

# BAT AND BARN OWL SURVEY

## CRAIGSHIELD NORTHUMBERLAND



AUGUST  
2017  
FINAL

**CLIENT** Carol Baker  
**PROJECT NAME** Craigshield  
**PROJECT NUMBER** 5197

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R01	Draft	1 Aug 17		ADM	JD	MEM
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UNLESS REQUESTED OTHERWISE, THE INFORMATION BELOW, RELATING TO THE LOCAL AREA, WILL BE PROVIDED TO THE LOCAL ENVIRONMENTAL RECORDS CENTRE					
SPECIES	RECORDER	DATE	LOCATION (4 FIG. NGR)	ABUNDANCE	COMMENT
Common Pipistrelle	E3	31.7.17	NY808773	1	Roost to West of Wark
Soprano pipistrelle	E3	31.7.17	NY808773	1	Anabat id to West of Wark
Myotis	E3	31.7.17	NY808773	1	Anabat id to West of Wark

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## A. SUMMARY

E3 Ecology Ltd was commissioned by Carol Baker in July 2017 to undertake a daytime bat and barn owl risk assessment of land at Craigshield, Wark

The proposed development comprises a small two storey extension to the existing house. No demolition works are proposed. The southern wall of the new extension will extend upwards an existing wall, of the adjacent single storey room, with the western and northern walls being new build. The extension will tie into the wall of the two storey gable end of farmhouse, below roof height so will not affect the roof structure.

Consultation with MAGIC (Multi Agency Geographic Information for the Countryside) indicated that the site does not lie within a SSSI impact risk zone for this type of development, and no European Protected Species licences have been issued nearby.

Initial site inspection was undertaken on 31<sup>st</sup> July 2015 and comprised a detailed inspection of the structures on site. An Anabat Express bat detector was left outside to assess species present overnight.

The site is situated in an area dominated by upland fringe habitats, dominated by pasture but with coniferous woodland within 50m, and the Warks Burn, with associated trees and shrubs within 280m. Overall, the habitats present in the local area are of high suitability for use by foraging/commuting bats and roosts would be expected in suitable buildings, although high numbers would not be anticipated.

The building to be extended is well pointed with no potential roost sites within the two elevations that are directly affected. No evidence of roosting bats was recorded in the adjacent farmhouse loft, which has two skylights resulting in light internal conditions. It is understood that the building has been recently renovated. There are no features suitable for nesting barn owl.

Evidence of a common pipistrelle roost entrance was recorded behind the fascia boards of the single storey building that forms the southern elevation of the extension. The roost is likely to be in the wall top/between slates and sarking, at the far side of the room from the extension, and so will not be directly affected by the proposed construction. There was no evidence of bats within the shallow loft of this room.

From Anabat data there are likely to be soprano pipistrelle and Myotis (?Natterer's) roosts in the wider farm complex, with soprano social activity recorded after around 23.30hrs.

The site is concluded to support a small common pipistrelle roost of local value, however, it is not considered that this roost will be directly affected by the proposed works. The sections of buildings to be affected by the works are considered to have negligible risk of supporting roosting bats, due to their well-sealed nature. No further survey work is therefore considered necessary.

Potential impacts of the development in order of conservation significance are:

1. Disturbance or harm to a small number of bats that may be using the adjacent buildings at the time of construction.

Key mitigation measures include:

1. Two bat boxes will be erected on a south or west facing building wall in advance of the start of work to provide alternative roost sites should bats be disturbed during construction.
2. Works will be undertaken to a method statement to minimise the risk of disturbing the adjacent roost.

Enhancement will be provided by incorporating the Aga flue into the new build loft space and providing opportunities for bats to gain access to this area.

The local planning authority and Natural England are likely to require the means of delivery of the mitigation to be identified. It is recommended that mitigation and enhancement proposals are incorporated into the architect's plans.

**Before this report can be used to support a planning application it is recommended that:**

- 1. Mitigation proposed in this report is incorporated into the architect's plans that support the planning application including design details of bat access routes.**

*If you are assessing this report for a local planning authority and have any difficulties interpreting plans and figures from a scanned version of the report, E3 Ecology Ltd would be happy to email a PDF copy to you. Please contact us on 01434 230982.*



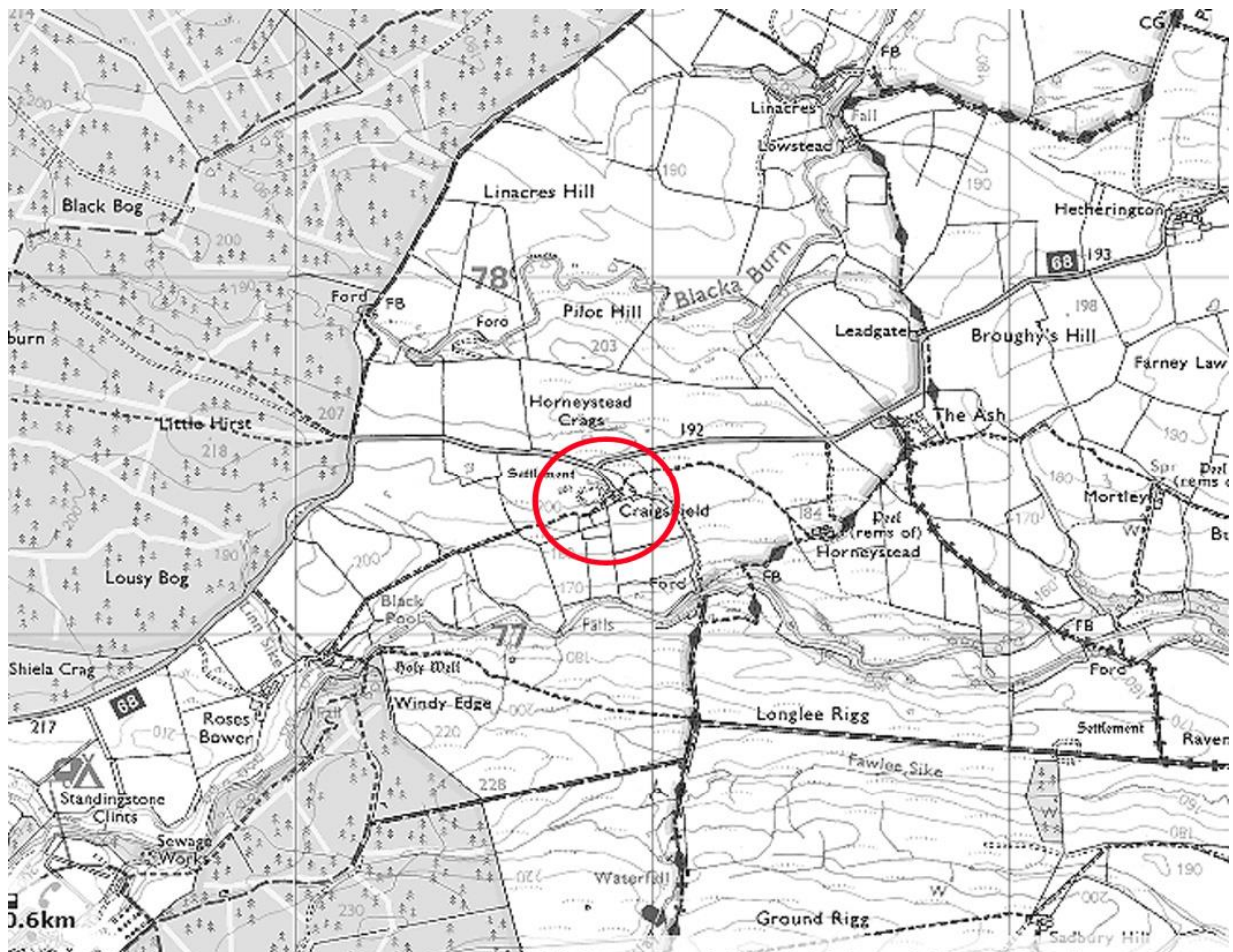
## B. INTRODUCTION

E3 Ecology Ltd was commissioned by Carol Baker in July 2017 to undertake a daytime bat risk assessment of land at Craigshield, Wark.

