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Ecological Consultants
Environmental and Rural Chartered Surveyors

BAT, BARN OWL & NESTING BIRD SURVEY AT

SOUTHPORT HOUSE, SAWLEY

Green at Heart BEN GOLD

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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 Chartered Institute of Ecology and Environmental Management. (www.cieem.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 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, MCIEEM, MRICS, CEnv, Dip NDEA
Director

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1. EXECUTIVE SUMMARY

It is understood that the derelict chicken sheds to the rear of Southport House, Sawley, Lancashire, will be cleared to facilitate redevelopment of the site.

A daytime inspection was undertaken on the 21st April 2015. This involved a close inspection of the buildings for signs of use by bats, barn owls and birds both internally and externally.

Additional assessments, including a records search and habitat assessment 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 low-moderate potential for foraging being open and exposed immediately around the buildings, though higher quality habitats do occur in wider landscaper. There is moderate connectivity between the site and higher quality foraging areas via a tree lined access track.

No indications of use of the site by bats, barn owls or nesting birds were 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 in the village of Sawley, Lancashire. The surveyed buildings four derelict chicken sheds which are in varying states of disrepair. The buildings are all of concrete block and timber construction under pitched cement fibre or metal corrugate roofs.

There is fragmented woodland and the River Ribble in the local area but the site is in an open position at SD 77769 46194, Figure 1 and 2.

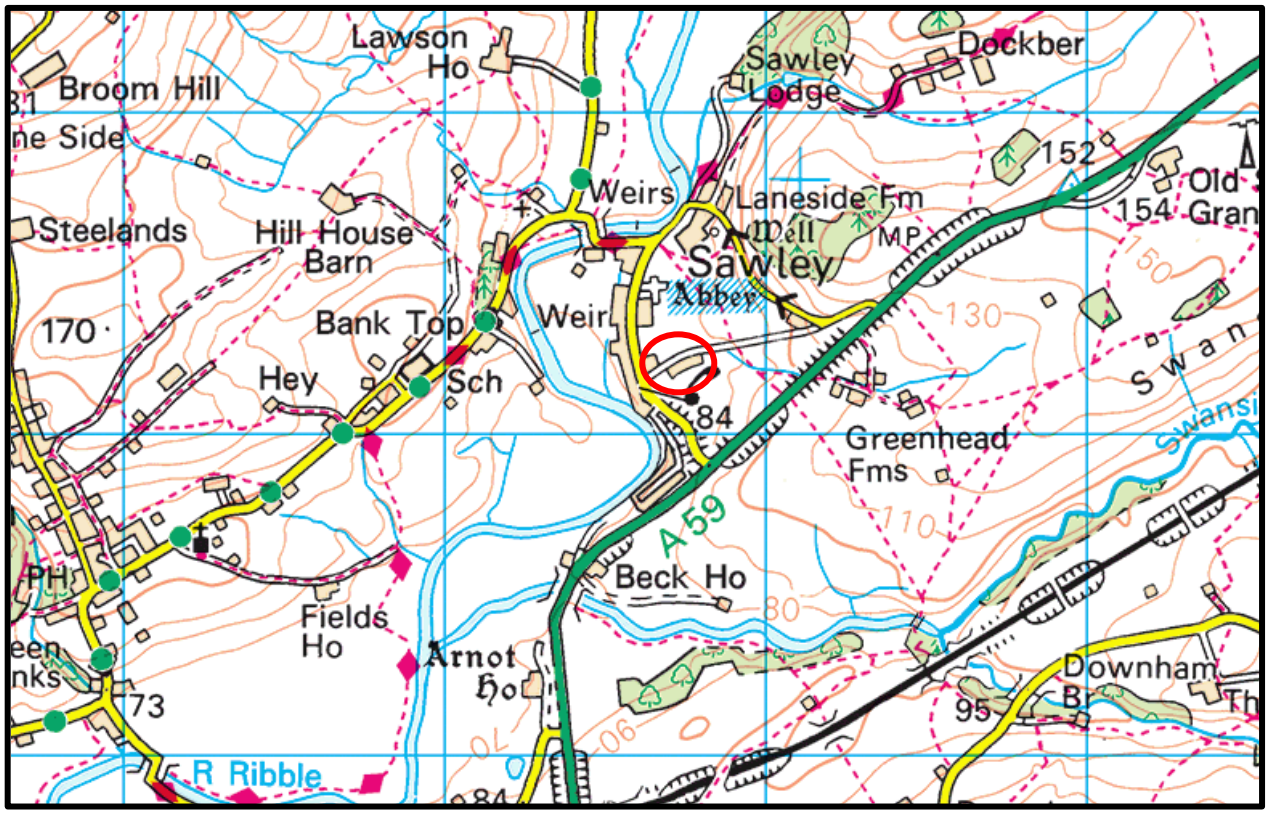

Figure 1 *Ordnance Survey map of site location circled in* (*red*)

