envirotech

Ecological Consultants
Environmental and Rural Chartered Surveyors

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BAT, BARN OWL & NESTING BIRD SURVEY AT

Curtis House Farm, Longridge

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Professional responsibility

This report has been commissioned and the actions of the surveyor have been made in accordance with the Code of Professional Conduct for the Institute of Ecology and Environmental Management. (www.ieem.org.uk) and the Royal Institution of Chartered Surveyors (www.rics.org.uk)

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 license.

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. MCIEEM, MRICS, CEnv, Dip NDEA
Director

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1. EXECUTIVE SUMMARY

It is understood that a small single storey brick built cattle shed at Curtis House Farm, Longridge, will be converted to residential accommodation.

A daytime inspection for bats, Barn Owls and signs of nesting birds was undertaken on the 22nd November 2013. This involved a close inspection of the building both internally and externally.

Additional assessments, which included use of a thermal imaging camera to assess the thermal properties of the buildings walls and roofs were also undertaken along with a desk study and data search, 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 low potential for foraging being open and exposed. There is poor connectivity between the site and higher quality foraging areas.

No indications of bats, Barn Owls or nesting birds was found during the survey.

On the basis of the survey work carried out, under guidance provided in respect of the Conservation of Habitats and Species Regulations 2010, and considering the plans for the site, it is considered that a European Protected Species Mitigation (EPSM) Licence for bats will not be required prior to works being carried out.

A mitigation strategy has been prepared and should be followed in order to ensure that the welfare of the local bat population is maintained during, and following the works.

2. INTRODUCTION

2.1 Site Description

The site lies in a semi-rural location 1km North of Longridge, Lancashire. The surveyed building comprises a small, red brick cattle shed under a slate roof.

There are fragmented hedgerows, but the local area is very exposed being mainly pasture and arable land at SD 603 388, Figure 1 and 2.

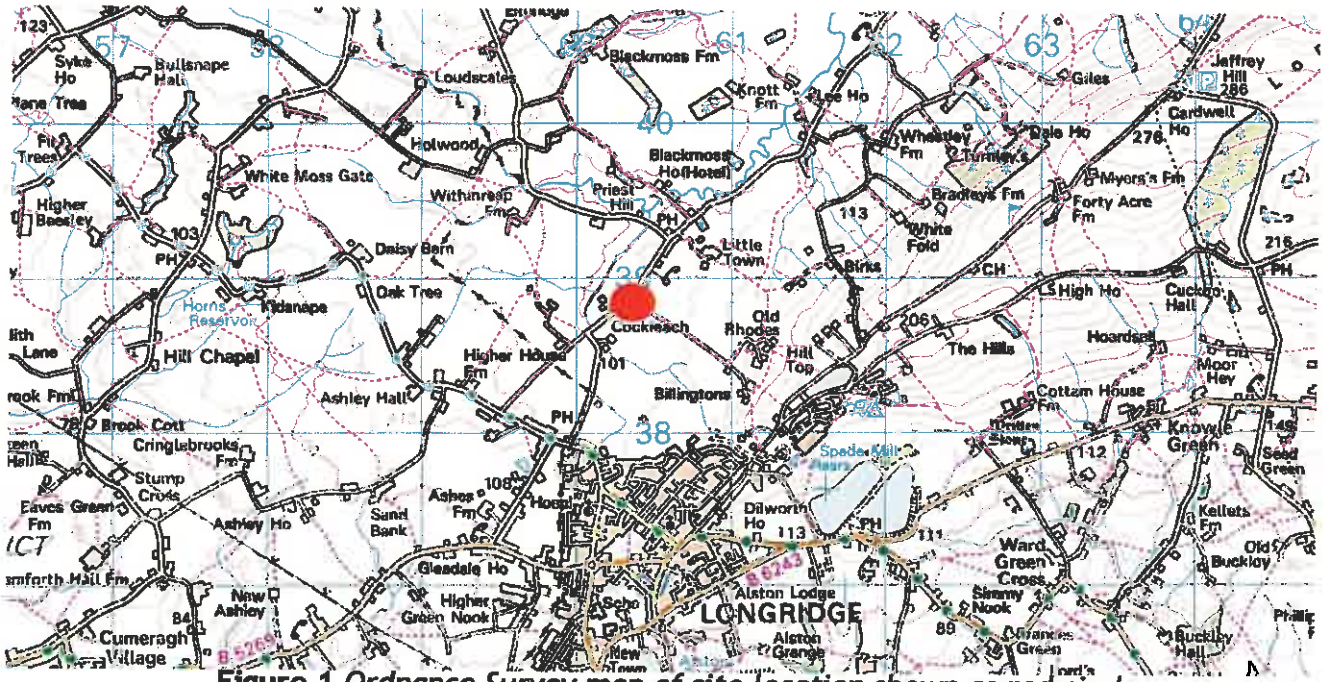

Figure 1 *Ordnance Survey map of site location shown as red circle.*

Figure 2
Site Boundary

2.2 Proposed Works

It is proposed that the building is converted to form additional residential accommodation. There will be significant internal and external alteration to the areas of the building 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 (Natural Habitats, &c) Regulations 2010 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). The following extracts from Hundt (2012) are used to determine the appropriate level of survey in accordance with the guidelines.

> Chapter 1, Paragraph 3 "The guidance should be interpreted and adapted on a case-by-case basis, according to the expert judgment of those involved. There is no substitute for knowledge and experience in survey planning, methodology and interpretation of findings, and these guidelines are intended to support these. Where examples are given they are descriptive rather than prescriptive."