The purpose of this report is:

- To identify and describe all potentially significant effects on the local bat population associated with the proposed development
- To set out the mitigation measures required to ensure compliance with nature conservation legislation and to address any potentially significant effects
- To identify how mitigation measures will/could be secured
- To provide an assessment of the significance of any residual effects
- To identify appropriate enhancement measures
- To set out any requirements for post-construction monitoring

The site is located at Craigshield, Wark at an approximate central grid reference of NY808773. The site location is illustrated below in Figure 1.



**FIGURE 1: SITE LOCATION**

(OS mapping © Crown copyright and database rights 2016/2017 OS 0100039392)

The proposed development comprises a small two storey extension to the western elevation of the existing house. No demolition works are proposed. The roof line of the extension will be lower than the existing house, with the southern wall being formed from what is currently the

external wall of an adjacent single storey room capped with a water table, which will be extended upwards to accommodate two storeys.



**FIGURE 2: DEVELOPMENT PROPOSALS**

Development proposals are likely to involve:

- Keying in of new build to existing stonework
- Raising the southern wall.
- New build.

There will be no direct impacts on the existing roofs or loft spaces.



## C. PLANNING POLICY AND LEGISLATIVE CONTEXT

### C.1 NATIONAL PLANNING POLICY

Table 1 details the key paragraphs from the National Planning Policy Framework (NPPF)<sup>1</sup> relating to the natural environment:

TABLE 1: NATIONAL PLANNING POLICY FRAMEWORK: NATURAL ENVIRONMENT	
Statement	Paragraph
The planning system should contribute to and enhance the natural and local environment by: <ul style="list-style-type: none"> <li>o Recognising the wider benefits of ecosystem services;</li> <li>o Minimising impacts on biodiversity and providing net gains in biodiversity where possible</li> </ul>	109
Planning policies and decisions should encourage the effective use of land by re-using land that has been previously developed (brownfield land), provided that it is not of high environmental value.	111
Local planning authorities should set criteria based policies against which proposals for any development on or affecting protected wildlife sites will be judged. Distinctions should be made between the hierarchy of international, national and locally designated sites so that protection is commensurate with their status and gives appropriate weight to their importance and the contribution that they make to wider ecological networks	113
To minimise impacts on biodiversity, planning policies should: <ul style="list-style-type: none"> <li>o Promote the preservation, restoration and re-creation of priority habitats ecological networks and the protection and recovery of priority species populations, linked to national and local targets</li> </ul>	117
When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principals: <ul style="list-style-type: none"> <li>o If significant harm resulting from a development cannot be avoided, adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;</li> <li>o Development proposals where the primary objective is to conserve or enhance biodiversity should be permitted;</li> <li>o Opportunities to incorporate biodiversity in and around developments should be encouraged;</li> <li>o Planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees, found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss</li> </ul>	118
By encouraging good design, planning policies and decisions should limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation	125

Section 40 of the Natural Environment and Rural Communities Act 2006, places a duty on all public authorities in England and Wales to have regard, in the exercise of their functions, to the purpose of conserving biodiversity.

Planning Practice Guidance<sup>2</sup> states:

- *'The National Planning Policy Framework is clear that pursuing sustainable development includes moving from a net loss of biodiversity to achieving net gains for nature, and that a core principle for planning is that it should contribute to conserving and enhancing the natural environment and reducing pollution' (para. 007).*
- *'Information on biodiversity impacts and opportunities should inform all stages of development .... An ecological survey will be necessary in advance of a planning application if the type and location of development are such that the impact on biodiversity may be significant and existing information is lacking or inadequate' (para. 016).*

<sup>1</sup> National Planning Policy Framework (March 2012), Department for Communities and Local Government,

<sup>2</sup> Planning Practice Guidance: Natural Environment ([www.planningguidance.communities.gov](http://www.planningguidance.communities.gov))

- *'Where an Environmental Impact Assessment is not needed it might still be appropriate to undertake an ecological survey, for example, where protected species may be present' (para. 016).*
- *'Local planning authorities should only require ecological surveys where clearly justified, for example if they consider there is a reasonable likelihood of a protected species being present and affected by development. Assessments should be proportionate to the nature and scale of development proposed and the likely impact on biodiversity' (para. 016).*
- *'Biodiversity enhancement in and around development should be led by a local understanding of ecological networks, and should seek to include:*
  - *habitat restoration, re-creation and expansion;*
  - *improved links between existing sites;*
  - *buffering of existing important sites;*
  - *new biodiversity features within development; and*
  - *securing management for long term enhancement' (para. 017).*

## **C.2 RELEVANT LEGISLATION**

Nesting barn owl are protected from disturbance as well as from harm to the nest or eggs.

Within England all bat species are specially protected under the Conservation of Habitats and Species Regulations (2010).

As a result there is a requirement to consult with Natural England before undertaking any works that may disturb bats or their roost, and under the Conservation of Habitats and Species Regulations it is illegal to.

- Deliberately kill, injure or capture bats.
- Deliberately obstruct access to a bat roost.
- Damage or destroy a bat roost.
- Deliberately disturb bats; in particular any disturbance which is likely to impair their ability:
  - (i) to survive, to breed or reproduce, or to rear or nurture their young; or
  - (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
  - (iii) to affect significantly the local distribution or abundance of the species to which they belong.

Under the Wildlife and Countryside Act (1981) the above offence of disturbing bats includes low level disturbance and as such under this act it is also an offence to:

- Intentionally or recklessly disturb a bat while it is occupying a roost.
- Intentionally or recklessly obstruct access to a roost.

Under the above legal protection, only the offences under the Conservation of Habitats and Species Regulations (2010) are strict liability offences; the remaining offences, under the Wildlife and Countryside Act (1981), are offences only where they are carried out "intentionally or recklessly".

Under the Countryside and Rights of Way Act 2000 (CROW Act) the offence in section 9(4) of the Wildlife and Countryside Act 1981 of disturbing bats is extended to cover reckless damage or disturbance.

The Hedgerow Regulations 1997 provide for the conservation of important hedgerows and their constituent trees. The presence of a protected species such as bats is a relevant consideration when assessing whether a hedgerow is important and may influence a local planning authority's decision on whether to approve removal of such hedges.

### **C.3 PRIORITY SPECIES**

Although not afforded any legal protection, national priority species (species of principal importance, as listed in Section 41 of the NERC Act (2006)), and local and regional priority species, as detailed within the relevant biodiversity action plans, are material considerations in the planning process and as such have been assessed accordingly within this report.

The following bat species are listed as national priority species: Barbastelle bat, Bechstein's bat, noctule, soprano pipistrelle, brown long-eared bat, greater horseshoe bat and lesser horseshoe bat. 'Bats' as a species group is also listed on the Northumberland biodiversity action plan for this site.