N

Key

Site Boundary

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Figure 2
Site Boundary

SCALE: NTS | REV 01

2.2 Proposed Works

It is proposed that the buildings are demolished to facilitate the redevelopment of the site. A new residential dwelling and associated gardens are to be constructed on the site.

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 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.

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 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 8: 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 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 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. 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 surveyors 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.

Month of Year		Jan		Feb		Mar		Apr		May		June		July		Aug		Sep		Oct		Nov		Dec	
Survey timing at this site =		☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
		Hibernation; activity in mild weather						Becoming more active		Maternity sites. Babies born in late-May/June, independent by July-August								Mating & swarming sites						Hibernation; activity in mild weather	
Activity surveys																									
Inspection of buildings and structures for roosts																									
Tree Survey- Emergence or re-entry surveys																									
Tree Surveys- Observation from the ground																									
Bat detector surveys for dusk/dawn emergence/re-entry for	Transitional Roost																								
	Maternity roosts																								
	Satellite Roost																								
	Mating Roost																								
	Hibernation Roost																								
	Night Roost																								
	Day Roost																								
	Feeding Roost																								
	Swarming																								

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		21st April 2015	Notes
Site inspection		1hr	
Weather conditions	Cloud	0%	1
	Wind	Nil	1
	Rain	Nil	1
	Temperature	15 Degrees Celsius	1
Surveyors		CA, EW	

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 Chris Arthur (CA) BSc (Hons), Grad CIEEM
   Unlicenced observer with experience in emergence surveys

2. Ms Emma Wainwright (EW) BSc (Hons)
   Natural England Bat Licence (All species, all counties)

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 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 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 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 (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 <u>regular basis</u>." [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 dataset found a single record for soprano pipistrelle (*Pipistrellus pygmaeus*) within 2km but no records for the site. No other bats species have been recorded locally, but this is likely to be under-representative of their true distribution, likely a consequence of low survey effort.

Records are shown on Figure 4.