Key point 1: Guidelines are descriptive rather than prescriptive and must be adapted on a case by case basis.

> Chapter 2, Paragraph 2 "A decision to undertake a bat survey should be taken if bats are reasonably likely to be present in the structure, tree, feature, site or area under consideration and may be affected by the proposed activity (whether this is development or conservation management etc.)."

Key point 2: 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.

3.1.2 Desk Study

> Chapter 4.3 "The impacts of a development depend on the species and habitats present on the site. The known presence of important habitats, rare species, known roosts, or species that have already been identified as at risk from impacts should be considered from the outset, and surveys should be designed to determine the extent of potential impacts. The aim of the pre-survey data search is therefore to collate existing information from and around the proposed development site on bat activity, roosts and landscape features that may be used by bats."

Key point 3: A records search was undertaken of the Envirotech 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.

> Chapter 4.4 "Once survey aims and objectives have been defined, and a pre-survey data search has been carried out to assess which species are likely to be found at the site, some knowledge of how and when those species use the landscape is needed so that appropriate survey methods can be chosen. Although pre-survey data searches provide useful information, it is unlikely that all potential species present at the site and roosts will be known. Consequently, surveys should be designed with this in mind, both to ensure coverage of the appropriate survey method can be chosen".

Key point 4: 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 5: To ground truth the desktop data (Key point 4) 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.

> Chapter 8.2 "A preliminary roost assessment is used to determine the actual or likely presence of bats and how they use a roost site. It involves compiling information on the location of all known or likely roost sites and looking for evidence of whether they are used by bats, by means of internal and external inspection.
>
> For many built structures, such as bridges or walls, internal inspections are not possible and different methods may be required; however, where possible, internal inspection of a structure should be carried out."

Key point 6: 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 building by bats. Where possible all gaps and cracks judged to be of a suitable size for bats to take entry to the building were inspected either from the ground or the top of a ladder. Where appropriate an endoscope was used to fully inspect these gaps internally.

A Flir E60bx thermal imaging camera was used to take thermographic readings of the building. Warmer and colder areas of the building/s were identified. Areas of rot in roof trusses, damp in walls and heat from hidden chimney flues or thermal gain from the walls and roof can all be distinguished. In addition the thermal bloom from bats roosting behind roof linings, soffit and eaves boards, roof flashing and occasionally within stone walls can be identified. Chapter 8.2 of Hundt (2012) indicates that were standard assessment cannot be used, other methods may be appropriate. Thermal imaging was considered appropriate at this site.

Key Point 7: 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 building 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 8: A thorough inspection of the interior and exterior of the building 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 9: 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 10: 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.

Chapter 8.2 Paragraph 6 "The time needed for internal and external inspection surveys depends on the number of surveyors and the complexity of the structure being surveyed. Surveys of relatively simple buildings may be straightforward and quick to complete, but it takes time to view and understand the roof structure of complex buildings or groups of buildings".

Chapter 8.2 Paragraph 7 and 8 "As a guide, an internal inspection of the roof area of an unexceptional four-bedroom domestic property is likely to take one surveyor one to two hours; an internal inspection of a traditional timber-framed farm building may take one surveyor between four hours and one day; an internal inspection of a large complex building such as a former hospital or stately home, with numerous roof voids and buildings, may take one surveyor more than one day.

When assessing a site's potential as a hibernaculum, surveyors should be aware that bats may hibernate in places that cannot be seen or accessed; this may lower the confidence in a negative survey result. It also means that inspections of winter roosts can be time-consuming, as endoscopes and mirrors are often required in order to search for individual bats or small groups of bats hidden in crevices.

Time taken for daytime external inspection surveys also varies depending on the complexity of the structure. Evidence of bats may not remain after rain or wind, so

weather and time of year will have a bearing on the level of confidence that an external inspection will give.

Key Point 11: It is the considered opinion of the surveyor who undertook this survey that the time taken to undertake the survey was sufficient given the complexity of the building, methods used, time of year and species of bat which may be present. The times in Hundt (2012) Chapter 8.2 should be considered in light of Key Point 1 (interpretation on a case by case basis) and Key Point 2 (survey should cover areas where it is reasonably likely bats are present and may be affected by the proposal).

> Chapter 4.6.2 "The overall quality of the habitat at the proposed development site, the number of habitat features likely to affect bats if altered by development, the potential impact of the proposed development, the species likely to use the site, and the importance of roosts of species likely to use site should all be considered when deciding the level of survey effort required. The level of survey effort should be proportional to the likely impact of the proposed development".

Key Point 12: In this case it is the considered opinion of the surveyor who undertook the survey that the reasonable probable likelihood and status of bats roosting at the site has been determined. Additional survey effort is therefore not required to evaluate potential impacts, species and use of the site. A table showing the timing of the survey in relation to the bat year is shown on Figure 3. This table was used to guide the above interpretation.

This site was assessed at the following period/s in the bat year Figure 3. Some roost types can be clearly identified when not in use or can be inferred from habitat type/ residual evidence.