## **D. METHODOLOGY**

### **D.1 SCOPE OF STUDY**

The scope of the study, in terms of the survey area and the desk study area, is based on professional judgement. The scope has been determined based on the site's characteristics, the nature of the surrounding area, the development proposed at the time of reporting and the likely associated zone of influence.

For this site the survey area comprised the red line boundary as defined within Figure 3 with, in addition, connected buildings likely to be affected by the works.

The desk study included an assessment of land-use in the surrounding area and a data search covering a 2km buffer zone (see below for further detail).

The level of survey effort employed at the site has taken account of the recommendations within the Bat Conservation Trust Good Practice Survey Guidelines<sup>3</sup>.

Figure 3 illustrates the site boundary whilst, to provide context, Figure 4 illustrates the broad habitats present on site and within an approximate 500m buffer zone.

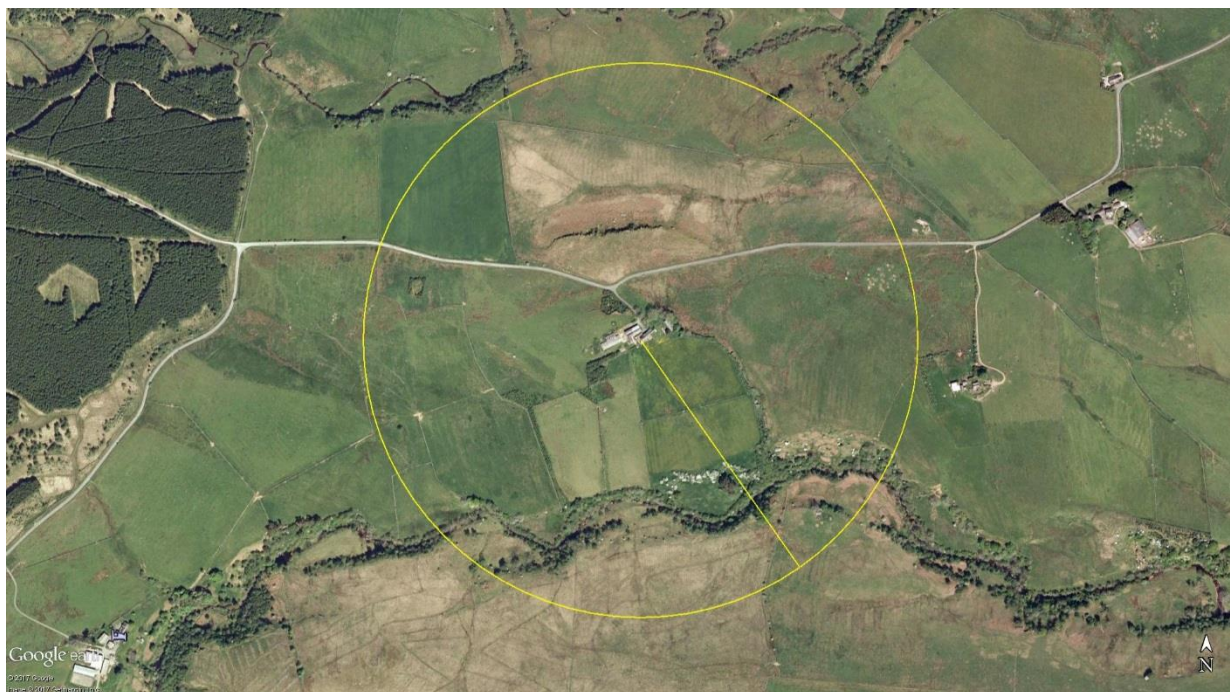
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<sup>3</sup> Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3<sup>rd</sup> Edition). Bat Conservation Trust





**FIGURE 3: SITE BOUNDARY**  
(Reproduced under licence from Google Earth Pro.)



**FIGURE 4: SITE AND SETTING**  
(Reproduced under licence from Google Earth Pro.)

## D.2 DESK STUDY

Initially, the site was assessed from aerial photographs and 1:25,000 Ordnance Survey maps. Following this a search was made of the Multi Agency Geographic Information for the Countryside (MAGIC) website<sup>4</sup> for all statutorily protected sites for nature conservation within 2km of the survey area that may be affected by the proposals. Northumberland Bat Group were consulted for local records.

## D.3 PRELIMINARY FIELD STUDY METHODOLOGY

### D.3.1 PHASE 1 HABITAT SURVEY

The potential suitability of the habitats within the survey area in relation to commuting and foraging bats was classified as negligible, low, moderate or high, based on guidelines provided by the Bat Conservation Trust<sup>5</sup> and detailed within Table 2.

<b>TABLE 2: GUIDELINES FOR ASSESSING THE POTENTIAL SUITABILITY OF PROPOSED DEVELOPMENT SITES FOR BATS, BASED ON PRESENCE OF HABITAT FEATURES WITHIN THE LANDSCAPE.</b> (TO BE APPLIED USING PROFESSIONAL JUDGEMENT, TABLE 4.1 BAT SURVEY GUIDELINES)	
<b>Suitability</b>	<b>Commuting and foraging habitats</b>
Negligible	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat.  Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.  Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge.  High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland tree lined watercourses and grazed parkland.  Site is close to and connected to known roosts.

### D.3.2 DAYTIME BAT RISK ASSESSMENT (STRUCTURES)

A daytime assessment was made of all structures affected by the proposed development, in order to evaluate their potential for supporting bat roosts, and, where present, to record signs of use by bats.

Structures were inspected both externally and internally. Binoculars and extendable ladders were used to assist with the inspection for droppings and other field signs.

Where present, soffits, purlins and ridge boards were searched thoroughly, together with the walls and floor under potential roost sites and any mortise joints, particularly in the gable walls.

<sup>4</sup> Multi Agency Geographic Information for the Countryside ([www.magic.gov.uk](http://www.magic.gov.uk))

<sup>5</sup> Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3<sup>rd</sup> Edition). Bat Conservation Trust

Wherever practicable, roof spaces and attic areas were surveyed for signs of droppings, which persist all year in dry conditions, food debris, entry points and bats themselves. Where bats were present the survey was adapted to avoid disturbance, with identification being confirmed either by recording bats at emergence and analysing the calls.

Externally, the buildings were examined for potential roost access points indicated by clean crevices, urine marks, polished wood or stonework and droppings. Particular attention was given to sheltered areas under the eaves of buildings, window ledges and towards the tops of windows where droppings are less likely to have been washed off.

Structures were categorised as having negligible, low, moderate or high suitability to be used by roosting bats, based on guidelines provided by the Bat Conservation Trust<sup>6</sup> and detailed within Table 3.

<b>TABLE 3: GUIDELINES FOR ASSESSING THE POTENTIAL SUITABILITY OF PROPOSED DEVELOPMENT SITES FOR BATS, BASED ON PRESENCE OF ROOSTING HABITAT FEATURES (STRUCTURES)</b> <i>(TO BE APPLIED USING PROFESSIONAL JUDGEMENT, TABLE 4.1 BAT SURVEY GUIDELINES)</i>	
<b>Suitability</b>	<b>Roosting Habitats</b>
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure with one or more potential roost site that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

The bat risk assessment of the structures was undertaken on 31<sup>st</sup> July 2017.

Note that comments on the state of the structures within the site relate solely to their potential use by bats and must not be taken as a professional assessment of the structural integrity or safety of the structures. For example, descriptions of walls and roofs being in ‘good’ or ‘poor condition’ relate to likely provision of roost sites for bats, potential access routes to roost sites, and likely persistence of field signs such as droppings and feeding remains, which will not persist in exposed conditions. Maternity roosts are less likely to be present in cool, exposed, damp and draughty locations which may develop in a building in poor condition.

