across the floor. Light and draughty from open windows



Building 4 Coal store, green house and other outbuildings

Green house has collapsed



Building 4 Stone walls with open front



Building 5 Open barn and outbuildings

The internal rooms are open and exposed, the walls are well sealed



### Bat Emergence Survey Photos

First survey six soprano pipistrelles emerged from Roost 1 to the side of the chimney on Building 1 and two soprano pipistrelles emerged from the roof of Building 2 (Roost 2)



First Survey three common pipistrelles were seen emerging from this location on Building 3, (Roost 3)



First survey one common pipistrelle emerged from the ridgeline tile of Building 3, (Roost 4)





Second survey six soprano pipistrelles emerged from the circular hole in the East side of Building 3. These are roosting in the internal void on the first floor (Roost 5)



Second survey one common pipistrelle emerged from the wall of Building 3 (Roost 6)



Second survey, one common pipistrelle emerged from the roof of Building 3 (Roost 7)



Second emergence survey, One common pipistrelle emerged from between the roof and the wall of Building 3 (Roost 8)



Second emergence survey, One soprano pipistrelle emerged from the right most hay loft hole of Building 3. This bat is roosting within the internal space (Roost 5)