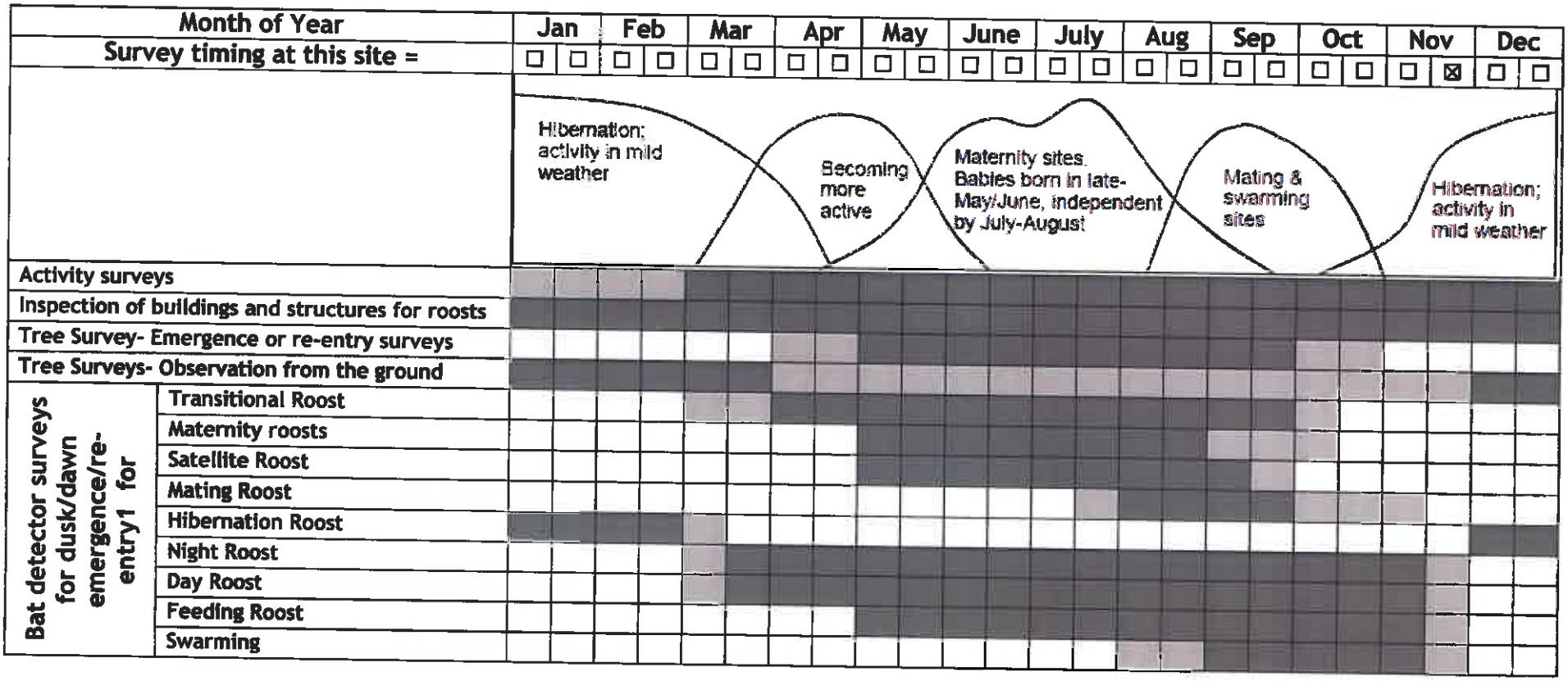

Figure 3 *Survey timing in the bat year from Mitchell-Jones (2004) and Hundt (2012).*

Key Point 13: An assessment of the species of bat likely to be found at the survey site has been made (Key Point 3 and 4). 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.

Additional details of habitat types and the potential for specific species of bat to occur at the site, which influenced the timing and scope of the survey, is included in Table 2.

Date of visit		22nd November 2013	Notes
Site inspection		2hrs	
Weather conditions	Cloud	50%	1
	Wind	Nil	1
	Rain	Nil	1
	Temperature	4 Degrees Celsius	1
Surveyors		MT	

Table 1 *Survey dates and times.*

1. 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. Mr Matthew Thomas (MT) BSc (Hons), Grad CIEEM,

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 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 14: A desk study was conducted within 5km 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 15: 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 16: 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 17: 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 18: 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 19: 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 20: 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 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 21: 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 22: 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 23: 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 were 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).

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

European Commission (2007), section (54) and (59) state

"(54) It thus follows from Article 12(1)(d) that such breeding sites and resting places also need to be protected when they are not being used, 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 re-use it in winter. On the other hand, if a certain cave is used only occasionally for breeding or resting purposes, it is very likely that the site does not qualify as a breeding site or resting place."

(59) 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. Resting places that are used regularly, either within or between years, must be protected even when not occupied."

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 (2007) summaries the requirement for the protection of resting sites thus

"Breeding sites and resting places are to be strictly protected, because they are crucial to the life cycle of animals and are vital parts 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 a specific animal to rest or to breed successfully. The protection applies all year round if these sites are used on a regular basis." [Emphasis added]

Summary

"Breeding site"

Breeding is defined here as mating and giving birth to young. A breeding site is the area needed to mate and to give birth in, and includes the vicinity of the roost or parturition site, where offspring are dependent on such sites. For some species, breeding sites include structures needed for territorial definition and defence. Breeding sites that are used regularly, either within or between years, must be protected even when not occupied. Breeding sites include areas required for:

1. Courtship
2. Mating
3. Parturition, including areas around the parturition site when it is occupied by young dependent on that site.

Resting place

Resting places are defined here as the areas essential to sustain bats when they are not active. Resting places that are used regularly, either within or between years, must be protected even when not occupied. Resting places essential for survival include structures and habitat features required for:

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 records returned 54 records of 5 bat species within 3km but no records for the site.

Records are shown on Figure 4.