### D.3.3 DAYTIME GROUND BASED BAT RISK ASSESSMENT (TREES)

No trees will be affected by the proposals.

### D.3.4 PRELIMINARY SURVEY - EQUIPMENT

- High power LED torch.
- Zeiss 8x30 binoculars.
- Digital camera
- MP3 recorder
- Anabat detector

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<sup>6</sup> Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3<sup>rd</sup> Edition). Bat Conservation Trust



### D.3.5 PRELIMINARY SURVEY - ENVIRONMENTAL CONDITIONS

DATE	TEMPERATURE	CLOUD COVER	PRECIPITATION	WIND CONDITIONS
31.7.17	18	20%	0	1SW

### D.3.6 PRELIMINARY SURVEY - CONSTRAINTS

Lofts were assessed from the loft hatches as deep rockwool insulation prevented detection of joists. The insulation did provide good conditions for the detection of droppings.

## D.4 DETAILED SURVEY METHODOLOGY

### D.4.1 DUSK EMERGENCE/DAWN SWARMING ACTIVITY SURVEY

As the proposed development is a new build extension and there are no potential roosting opportunities in the sections of existing walls that will be affected no emergence survey work has been undertaken.

### D.4.2 REMOTE MONITORING

Remote monitoring was carried out using an Anabat Express detector with the module set up to record all activity from dusk till dawn. This was undertaken between 31<sup>st</sup> July and 1<sup>st</sup> August 2017.

### D.4.3 DATA ANALYSIS

All bat calls were analysed using Anabook as appropriate, with calls identified to species where possible, referencing call parameters as detailed within Russ (2012)<sup>7</sup> and Middleton et al (2014)<sup>8</sup>.

Species from the *Myotis* genus of bats produce frequency modulated calls with overlapping call parameters and cannot be reliably distinguished to species level on call alone. As such, within this report, *Myotis* calls are identified as '*Myotis ?species*', with the most likely species identified through an assessment of a combination of call slope, loudness, frequency range, habitat and, where the bat was observed in flight, flight characteristics. Where insufficient information is available, calls are simply identified as '*Myotis sp.*'.

Bats from the pipistrelle genus also produce calls with overlapping parameters and the call criteria used to differentiate between species of this genus, based on peak frequencies, are detailed within Table 5.

Species	Call Peak Frequency Range (KHz)
Common pipistrelle	>42 and <49
Soprano pipistrelle	≥51
Nathusius' pipistrelle	<40
Common or soprano pipistrelle ('50KHz pip')	≥49 and <51
Common or Nathusius' pipistrelle ('40KHz pip')	≥40 and ≤42

Similarly, bats of the *Nyctalus* genus produce calls with overlapping call parameters. Where calls are obtained in an open environment, the two *Nyctalus* species found in this region can be differentiated and calls will be identified as noctule or Leisler's bat. Where there is doubt, calls are noted as *Nyctalus sp.*

<sup>7</sup> Russ, J. (2012) British Bat Calls: A Guide to Species Identification. Pelagic Publishing

<sup>8</sup> Middleton, N., Froud, A. and French, K. (2014) Social Calls of the Bats of Britain and Ireland. Pelagic Publishing

Within this report, for all species, if the species name is given without qualification, the record was of good quality and fell within recognised parameters with no potential overlap with other species present in the region. If there is a degree of uncertainty this is indicated by a question mark, e.g. ?brown long-eared. If identification to species is not practicable, then where possible calls are identified to genus.

## D.5 PERSONNEL

The table below details the personnel who undertook the survey work.

Name	Position	Professional Qualifications	Natural England Survey Licence Numbers
Dr Tony Martin	Director	BSc PhD MLI MCIEEM	2015-10138 CLS-CLS (Bats)

Further details of experience and qualifications are available at [www.e3ecology.co.uk](http://www.e3ecology.co.uk).

## D.6 ASSESSMENT METHODOLOGY

The relative value of the ecological receptors (habitats, species and designated sites) was assessed using a geographical frame of reference. For designated sites this is generally a straightforward process with the assigned designation generally being indicative of a particular value, e.g. Sites of Special Scientific Interest are designated under national legislation and are therefore generally considered to be receptors of national value. The assignment of value to non-designated receptors is less straightforward and as recognised by the Guidelines for Ecological Impact Assessment produced by the Chartered Institute of Ecology and Environmental Management<sup>9</sup>, is a complex and subjective process and requires the application of professional judgement.

When assessing the value of species and habitats, relevant documents and legislation are considered including the lists of species and habitat of principal importance annexed to the NERC Act (2006) and those provided within relevant local Biodiversity Action Plans. Data provided through consultation is also considered. These data sources can provide context at a local, regional and national scale.

The table below provides examples of receptors of value at different geographical scales.

Level of Value	Examples
<b>International</b>	An internationally designated site or candidate site.
	A site meeting criteria for international designation.
	The site is of functional importance* to a species population with internationally important numbers (i.e. >1% of the biogeographic population)
<b>National</b>	A nationally designated site.
	The site is of functional importance* to a species population with nationally important numbers (i.e. >1% of the national population)
<b>Regional</b>	The site is of functional importance* to a species population with regionally important numbers (i.e. >1% of the regional population)
<b>County</b>	A Local Wildlife Site (LWS) or equivalent, designated at a County level
	The site is of functional importance* to a species population of county value (i.e. >1% of the county population)

<sup>9</sup> Chartered Institute for Ecology and Environmental Management (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland - Terrestrial, Freshwater and Coastal

<b>TABLE 7: ECOLOGICAL RECEPTOR VALUATION</b>	
<b>Level of Value</b>	<b>Examples</b>
<b>District</b>	A Local Wildlife Site (LWS) or equivalent, designated at a District level The site is of functional importance* to a species population of district value (i.e. >1% of the district population)
<b>Parish</b>	A species population considered to appreciably enrich the nature conservation resource within the context of the parish. Local Nature Reserves
<b>Local</b>	A species population that contributes to local biodiversity but are not exceptional in the context of the parish.
<b>Low</b>	Habitats that are unexceptional and common to the local area.

*\* Functional importance defined as 'a feature which, based on professional judgement, is of importance to the day to day functioning of the population, the loss of which would have a detectable adverse effect on that population'*

Higher quality sites for bats are likely to have a good number of bats and range of species, particularly species that are scarcer in the region and require higher habitat quality such as whiskered/Brandt's, Natterer's, brown long-eared bat and Nathusius. Sites with over five species regularly recorded will generally be of above average quality.

## E. RESULTS

### E.1 DESKTOP STUDY

#### E.1.1 PRE-EXISTING INFORMATION

##### **ORDNANCE SURVEY MAPPING AND AERIAL PHOTOGRAPHY**

Figures 1 (B) and 3 (D1) show that the general land use in the surrounding area is upland pasture with some plantation woodlands.

##### **MULTI AGENCY GEOGRAPHIC INFORMATION FOR THE COUNTRYSIDE WEBSITE<sup>10</sup>**

The site does not lie within any SSSI impact risk zone for this type and scale of development.

#### E.1.2 CONSULTATION

##### **LOCAL BAT GROUP**

A consultation response is awaited.