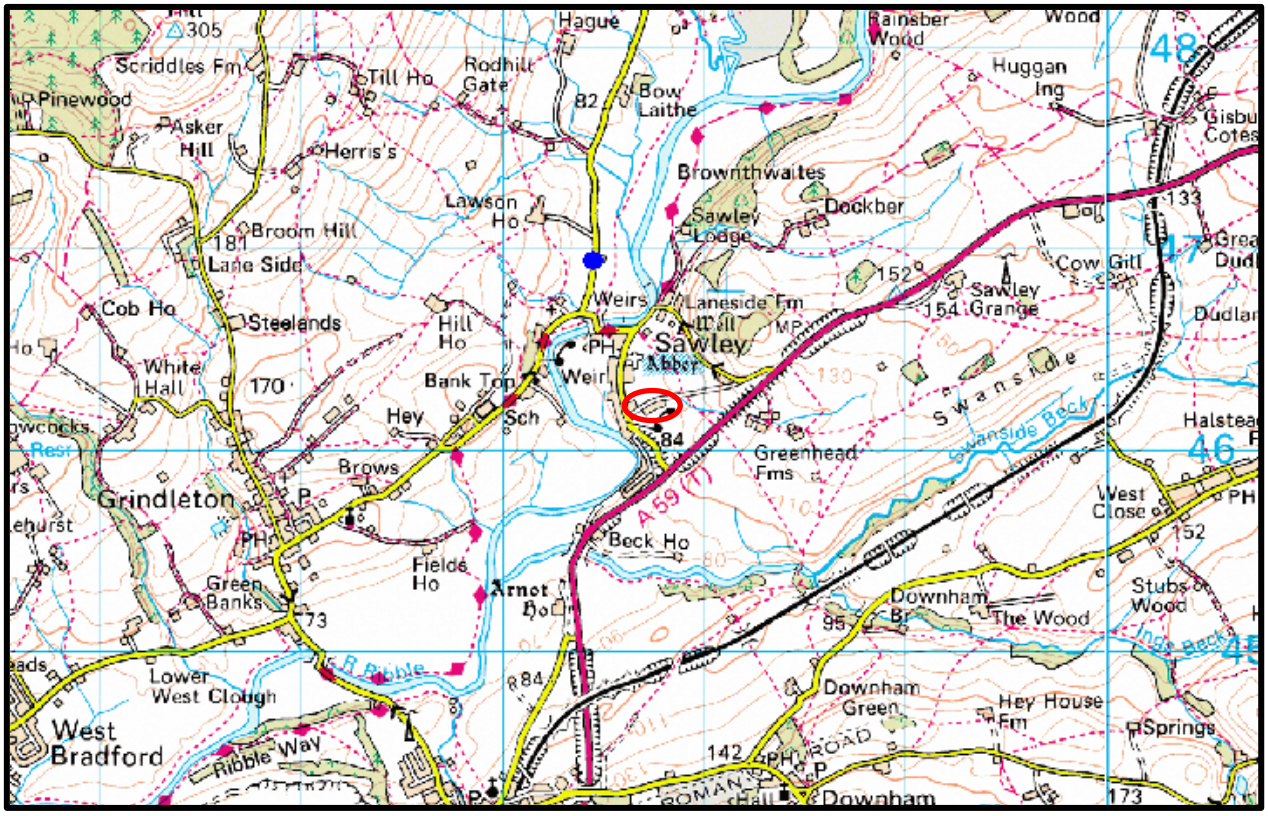
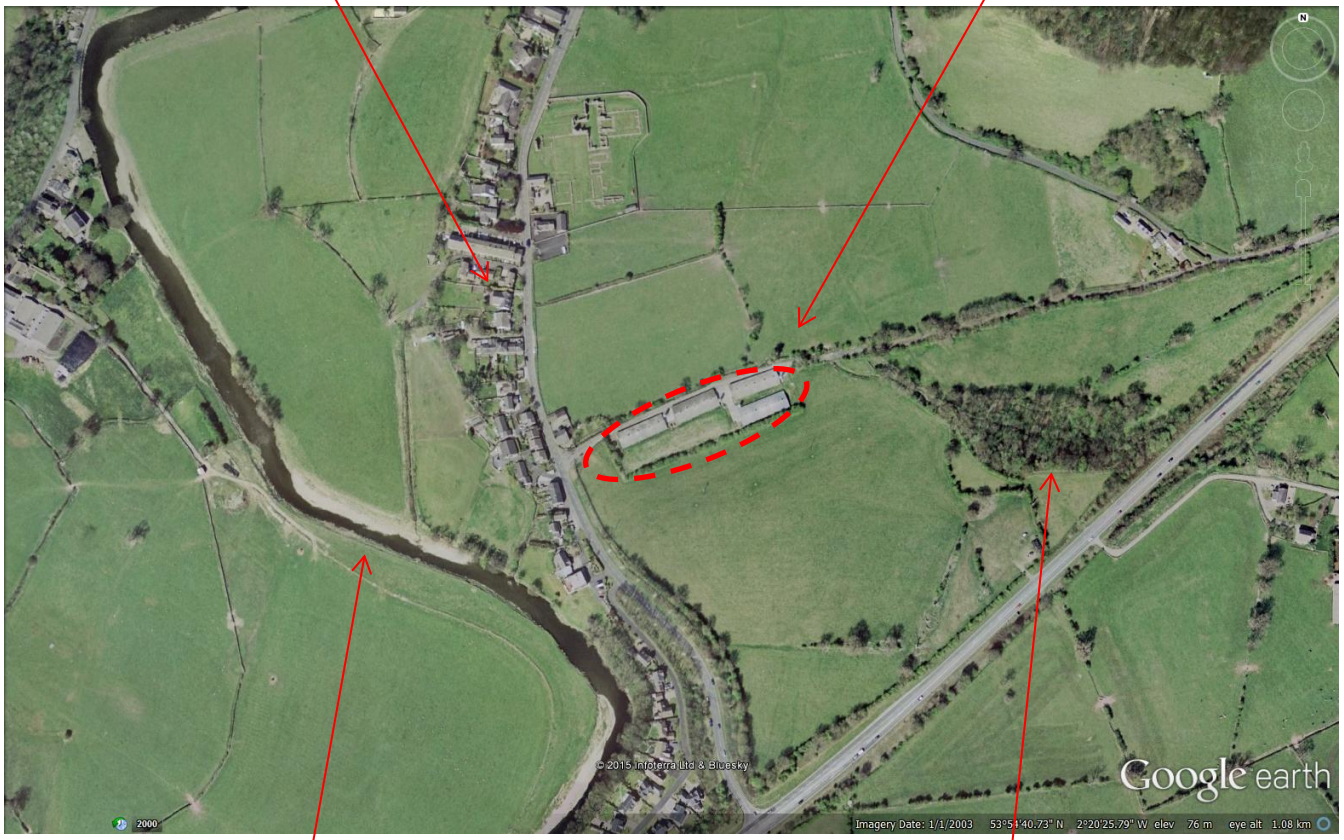