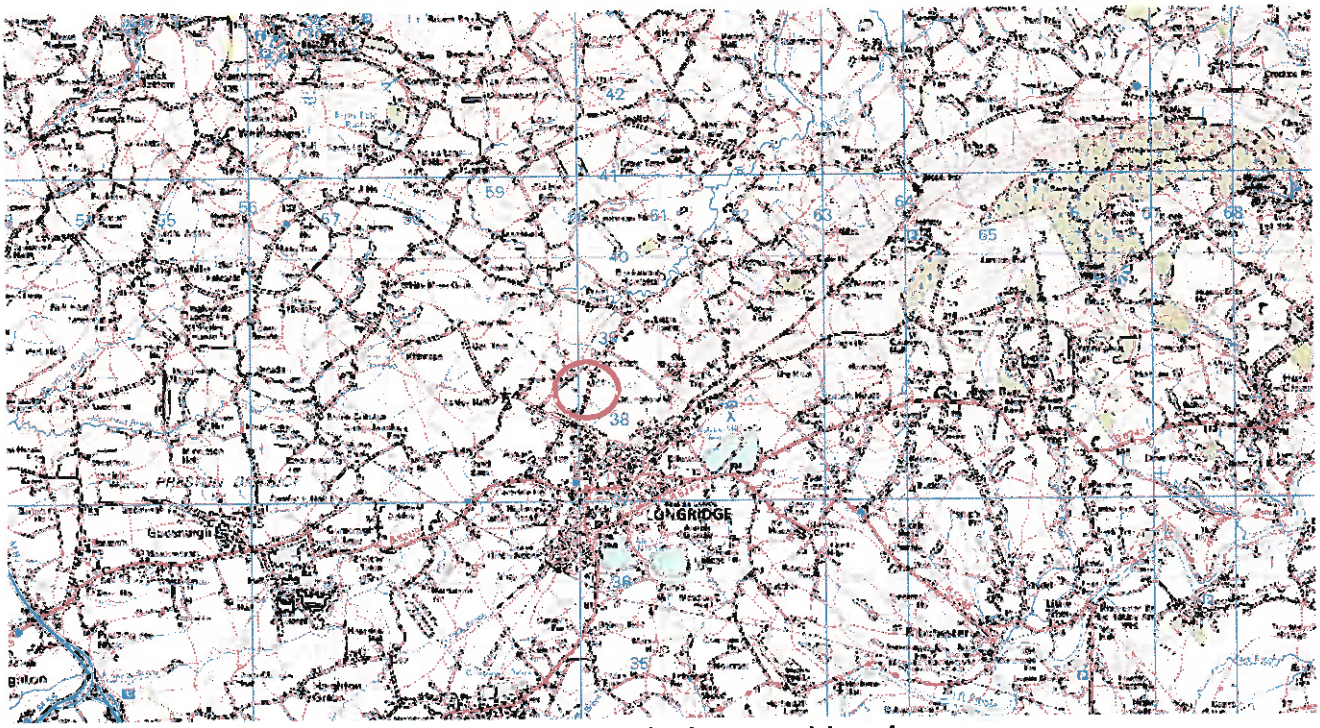

Figure 4 *Bat records shown as blue dots.*

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


Fragmented hedgerows of moderate foraging quality to foraging bats
Slow meandering river will provide some opportunities for bats in the local area
Key
Site Boundary
N
Open pasture and arable land of low quality to bats
Reservoir likely to provide some foraging opportunities for bats in the area
Google earth
envirotech
Figure 5
Habitat

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 2. 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.

Species	Ecology	Suitable features on/adjacent to site	Highly likely to occur	May occur	Unlikely to occur
Common Pipistrelle (*Pipistrellus pipistrellus*)	**Foraging & Commuting Habitat:** wide range including those associated with watercourses, woodland, grassland & built up areas; also feeds around lights. **Flying range:** feeding areas up to 3-4km from roosts. **Distribution:** common throughout UK; most common species in England & Wales.	Common Pipistrelles are likely to make use of the fragmented hedgerows and patches of woodland to forage. They are unlikely to use the site for foraging in significant numbers due to its exposed nature and low vegetative diversity. Livestock are not housed in the building on site there is little livestock manure on the surrounding landscape which would be attractive to insects and bats.	**Locally**		
			☒	☐	☐
			On Site		
			☐	☒	☐
Soprano Pipistrelle (*Pipistrellus pygmaeus*)	**Foraging & Commuting Habitat:** forages mostly over habitats associated with water, often follows watercourses when commuting. **Flying range:** feeding areas up to 3-4km from roosts. **Distribution:** common throughout UK; second most common species in UK, more so in North & West.	The river to the North of the site would be favourable for bats which feed in "water" landscapes such as Soprano Pipistrelle. They are unlikely to use the site for foraging in significant numbers due to the exposed nature of the site and low vegetative diversity. Livestock are not housed in the building on site and there is little livestock manure associated with the site which would be attractive to insects and bats.	**Locally**		
			☒	☐	☐
			On Site		
			☐	☒	☐