### E.2 DAYTIME RISK ASSESSMENT

#### E.2.1 HABITATS

The setting is dominated by upland pasture, with Wark Forest plantation coniferous woodland 700m to the west. There is coniferous woodland within 50m, and the Warks Burn, with associated trees and shrubs 280m to the south. Overall, the habitats present in the local area are of high suitability for use by foraging/commuting bats but high numbers would not be anticipated.

##### Buildings

Building descriptions are provided below and the location of each structure is illustrated within **Error! Reference source not found.**5. Building features which have the potential to support roosting bats are underlined, whilst, where recorded, field signs that confirm bat use are in bold.

House Loft – no safe access as rockwool covers joists, surveyed from loft hatch

- Approximately 1.5m to ridge
- Well pointed gable walls with no evidence of droppings
- Timber roof supports with traditional 1f sarking
- Rockwool insulation, no droppings seen
- Skylights resulting in light internal conditions
- Cobwebs along ridge
- Gable adjacent to extension well pointed with no obvious access routes into stonework.
- Aga flue external so no loft heating.



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<sup>10</sup> Multi Agency Geographic Information for the Countryside (MAGIC) [www.magic.gov.uk](http://www.magic.gov.uk)

### House, external

- Western house elevation has well pointed stone work
- Well pointed water tables
- Windows and doors tightly sealed.
- No crevices associated with Aga flue
- Negligible roost risk



### Southern building – no safe access so surveyed from loft hatch

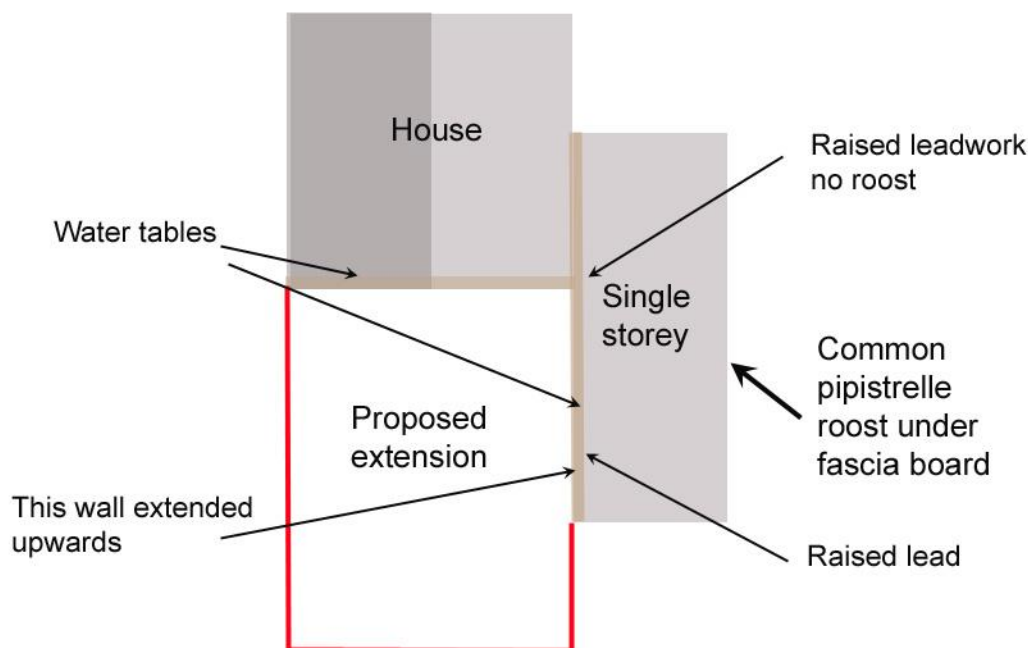
- Breeze block internal walls
- Timber monopitch roof with breathable sarking
- Shallow roof void approximately 800mm high
- Kingspan insulation beneath slates
- Rockwool insulation above ceiling, no droppings
- Generally very low risk of void roosting bats
- Residual risk of roost between slates and sarking.



### External

- Single storey, well pointed wall
- Stone water table, well-sealed
- Lead flashing, raised in places, no evidence of roosts.
- Lead flashing on mono-pitch roof raised in one section
- **Bat roost under fascia board with pipistrelle type droppings (3no)**





**FIGURE 5: BUILDING LOCATIONS**  
 (Reproduced under licence from Google Earth Pro.)

### E.3 OVERVIEW OF SITE SUITABILITY

TABLE 8: OVERVIEW OF SITE SUITABILITY FOR BATS				
HABITATS AND SETTING <sup>11</sup>				
	NEGLIGIBLE	LOW	MODERATE	HIGH
<b>HABITATS AND COVER WITHIN 200M</b>	City Centre	Open, exposed arable, amenity grass or pasture	Hedges and trees linking site to wider countryside	Excellent cover with mature trees and/or good hedges
<b>HABITATS WITHIN 1KM</b>	City Centre	Little tree cover, few hedges, arable dominated	Semi-natural habitats e.g. trees, hedgerows	Good network of woods, wetland and hedges
<b>ALTERNATIVE ROOSTS WITHIN 1KM</b>	City centre	Numerous alternative roost sites of a similar nature	A number of similar buildings in the local area	Few alternative buildings and site of good quality for roosts
<b>SETTING</b>	Inner city	Urban with little green space	Upland fringe	Rural Lowland with woodland and trees.
<b>DISTANCE TO WATER/ MARSH</b>	>1km	500m-1000m	200m-500m	<200m
<b>DISTANCE TO WOODLAND/ SCRUB</b>	>1km	500m-1000m	200m-500m	<200m

<sup>11</sup> Building and habitat risk assessment technique audited in a research project with York University which compared the risk assessment scoring with the results of detailed field assessment for over 100 sites. Statistically significant associations were found between habitat setting and building features and the presence of absence of different bat species. For example habitat connections and nearby woodland were significant for brown long-eared bats and the presence of species-rich grassland is important for many species.



<b>TABLE 8: OVERVIEW OF SITE SUITABILITY FOR BATS</b>				
<b>DISTANCE TO SPECIES-RICH GRASSLAND</b>	>1km	500m-1000m	200m-500m	<200m
<b>COMMUTING ROUTES</b>	Isolated by development, major roads, large scale agriculture	No potential flyways linking site to wider countryside	Some potential commuting routes to and from site	Site is well connected to surrounding area with multiple flyways
<b>BUILDINGS<sup>2</sup></b>				
	MINIMAL	LOW	MEDIUM	HIGH
<b>AGE (APPROX.)</b>	Modern	Post 1940's	1900-1940	Pre 20 <sup>th</sup> C
<b>BUILDING/ COMPLEX TYPE</b>	Industrial complex of modern design	Single, small building	Several buildings, large old single structure	Traditional farm buildings, country house, hospital
<b>BUILDING - STOREYS</b>	N/A	Single storey	Multiple storeys	Multiple storeys with large roof voids
<b>STONE/BRICK WORK</b>	No detectable crevices	Well pointed	Some cracks and crevices	Poor condition, many crevices, thick walls
<b>FRAMEWORK – TIMBERS/STEEL</b>	Modern metal frame with sheet cladding	Timber purlins, sheet asbestos	Timbers kingpost or similar	Large timbers traditional joints
<b>ROOF VOID</b>	Fully sealed or flat roof	Small, cluttered void	Medium, relatively open	Large, open, interconnected
<b>ROOF COVERING</b>	Modern sheet materials and tightly sealed	Good condition	Some potential access routes, slates, tiles	Uneven with gaps, not too open, stone slates
<b>ADDITIONAL FEATURES</b>	Very well maintained and tightly sealed	No features with potential access	Some features with potential access	Hanging tiles, cladding, barge boards, soffits with access gaps
<b>EXTERNAL LIGHTING</b>	Extensive security lights covering much of the site	Widespread areas above 2 lux at night	Intermittent lights of low intensity	Minimal
<b>BUILDING USE</b>	Very noisy, dusty	Regular use	Intermittent use	Disused

Given the buildings and their setting some roosting bats would be anticipated, but large numbers are unlikely. As the extension is new build and linking in to well pointed walls, the opportunities for affecting roosting bats are limited.