Figure 4 *Bat records shown in blue, site circled in red*

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

Residential dwellings offer numerous potential roost sites in the local area

The site is encompassed by poor semi-improved grassland of low value to bats



The nearby River Ribble offers high quality foraging habitat and a strong commuting route

Fragmented woodland offers pockets of foraging habitat

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Key

Site Boundary

envirotech

Figure 5
Habitat

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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 generalist foragers that can exploit any available resource. The nearby River Ribble and the fragments of woodland locally would hold the greatest interest for this species. The low quality habitats adjacent to the site would be of comparatively little concern.	**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.	Soprano pipistrelles are also generalist foragers but with an affinity for fresh water. The River Ribble to the West would be perfect for this species, but they may also forage amongst the fragmented woodland nearby. The small stream adjacent to the site may potentially be used by this species, but it is of low value when compared to the nearby river.	**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 bats are strongly associated with freshwater and are rarely recorded foraging elsewhere. The River Ribble to the West of the site is ideal for this species and is likely to support significant numbers. The stream adjacent to the site is too small to be used by Daubenton's bats, but the site is close enough to potentially be used for roosting.	**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 generally found amongst high quality near water. Such habitats may occur at other locations along the River Ribble, but are not found in proximity to the site.	**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 to fly inside enclosed spaces before emerging into dark, cluttered environments such as woodland. Although the habitat immediately adjacent to the buildings on site is open and exposed, it is connected to a small woodland via a tree lined track. Whilst not perfect for this species, there is potential for the site to be used by them.	**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 exhibit similar habitat requirements to brown long-eared bats albeit with an additional preference for freshwater. Although all requisite habitats occur in the vicinity of the site, they are disconnected and do not form the type of landscape typically associated with this species.	**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 bats forage along linear features such woodland edges and habitats. The tree lined track to the North of the site provides excellent foraging habitat for these species, though the core of the site is too open and un-vegetated to be of any value.	**Locally**		
			☒	☐	☐
			On Site		
			☒	☐	☐

Alcathoe Bat *(Myotis alcathoe)*	**Foraging & Commuting Habitat:** Alcathoe bats forage high in the canopy of trees, near water. In eastern Europe they are closely associated with ancient woodland. **Flying range:** unknown. Distance between summer & winter roosts usually <50km. **Distribution:** Alcathoe only recorded from sites in Sussex and Yorkshire from 2003.	Alcathoes bat are widespread, population densities are unknown but they have a strong preference for ancient woodland near water in Europe where they are more common. Such habitats are not present in the vicinity of the site, and so this species is unlikely to occur locally.	**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 disperse widely from their roosts, which tend to be in trees, to feed around significant features in the landscape. The River Ribble and the fragments of woodland locally are significant features, the site is not.	**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 2km of the site on the Envirotech or NBN 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 surrounding habitat which would not be ideal for large numbers of invertebrates.

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 tree lined track to the North. The surrounding habitat is considered to have low-moderate foraging potential.

The site is not considered to offer optimal foraging opportunities. There is limited vegetative diversity around the buildings which are in an exposed location.

5.2.2 Bat Roost Survey

5.2.2.1 General description

There are four derelict chicken sheds on site. Despite being in varying states of disrepair, these are of identical construction and so are described collectively.

5.2.3 Building 1

5.2.3.1 External walls/ Eaves

The lower sections of the walls of the buildings are made from concrete blocks, with timber panels on the upper halves. The concrete blocks are well pointed and completely sealed, leaving no gaps suitable for use by bats. The wooden panels, where intact, are tightly fitted and similarly do not offer roosting opportunities. Where the wooden panels are missing, the resultant holes are large and due to the single skin nature of the elevations, no cavities or crevices are created.