Daubenton's Bat (*Myotis daubentonii*)	**Foraging & Commuting Habitat:** forages mainly close to the surface of slow-moving or calm water. Also forages along trees & woodland rides, especially when associated with water. **Flying range:** feeds up to 6-10km from roost. **Distribution:** throughout UK with the exception of some offshore islands.	Daubenton's forages almost exclusively around water. The reservoirs to the South-east are a more likely habitat for this species to use than the site. Its presence locally is likely, its presence on site is unlikely.	**Locally** ☐ ☒ ☐ **On Site** ☐ ☐ ☒
Nathusius' Pipistrelle (*Pipistrellus nathusii*)	**Foraging & Commuting Habitat:** forages over water & along woodland edges & rides. **Flying range:** nightly flying poorly known. Long distance migrant, may cross from continental Europe seasonally. **Distribution:** Unclear. Present in southern England, Scotland & Northern Ireland & probably Wales.	This species of bat is widespread but uncommon. They are unlikely to use the site for foraging in significant numbers due to the exposed nature of the site and low vegetative diversity. Livestock are not housed in the building on site and there is little livestock manure which would be attractive to insects and bats.	**Locally** ☐ ☐ ☒ **On Site** ☐ ☐ ☒
Brown Long-eared Bat (*Plecotus auritus*)	**Foraging & Commuting Habitat:** lives & forages in woodland & parkland with old trees. **Flying range:** generally within 1-2km of roost. **Distribution:** common throughout UK where there is suitable woodland. Rarely heard on bat detectors as echolocation intensity low.	Brown Long-eared bats prefer the cover of mature trees and woodland and rarely forage or commute in the open. Suitable habitat for the species occurs locally but the site is considered to be too open and exposed for use.	**Locally** ☐ ☒ ☐ **On Site** ☐ ☐ ☒

Natterer's Bat (*Myotis nattereri*)	**Foraging & Commuting Habitat:** forages in tree canopies or close to foliage & by the edge of water, higher above the surface than Daubenton's bats. **Flying range:** generally up to 3km from roosts, though travels ~60km between summer/autumn and winter roosts. **Distribution:** throughout the UK with the exception of the far North of Scotland; wherever there is suitable woodland.	Natterer's bats, like Brown Long-eared bats prefer the cover of mature trees and woodland and rarely venture into exposed locations such as the site. Their presence in the local area is likely but they are unlikely to occur on site.	**Locally**		
			☐	☒	☐
			On Site		
			☐	☐	☒
Whiskered Bat / Brandt's Bat (*Myotis mystacinus) / Myotis brandtii*)	**Foraging & Commuting Habitat:** whiskered forage in a wide range of habitats including woodland, parkland, flowing water & sub-urban gardens. Brandt's bats forage in woodlands & close to water bodies. **Flying range:** unknown. Distance between summer & winter roosts usually <50km. **Distribution:** little known about individual distribution. Whiskered & Brandt's found throughout England, Wales, southern Scotland & parts of Northern Ireland.	Whiskered and Brandt's are likely to make use of the fragmented hedgerows and patchy woodland to forage. They are unlikely to use the site in significant numbers due to the poor connectivity of the site with woodland. The site is highly unlikely to be required for species survival.	**Locally**		
			☒	☐	☐
			On Site		
			☐	☒	☐

Noctule (*Nyctalus noctula*)	**Foraging & Commuting Habitat:** flies high & straight to feeding sites over parkland, pasture, water & deciduous woodland. Also feeds around lights. **Flying range:** migratory (>100km) in continental Europe. **Distribution:** throughout England & Wales into southern Scotland. Not recorded in Ireland.	Noctules fly high and fast covering a wide variety of habitats in their nightly foraging activities. The site is unlikely to be a significant feature in the landscape for them as there is limited vegetative diversity and no livestock and associated manure.	**Locally**		
			☒	☐	☐
			On Site		
			☐	☒	☐

Table 2 *Bat species which may or may not occur on or near the site based on the local landscape.*

Barn Owls

There are no records of Barn Owls within 5km of the site on the Envirotech 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. Birds reliant upon buildings for nesting such as swallow are unlikely to occur at high densities on site due to its exposure and poor quality.

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 route for bats into and out of the site is the hedgerow to the South-east. The surrounding habitat is considered to have a low foraging potential for bats.

The site is not considered to offer optimal foraging opportunities. There are few animal manures associated with the surrounding land. There is limited vegetative diversity around the building which is in an exposed location.

5.2.2 Bat Roost Survey

5.2.2.1 General description

There is one building on site under consideration in this report which comprises a small cattle shed built from red brick with a slate roof.

5.2.2.2 External walls/ Eaves

The walls of the building are constructed from red brick and are in reasonable condition. There are no gaps or cracks suitable for roosting or hibernating bats. There are no windows in the building, but there are loosely fitting boards which allow wind to pass straight through the building rendering the internal space cold and draughty.

No indication of use of the external walls by bats could be found, we consider they offer negligible potential for use.

5.2.2.3 Roof

The building is roofed with slate and is unlined; there are large glass tiles in the roof and slates missing. The roof provides a poor seal for the building and allows light and wind into the internal space. As the roof is unlined gaps under the roof coverings are exposed, shallow and cold. They offer negligible potential for use by bats for roosting. No indications of use of the roof could be found, the roof could be fully inspected.

5.2.2.4 Internal walls

The internal walls are accessible to bats as the building is poorly sealed, however as the walls are well pointed, there are no opportunities for bats to roost or hibernate. The wall tops are sealed off by timber joists which sit neatly against them. No droppings or other indications of use of the internal space by bats could be found. The internal space appears cold draughty and light. It offers a low potential for use by void dwelling bats.

5.2.2.5 Roof Voids/ Roof structure

There are no roof voids in the building; the interior space is open to the roof. The entire interior space is well lit by the skylights and is very draughty and cold. There are no suitable places for bats to roost within it.