### E.3.1 REMOTE MONITORING

Remote monitoring with an Anabat detector located outside the fascia board roost recorded common pipistrelle bats just after dusk and close to sunset, indicating that they are using the roost.

Early/late activity was also recorded for soprano pipistrelle and *Myotis* bats (?Natterer's) that suggests that roosts of these species are likely to be also present in the wider range of buildings.

Possible brown long-eared bat calls were recorded during the night, with soprano pipistrelle social calls after 23.30.

### E.4 ADDITIONAL SPECIES GROUPS

We understand that barn owl are seen locally, but there are no potential nesting opportunities within the application site.

## **F. SITE ASSESSMENT**

### **F.1 ASSESSMENT OF SURVEY FINDINGS**

There are no roosting opportunities within the footprint of the proposed development. A small common pipistrelle roost is present in the eaves of the adjacent single storey building, however, it is not considered that the proposals will directly impact on this roost.

### **F.2 POPULATION SIZE CLASS ASSESSMENT**

From the field survey, it is concluded that the single storey building is used by 1-6 common pipistrelle bats, but it is not considered that the section which will be affected by works is suitable to support roosting bats.

### **F.3 LIMITATIONS AND CONSTRAINTS**

High levels of insulation and unsafe floors meant that loft areas of the farmhouse and single storey element were inspected from loft hatches.

## **G. IMPACT ASSESSMENT**

### **G.1 DIRECT DEVELOPMENT IMPACTS**

No adverse impacts on bats are anticipated. There is a risk of disturbance to the fascia roost, and this risk will be minimised by working to a method statement. There is a section of raised leadwork with a low residual risk of being used by bats.

### **G.2 LONG TERM DIRECT IMPACTS**

No long term direct impacts are anticipated

### **G.3 INDIRECT IMPACTS ON LOCAL POPULATIONS**

There is a risk of disturbance to a small common pipistrelle roost during construction works.

## **H. RECOMMENDATIONS**

### **H.1 FURTHER SURVEY**

For this site, no activity surveys are considered necessary. The BCT guidelines state that if a structure is classified as having low suitability for bats an ecologist should make a professional judgement on how to proceed based on all of the evidence available. If sufficient areas of a structure have been inspected and no evidence found (and is unlikely to have been removed by weather or cleaning or be hidden), then further surveys may not be appropriate. This is considered to be the case for this site.

### **H.2 AVOIDANCE AND MITIGATION STRATEGY**

#### **H.2.1 SITE DESIGN**

- External lighting that may reduce bat use of the buildings will be avoided. High intensity security lights will be avoided as far as practical, and any lighting in areas identified as being important for bats will be low level (2m) and low lumin. Light spillage to areas used by foraging or commuting bats should be less than 2 lux. No lighting will be installed along the flyways between the roosts and adjacent trees, woodland and foraging areas. Where security lights are required, these will be of minimum practicable brightness, be set on a short timer and will be motion sensitive only to larger objects.

## H.2.2 TIMING OF WORKS

- 2 bat boxes (as detailed below) will be provided on site prior to works commencing to provide roosting opportunities during the works.

## H.2.3 WORKING METHODS AND BEST PRACTICE

- A copy of the method statement will be provided to contractors prior to the start of works. If bats are found during works, works will stop in that area and the ecological consultant will be contacted immediately. If it is necessary to move the bats for their safety, this will be undertaken by a licensed bat handler.
- Extension upwards of the southern wall will be undertaken without disturbance of the adjacent roof structure.

The following measures should be included as general good working practice:

- Timber treatments that are toxic to mammals will be avoided. If required, timber treatment will be carried out in the spring or autumn. Both pre-treated timbers and timber treatments will use chemicals classed as safe for use where bats may be present (see [http://www.jncc.gov.uk/pdf/batwork\\_manualpt4.pdf](http://www.jncc.gov.uk/pdf/batwork_manualpt4.pdf)).

## H.3 **ENHANCEMENT STRATEGY**

The following enhancement strategy is proposed:

### H.3.1.1 *BAT BOXES*

In advance of the start of works, 2 crevice roost bat boxes will be erected in adjacent buildings/trees, within the site owner's landholding, to provide alternative roost sites.

### H.3.1.2 *CREVICE ROOST SITES*

Access to the underside of the ridge tiles will be provided in 2 locations through 20mm diameter gaps in the pointing on the north facing side away from the prevailing wind. Access between ridge tiles will be provided through gaps in the mortar joints. Areas accessible to bats will be lined with traditional 1f sarking above any breathable membranes to prevent harm to bats.

### H.3.1.3 *BAT VOID CREATION*

An access route into the new loft void will be provided at the eaves on the northern elevation, protected from the prevailing winds, with rough sawn timbers providing access above any roof insulation. The new loft will benefit from heating from the Aga flue, increasing opportunities for bats.

Traditional type 1F bitumastic roofing felt or eaves felt will be used in all areas where bats may come into contact with the sarking. It will be used to line the ridge of the open area of roof. Insulation will be provided between the loft void and living areas below.

## **I. CONCLUSIONS**

With the recommended mitigation and enhancement measures detailed above, proposals can proceed with no significant adverse effect on bats, Proposals provide an opportunity for ecological benefit through provision of new roosts, contributing to local and national conservation targets.

## **APPENDIX 1. STATUTORILY AND NON- STATUTORILY DESIGNATED SITES**

### **STATUTORILY DESIGNATED SITES**

#### Ramsar Sites

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. The Convention recognizes wetlands as important ecosystems and includes a range of wetland types from marsh to both fresh and salt water habitats. The wetlands can also include additional areas adjacent to the main water-bodies such as river banks or coastal areas where appropriate.

#### Special Protection Areas (SPAs)

SPAs are classified by the UK Government under the EC Birds Directive and comprise areas which are important for both rare and migratory birds.

#### Special Areas of Conservation

SACs are designated under the EC Habitats Directive and are areas which have been identified as best representing the range and variety of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the Conservation of Habitats and Species Regulations 2010 (as amended) unless they are offshore.

#### Sites of Special Scientific Interest

SSSIs are designated as sites which are examples of important flora, fauna, or geological or physiographical features. They are notified under the Wildlife and Countryside Act 1981 with improved provisions introduced by the Countryside and Rights of Way Act 2000. They are often components of larger SACs or SPAs.

#### National Nature Reserves (NNRs)

NNRs are designated by Natural England under the National Parks and Access to the Countryside Act 1949 and the Wildlife and Countryside Act 1981 and support important ecosystems which are managed for conservation. They may also provide important opportunities for recreation and scientific study.

#### Country Parks

Country Parks are statutorily designated and managed by local authorities in England and Wales under the Countryside Act 1968. They do not necessarily have any nature conservation importance, but provide opportunities for recreation and leisure near urban areas.

### **NON-STATUTORILY DESIGNATED SITES**

#### Local Nature Reserves (LNRs)

LNRs are designated under the National Parks and Access to the Countryside Act 1949 by local authorities in consultation with Natural England. They are managed for nature conservation and used as a recreational and educational resource.