Side ventilation boxes are present along each of the building and are made from wood. These offer numerous access points to the interior of the buildings, but are too large and draughty to be used for roosting themselves.

No other features occur externally that would provide roosting sites.

5.2.3.2 Roof

The roofs of the buildings are pitched and made from cement fibre or metal corrugate. These materials make them inherently unsuitable for use by bats.

5.2.3.3 Internal walls

The internal walls of the buildings are identical to the external walls and of no greater potential.

5.2.3.4 Roof Voids/ Roof structure

No enclosed voids occur anywhere in any of the buildings. The roof structures are revealed and easily inspected. The timber beams in the roofs were found to be in excellent condition with no rot, splits or gaps suitable for roosting or hibernating bats.

The roofs are all lined with fire board panelling, which has detached in places leaving small gaps under which bats could potentially roost. The doorways on the gable ends of each of the buildings are missing. Combined with the various holes in doorways and elevations, conditions internally are very light, cold and draughty. Whilst the detached fibre boards offer a small number of potential roosts, these are judged to be very low quality and would not support significant numbers of bats. No signs of use such as urine staining could be found in these locations, and no droppings were found anywhere in the buildings.

5.2.3.5 Summary

To summarise the buildings are long but low, and in disrepair resulting in large holes at numerous locations. These permit high levels of natural light and wind to penetrate, reducing the suitability of the inherently low quality potential roosts that exist internally. Externally, the buildings lack any features that could be used by bats and are constructed of materials of intrinsically little value to these species.

5.2.4 Barn *Owls*

5.2.4.1 Potential Nest Sites (PNS)

No potential nest sites occur within the buildings.

5.2.4.2 Active Roost Sites (ARS)

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

5.2.4.3 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.

5.2.4.4 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 of the buildings.

5.2.5 Nesting birds

Old swallow and other passerine nests were found in each of the buildings. These nests were found to be vacant at the time of the surveys.

Overall it was not considered that the buildings offer significant nesting potential for birds due to the sub-optimal feeding opportunities adjacent to the site.

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. 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 buildings are unlikely to be used by significant numbers of bats for roosting. It is highly unlikely the buildings are 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 10-100 (medium).

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 likely to be 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 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. The buildings are, 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 buildings 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. **There was no indication of elevated use of the site such as would occur if this roost type were present.**

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 buildings are 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 River Ribble some distance from the site to the West. There were no potential lek sites identified in the buildings 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 buildings by bats for lekking.

8.1.1.7 Hibernation

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

There are no areas of the buildings 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 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 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 buildings and 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 buildings 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 buildings by roosting bats in or between years, although there is a possibility of a low level of opportunistic use at some times of the year. 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 buildings 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 licence 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. 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.

7. The potential of the site for bats could be enhanced by incorporating bat roosting features into the new dwelling to be constructed. Gaps along the eaves lines of the building could be created which allow access to the wall tops under the eaves. Plans have not been provided for the new dwelling, and so exact specifications cannot be given.

8. As an alternative to the above, bat boxes could be erected in trees along the access track to the North. These boxes are relatively inexpensive and can be purchased from http://www.nestbox.co.uk/Bat-Boxes/.

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 licence application may be required.**

9.2.1.2 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 licence will not be required to cover work on the buildings. 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 licence 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 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 will 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 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

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APPENDIX 1 PREVIOUS SURVEY INFORMATION

None.

APPENDIX 2 PHOTOGRAPHS

Photograph	Notes
	There are four buildings on site. These are a complex of derelict chicken sheds and are of similar construction, though in varying states of disrepair.
	The lower sections of the walls of the sheds are made from concrete block, with the upper sections constructed on timber. The walls are well sealed and do not offer any potential roosting sites.
	The buildings are under cement fibre or metal corrugate roofs. These materials are inherently unsuitable for use by bats.

	Internally there are no enclosed voids, but the roof structure is entirely exposed. They are lined with fibre board panels, some of which have detached and offer low quality potential roost sites. The degraded nature of the buildings means that conditions internally are light and draughty. No indications of use by bats were found in these areas.
	The sheds are in varying states of disrepair. The North-east shed has collapsed for much of its length, though the remaining three are in comparatively good condition.
	Old bird nests were found within the sheds, though these were all unoccupied at the time of the survey.