5.2.2.6 Summary

To summarise the building is of a small size and the external walls are in good condition. The building is poorly sealed, draughty and cold inside and well illuminated by the skylights in the roof. There are few opportunities for bats to roost in or on this building. No indications of past or current use could be found and we consider it offers negligible potential for use.

5.2.3 Barn *Owls*

5.2.3.1 Potential Nest Sites (PNS)

No potential nest sites occur within the building. There are no gaps large enough to allow Barn Owls access to the building.

5.2.3.2 Active Roost Sites (ARS)

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

5.2.3.3 Temporary Roost Sites (TRS)

There was no "white wash" and or old barn owl pellets on the floors and or on surfaces inside

the building which suggest that Barn Owls have a temporary roost site.

5.2.3.4 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 any part of the building.

5.2.4 Nesting birds

A Wrens (*Troglodytes troglodytes*) nest was on the floor of building having fallen from a roof joist. It is likely wrens may try to nest again in the building the season following our survey (2014).

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 building and nature of the proposed work. The level of survey effort accords with the recommendations of Hundt (2012). The reasonable probable use of the site by bats has been determined.

6.2 Barn Owls

No constraints.

6.3 Nesting Birds

Surveys were undertaken outside the nesting season but 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.

7. INTERPRETATION

7.1 Presence / absence

There was no past or current evidence of bats roosting found at the site during the survey.

We consider that the building is unlikely to be used by significant numbers of bats for roosting. It is highly unlikely the building is essential for species survival. Precautionary mitigation would be appropriate.

7.2 Population size class assessment

From a review of adjacent habitat the maximum number of bats that are likely to use the area around the site is of the magnitude 1-10 (small).

Barn owls are currently considered to be absent.

There was no indication of current use of the site by nesting birds.

7.3 Site status assessment

Whilst the site itself is unlikely to be used as a roost by a significant number of bats, there is use of the adjacent landscape. Bats are likely to rely on a number of roost sites in buildings and trees in the local area. It is therefore likely that the site has a low significance for bats. We consider the Continued Ecological Functionality of the site is unlikely to be affected as a result of the proposal.

We are of the opinion that the building is not currently used by Barn Owls and will have a low significance for this species.

The building may be used by low numbers of nesting birds. The building is however likely to have a low significance for these species.

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

No signs of past maternity or gathering roosts were found at the site during the survey. The potential for a maternity or gathering roost in the building is judged to be very low due to the absence of highly suitable roost sites. Evidence of past use of the site by large numbers of bats such as would occur in a maternity or gathering roost, such as staining on the roof or walls, was absent. Evidence of intensive/ regular use such as occurs in such roosts can usually be found at any time of year. **We judge there is no risk to a maternity colony or gathering roost at this site from the proposed work.**

8.1.1.2 Satellite Roosts

We do not consider that satellite roosts will be affected by the proposal. We consider the local environs are unlikely to support linked maternity roosts.

8.1.1.3 Transitional and day roost sites

We judge there is a low risk of disturbing bats in or loss of transitional or day roost sites. We judge that on balance it is unlikely this sites potential for use for these purposes will be degraded by the proposed work. There are likely to be numerous other more suitable sites in other buildings and trees in the wider area. The building is unlikely to offer significant roosting potential.

8.1.1.4 Night Roosts

We do not consider the site is sufficiently close to or linked with high quality foraging habitat such that bats may use it for night roosting.

8.1.1.5 Feeding roosts

We do not consider the site is sufficiently close to or linked with high quality foraging habitat such that bats may use it for feeding roosts.

8.1.1.6 Lek sites

In our experience lek sites are commonly found in proximity to the main feeding and commuting routes. The primarily commuting and feeding area at the site was judged to be the hedgerow to the South-east. There were no potential lek sites identified in the building facing this commuting route which are also close enough to it to be used by male bats for leks. It is therefore unlikely there will be use of the building by bats for lekking.

8.1.1.7 Hibernation

There are no areas of rotten wood in the building and or damp walls which also offer crevices which could be suitable for hibernating *Pipistrelle* spp. bats.

There are no areas of the building which are sufficiently damp, cool and darkened which would be ideal for hibernating *Myotis* spp. bats. There is very little evidence and limited potential for hibernation at the site; it is therefore unlikely there will be loss of hibernation sites.

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 *(Plecotus auritus)* which have been known to swarm as there are no hibernation sites for these species in the building.

8.1.1.9 Summary

Without mitigation, there is considered to be only a low potential for the alteration or loss of occasional, unconfirmed roost sites for bats at the site and this is unlikely to have a significant impact on their local distribution.

8.1.2 Long term impacts

There is on balance a low risk of long term negative impacts on the favourable conservation status of bats in the local area as a result of the proposed work.

8.1.3 Post activity interference impacts

There is unlikely to be disturbance to roosting bats during the post construction phase of the project. There is already significant disturbance at the site from existing use of the site and surrounds.

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.

8.1.5 Bat Foraging and Commuting Habitat

There is unlikely to be a disruption to any commuting routes at the site. The site does not lie on or near to a high quality commuting route.

There is unlikely to be a disturbance to feeding bats during and after the construction phase of the project. It is judged that the foraging areas near the site will be unaffected by the proposed work.

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 building, there is no indication of any type of past use.

8.3 Nesting birds

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. It is unlikely that the loss of potential nest sites would have significant long term impacts on local bird populations. The habitat around the site is open and exposed; it offers low quality foraging opportunities.

9. RECOMMENDATIONS AND MITIGATION

9.1 Further Survey

We consider that the risk to bats in the building will remain low and no additional survey work is required prior to the determination of the planning application.