#### Non-Governmental Organisation Property

These are sites of biodiversity importance which are managed as reserves by a range of NGOs. Examples include sites owned by the RSPB, the Woodland Trust and the Wildlife Trusts

#### Local Wildlife Sites (LWSs)

These are sites defined within the local plans under the Town and Country Planning system and are material considerations of any planning application determination. They are designated by the local authority although criteria can vary between authorities.

## APPENDIX 2. BAT ECOLOGY

### BAT LIFECYCLE

Bat survey timings are based on the lifecycle of bats which varies through the calendar year. The table below illustrates recommended survey timings and how they relate to the bat lifecycle:

BAT LIFECYCLE AS IT RELATES TO SURVEY TIMING <sup>12</sup>												
SURVEY TYPE	J	F	M	A	M	J	J	A	S	O	N	D
Roost Inspection												
Mating/Swarming Survey												
Hibernation Survey												
Tree survey from the ground												
Tree roost activity survey												
Building roost activity survey												
Dark grey are optimal timings, light grey suboptimal.												
BAT ROOST USE THROUGH THE YEAR												
Day Roost												
Night Roost												
Feeding Roost												
Transitional/Occasional Roost												
Swarming Site												
Mating Site												
Maternity Roost												
Hibernation Roost												
Satellite Roost												

<sup>12</sup> Based on information provided within Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3<sup>rd</sup> Edition). Bat Conservation Trust

## BAT ROOST TYPES

Bat Roost Types	
Roost Type	Definition
Day Roost	A place where individual bats or small groups of males, rest or shelter in the day but are rarely found by night in the summer.
Night Roost	A place where bats rest or shelter in the night but are rarely found in the day. May be used by a single individual on occasion or could be used regularly by the whole colony.
Feeding Roost	A place where individual bats or a few individuals rest or feed during the night but are rarely present by day.
Transitional/Occasional Roost	Used by a few individuals or occasionally small groups for generally short periods of time on waking from hibernation or in the period prior to hibernation.
Swarming Site	Where large numbers of males and females gather during late summer to autumn. Appear to be important mating sites.
Mating Site	Sites where mating takes place from late summer and can continue through winter.
Maternity Roost	Where female bats give birth and raise their young to independence. Females typically give birth to a single pup per year, therefore these roosts are critical to the long-term survival of a colony. Disturbance of maternity roosts can lead to abandonment and death of young.
Hibernation Roost	Where bats may be found individually or together during winter. They have a constant cool temperature and high humidity. Bats are particularly vulnerable to disturbance during the hibernation period as, once roused, they may be unable to replace energy lost due to a lack of sufficient available insect prey at this time.
Satellite Roost	An alternative roost found in close proximity to the main nursery colony used by a few individual breeding females to small groups of breeding females throughout the breeding season.

## SPECIES SPECIFIC ECOLOGY

Pipistrelle maternity colonies generally consist of 25 to 100 individuals, but colonies numbering up to 1000 are not uncommon<sup>13</sup>. Adult females often form large maternity roosts, occupied between May and August, and frequently number around 300 individuals. Males are often solitary or in small groups during the summer, later congregating with the females at winter hibernation roosts<sup>14</sup>.

Maternity colonies of brown long-eared bats are generally small, consisting of 10 to 20 adults<sup>15,16</sup> (although numbers are likely to be underestimated, due to presence in inaccessible areas of the roost). In exceptional circumstances, colonies can reach 200+ bats.

Natterer's bats roost within crevices and cavities, typically within hollow trees, old buildings, caves and tunnels<sup>17</sup>. Maternity colonies comprising up to 200 adult females can be found in buildings during the summer months while bachelor roosts comprising up to 28 males have been recorded during the summer months in Scotland<sup>18</sup>. Maternity roosts are not exclusively female, with both adult and immature males comprising up to 25% of the colony. Male only colonies have been found with up to 30 bats<sup>19</sup>. Foraging individuals will perch during the night at roosts near to foraging areas, not used as day roosts. Mostly these roosts are trees or shrubs but barns will also be used<sup>20</sup>.

<sup>13</sup> Roberts, G.M. & Hutson, A.M. 2000. *Pipistrelle*. British Bats No. 6. The Bat Conservation Trust, London

<sup>14</sup> Corbet, G.B & Southern, H.N., 1964. The handbook of British Mammals).

<sup>15</sup> Speakman, J. R. *et al.*, 1991. Minimum summer populations and densities of bats in NE Scotland, near the northern borders of their distributions. *J. Appl. Ecol.*,225: 327-345

<sup>16</sup> Entwistle, A.C., 1994. Roost ecology of the brown long-eared bat *Plecotus auritus* in north-east Scotland. Unpublished PhD thesis, University of Aberdeen, UK

<sup>17</sup> Stebbings, R.E. 1991. Natterer's bat *Myotis nattereri*. In The handbook of British Mammals. 3<sup>rd</sup> Edition Corbet, G.B. & Harris, S. (Eds) Oxford: Blackwell Scientific.

<sup>18</sup> Swift, S. M. 1997 Roosting and foraging behaviour of Natterer's bats (*Myotis Nattereri*) close to the northern border of their distribution. *J. Zool. (Lond)* **242**: 375-384.

<sup>19</sup> Altringham, J.D. 2003. British Bats. The New Naturalist. Pub. Harper Collins.

<sup>20</sup> Smith, P.G. & Racey, P.A. 2005. The itinerant Natterer: physical and thermal characteristics of summer roosts of *Myotis nattereri* (Mammalia: Chiroptera) *J. Zool. Lond.* 266: 171-180.



Whiskered bats roost in trees and buildings. Nursery roosts can number over 100 bats, and are almost exclusively female bats. This species hibernates singly in caves, hanging on the open wall or in crevices<sup>19</sup>.

Brandt's bat is thought to have similar roosting behaviour and foraging ecology to the whiskered bat, however, further research is needed to clarify this<sup>19</sup>.

A third small *Myotis* species, the Alcathe's bat has recently been confirmed within the UK.

### APPENDIX 3. BATS AND DEVELOPMENT

A list of development types likely to affect bats where they impact on particular features is provided within the table below.

PLANNING AND DEVELOPMENT TRIGGER LIST FOR BAT SURVEYS <sup>21</sup>	
NATURE OF WORK	TYPE OF BUILDING OR FEATURE
<b>Conversion, modification, demolition or removal of buildings (including hotels, schools, hospitals, churches, commercial premises and derelict buildings)</b>	Agricultural buildings e.g. farmhouses, barns and outbuildings) of traditional brick or stone construction and/or with exposed wooden beams
	Buildings with weather boarding and/or hanging tiles that are within 200m of woodland and/or water
	Pre-1960 detached buildings and structures within 200m of woodland and/or water
	Pre-1914 buildings within 400m of woodland and/or water
	Pre-1914 buildings with gable ends or slate roofs, regardless of location
	Buildings located within, or immediately adjacent to woodland and/or immediately adjacent to water
	Dutch barns or livestock buildings with a single skin roof and board and gap or Yorkshire boarding if following a preliminary roost assessment, the building appears particularly suited to bats
<b>Any development works</b>	Any underground duct or structure including tunnels, mines, kilns, ice houses, adits, military fortifications, air raid shelters, cellars
	Unused industrial chimneys that are lined and of brick/stone construction
<b>Floodlighting</b>	Churches and listed buildings, green space (e.g. sports pitches) within 50m of woodland, water, field hedgerows or lines of trees with connectivity to woodland or water
	Any building listed in reference 1
<b>Felling, removal or lopping</b>	Woodland
	Field hedgerows and/or lines of trees with connectivity to woodland or water bodies
	Old and veteran trees that are more than 100 years old
	Mature trees with obvious holes, cracks or cavities or which are covered with mature ivy (including dead trees)
<b>Any development works</b>	Within 200m of rivers, streams, canals, lakes, reedbeds or other aquatic habitats
<b>Any development works</b>	Within or immediately adjacent to quarries or gravel pits
	Immediately adjacent to or affecting natural cliff faces and rock outcrops with crevices or caves and sinkholes
<b>Any single or multiple wind turbine construction</b>	N/A – although for single turbines this can depend on size and location
<b>Any development works</b>	Sites where bats are known to be present

<sup>21</sup> Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3<sup>rd</sup> Edition). Bat Conservation Trust

A summary of the likely scale of impact at a site level in relation to various bat features and development effects is provided below.