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.

The site survey found no evidence of habitual use of the building by roosting bats in or

between years. The survey effort was sufficient to allow for an assessment of this to be made.

9.2.1.1 Bat Roosts

As a precautionary approach the following guidelines will be adhered to.

1. All contractors on the site will be made aware of the possible presence of bats prior to the commencement of work.

2. Contractors will be provided with the contact details of an appropriately qualified individual who can provide advice in relation to bats at any time during work. In the event that bats are found during work, unless the action has already been cleared by a suitably qualified individual, **all work will cease** and an appropriately qualified individual will be contacted for further advice.

3. Contractors will be observant during demolition work for bats which may use the building if new areas of the roof are exposed and left open overnight. Bats are opportunistic and may make use of gaps opened up during work overnight.

4. If it is necessary to remove a bat to avoid it being harmed, gloves should be worn. It should be carefully caught in a cardboard box and kept in the dark in a quiet place until it can be released at dusk near to where it was found, or moved to an undisturbed part of the building, with outside access, and placed in a location safe from predators.

5. **If bats or bat roosts are found during work, all work should cease.** The site will need to be re-assessed in regard to its use by bats. A Natural England license may be required if continuing work is, on balance, likely to result in the disturbance, killing or injury of bats or the alteration, destruction or obstruction of roost site.

6. Remove all roof coverings by hand only.

7. Retain at least 4 gaps along the eaves lines of the building which allow access to the wall tops under the eaves during any re-roofing which is undertaken. A plan for these type of roost is shown on Figure 6. These new potential roost sites will be a significant improvement on existing site conditions.

8. There is no need to restrict the timing of work. Use of the structure by bats is equally likely to occur at any time of the year but will be at low levels.

Following English Nature (Natural England) guidance Mitchell-Jones (2004), if these guidelines are followed we would consider that on balance, a disturbance to bat species which could be contrary to the 2010 Habitat Regulations and Wildlife and Countryside Act 1981 (as amended) is unlikely. **If bats are found prior to or during work a license application may be required.**

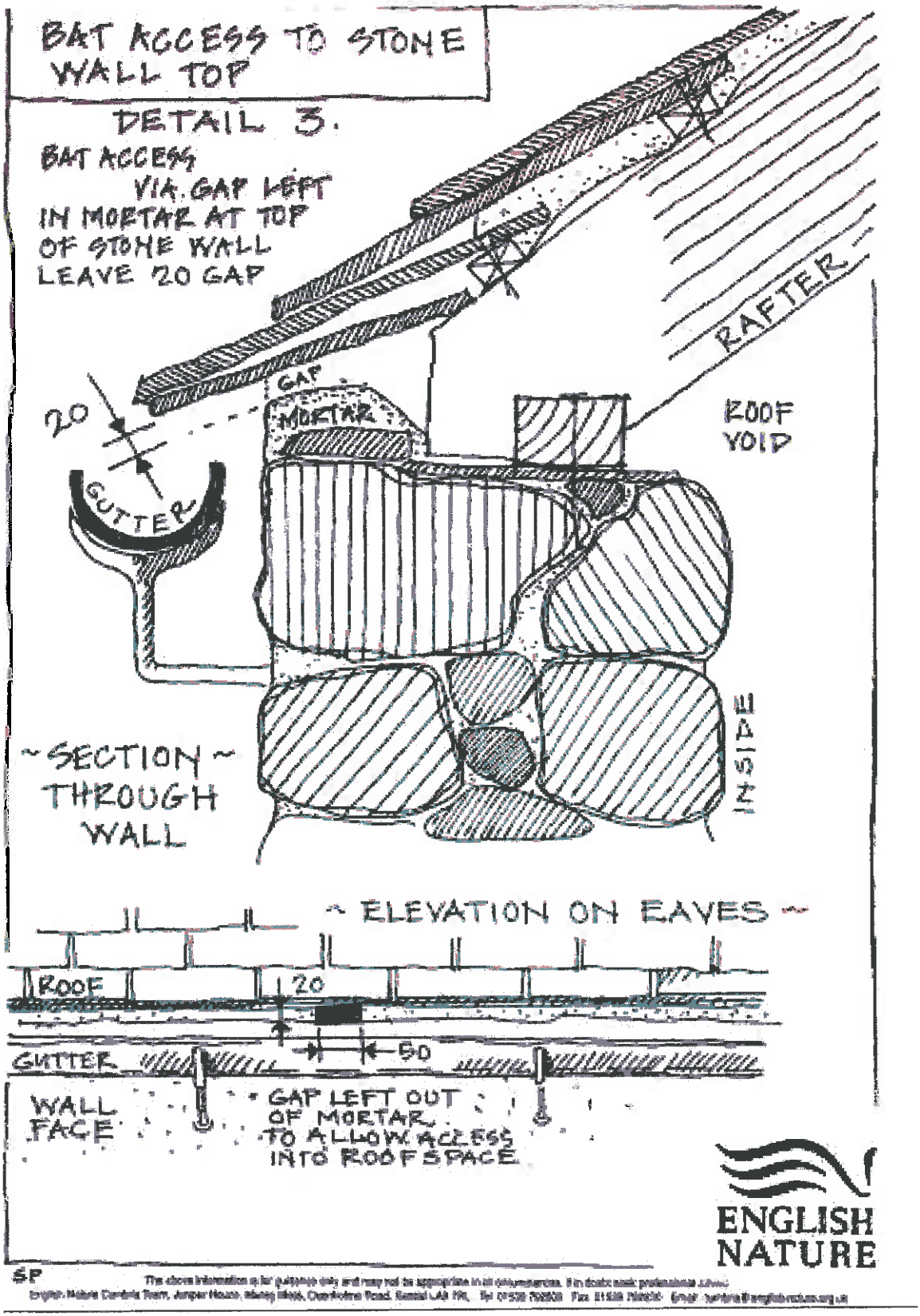

Figure 6 *New roost site creation.*

9.2.1.2 Mitigation for Foraging and Commuting Habitat

No specific mitigation for foraging and commuting habitat is necessary. The habitat surrounding the site does not change significantly.