<b>SUMMARY OF MAIN IMPACTS AT SITE LEVEL</b>				
<b>Habitat Feature</b>	<b>Development Effect</b>	<b>Scale of impact</b>		
		<b>Low</b>	<b>Medium</b>	<b>High</b>
<b>Maternity Roost</b>	Destruction			✓
	Isolation caused by fragmentation			✓
	Partial destruction; modification		✓	
	Temporary disturbance outside breeding season	✓		
	Post-development interference			✓
<b>Major Hibernation</b>	Destruction			✓
	Isolation caused by fragmentation			✓
	Partial destruction; modification		✓	
	Temporary disturbance outside hibernation season	✓		
	Post-development interference			✓
<b>Minor Hibernation</b>	Destruction			✓
	Isolation caused by fragmentation			✓
	Partial destruction; modification		✓	
	Modified management		✓	
	Temporary disturbance outside hibernation season	✓		
	Post-development interference		✓	
	Temporary destruction then reinstatement	✓		
<b>Mating</b>	Destruction		✓	
	Isolation caused by fragmentation		✓	
	Partial destruction; modification	✓		
	Modified management	✓		
	Temporary disturbance outside hibernation season	✓		
	Post-development interference	✓		
	Temporary destruction then reinstatement	✓		
<b>Night Roost</b>	Destruction	✓		
	Isolation caused by fragmentation	✓		
	Partial destruction; modification	✓		
	Modified management	✓		
	Temporary disturbance outside hibernation season	✓		
	Post-development interference	✓		
	Temporary destruction then reinstatement	✓		

N.B. This is a general guide only and does not take into account species differences. Medium impacts in particular depend on the care with which any mitigation is designed and implemented and could range between high and low.

---

## **METHOD STATEMENT FOR CONTRACTORS – CRAIGSHIELD**

This method statement contains information regarding:

- bat legal status
- and site working methods

*We have read and fully understood this method statement and all key aspects have been explained to the site operatives.*

	<b>Print Name</b>	<b>Signature</b>	<b>Date</b>
<b>Supervisor:</b>			
<b>Operative:</b>			
<b>Operative:</b>			
<b>Operative:</b>			
<b>Operative:</b>			

## RELEVANT LEGISLATION

All bat species are specially protected under the Conservation of Habitats and Species Regulations (2010) and under Schedule 5 of the Wildlife and Countryside Act of 1981. As a result it is illegal to:

- Deliberately kill, injure or capture bats.
- Deliberately or recklessly disturb bats.
- Deliberately or recklessly obstruct access to a bat roost.
- Damage or destroy a bat roost.

Fines of up to £5000 *per bat* affected and confiscation of vehicles used can be imposed for deliberate or reckless disturbance of bats or damage to a roost site.

## BAT ROOST SITES

Bat roost sites in buildings and stone structures can be difficult to locate. British bats vary in size, the smallest being the crevice roosting Pipistrelle with a body the size of a matchbox. The small size of these animals means that they can roost within the smallest cracks or crevices.

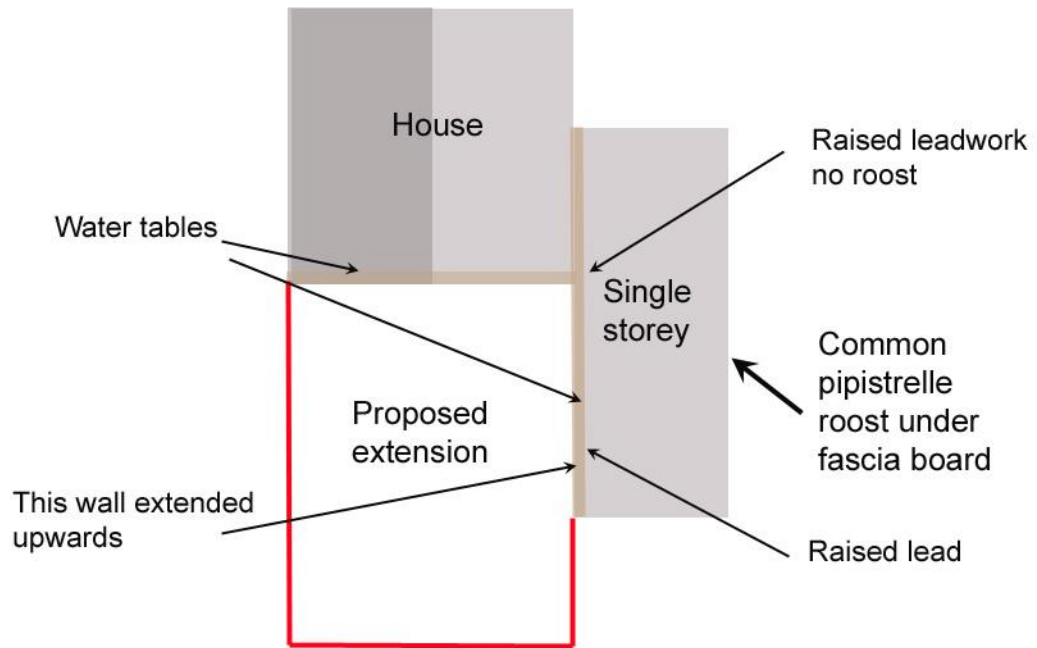
Common locations for crevice roosting bats within buildings include beneath slates or tiles, within mortise joints, rubble fill and cavity walls and between loose stones (see photos). It is possible that small colonies may be present within the fabric of a building yet no external signs are visible. Therefore care is needed when works affect such features.



## Working Methods

Working methods to minimise the risk to bats and avoid causing reckless damage or disturbance must include the following:

- **A known roost is present behind the fascia board of the single storey section and no works should be undertaken within 3m of this roost.**



- There is a section of raised leadwork at the top of the mono-pitch roof. There is a residual risk that bats could use this as a roost site in the future. Check carefully behind the lead before re-dressing the leadwork.
- Extension upwards of the southern wall should be undertaken as a single operation of short duration to minimise disturbance in this area.

If bats are found at any time during the development work, E<sup>3</sup> Ecology Ltd (01434 230982) must be contacted immediately. If it is necessary to move the bats, gloves should be worn and the bats should be carefully placed into a cardboard box and either kept in a quiet place or moved to a part of the building that will not be affected by the construction work and released after dark, close to the roost site.

**If works risk recklessly harming bats then the police can order all construction/renovation work to cease until the issue is properly addressed.**