9.2.1.3 Requirement for Habitats Regulations (EPS) Licence

At this stage, we judge that a Natural England license will not be required to cover work on the building. No bats were confirmed as breeding or roosting at the site, the loss of potential roost sites will be avoided and no significant disturbance to bats will occur, so long as the recommendations of this report are followed.

If bats are likely to be significantly disturbed or bat roosts or breeding sites are found as a result of work, all work must cease and the site will need to be re-assessed by a suitably qualified person with regard to its use by bats. A Natural England license may be required if continuing work is, on balance, likely to result in the disturbance, killing or injury of bats or the alteration, destruction or obstruction of a roost or breeding site.

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 license 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.

10. MITIGATION SUMMARY

The site survey found no evidence of bats roosting although there is a possibility of opportunistic use by low numbers of bats at some times of the year. The level of use is not considered likely to be significant and with the retention/ creation of gaps at the eaves and precautionary mitigation, a significant disturbance and or the loss of roost sites is unlikely to occur.

There was no evidence of birds currently nesting. Work will not be commenced or undertaken in such a way as active nest sites are disturbed.

There is no evidence of past use of the barn by Barn Owls for roosting or nesting.

On the basis of survey information, specialist knowledge of bat species and the mitigation that has been proposed, it is considered that on balance the proposed activity is reasonably unlikely to result in an offence under regulation 39 of the Conservation (Natural Habitats, &c.) Regulations 2010. We do not consider there to be a need for a Natural England licence at this time.

11. REFERENCES

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

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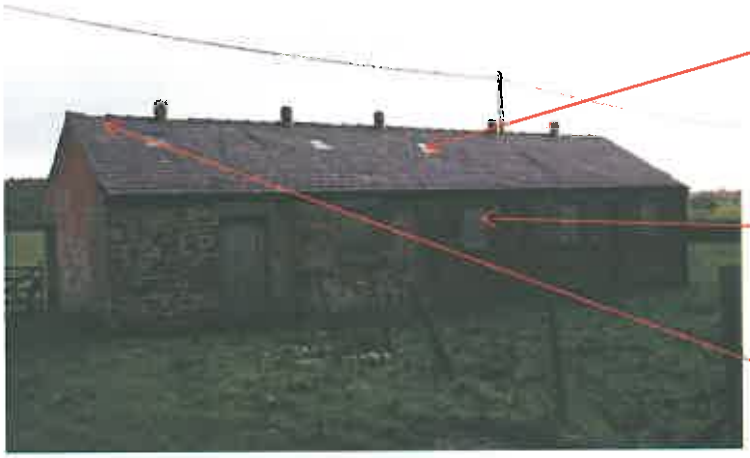
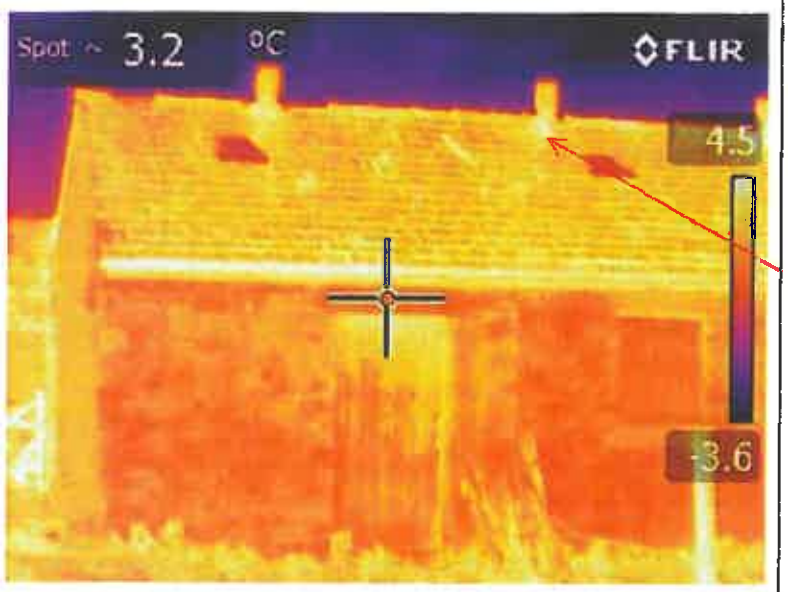
APPENDIX 1 PREVIOUS SURVEY INFORMATION

None.

APPENDIX 2 PHOTOGRAPHS

Photograph	Notes
	**A view South-east at the building.** Skylights Gaps round windows Ridge tiles and slates
	**The view of the interior.** Skylights light up the interior Gaps allow wind to whistle through making the interior space draughty and cold
	**The South elevation of the building.** Despite being slightly degraded the walls have no cracks or crevices The roof has many gaps which will allow bats access to the interior



A thermal image of the West elevation.

Very few areas of the building have areas which are significantly warmer than others due to the ventilation and open nature of the building