Elite Ecology

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Moorlands Farm,

Cauldon Lowe



Preliminary Roost Assessment

March 2018

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0. Executive Summary

0.1 This report relates to the barn proposed for conversion at Moorlands Farm, Ellastone Road, Cauldon Low, ST10 3ET (Central OS Grid Reference: SK 06844 47430). It has been prepared at the request of Mr. Rob Ford (Architect), on behalf of Mrs Tracey Hall (acting in the remit of Executor on behalf of the estate). This is in relation to the identification and location of protected bat and bird species. To fulfill this brief, Elite Ecology undertook one Preliminary Roost Assessment (PRA) on the 23rd March 2018.

0.2 Under the current proposals, the stone barn located on site is to be re-developed into a residential dwelling.

0.3 Due to the amount of potential ingress/egress points and suitable roosting features, the building was deemed as having **'moderate'** potential for bats to roost and birds to nest. Therefore, a minimum of two further activity surveys are required during the bat survey season (May to September, inclusive).

0.4 Ecological Impact Assessment

Bat presence/absence

From the PRA survey, it is unknown whether bats are roosting within the building(s) and in what capacity. Two droppings were identified, although this could have been from foraging within the building, or roosting purposes. It is also unknown at this stage, whether bats are commuting/foraging within the local landscape around the site.

Bird presence/absence

From this survey effort, it is apparent that birds are nesting within the lean-to section adjoining the east of the structure. Nesting swallow (*Hirundo rustica*) were apparent from the previous season. An update inspection is required prior to the bat activity surveys to assess the impacts and whether any further compensation and mitigation is required for the projcet.

Ecological value of building units

The ecological value of the building to both bats has been deemed as 'unknown' for bats and 'low' for birds. This is due to the bat utilisation unknown with the current information, and evidence of swallow (*Hirundo rustica*) nesting being apparent within the building.

0.5 Recommendations

The recommendations for 'Moorlands Farm' can be summarised as follows (please refer to section '5 – Recommendations' for a more in-depth description):

- A minimum of two bat activity surveys are required during the bat survey season of May to September.
- An updated bird nesting inspection to be undertaken prior to the bat activity survey.

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1 Introduction

1.1 Report rationale

This report relates to the barn proposed for conversion at Moorlands Farm, Ellastone Road, Cauldon Low, ST10 3ET (Central OS Grid Reference: SK 06844 47430). It has been prepared at the request of Mr. Rob Ford (Architect), on behalf of Mrs Tracey Hall (acting in the remit of Executor on behalf of the estate). This is in relation to the identification and location of protected bat and bird species. To fulfill this brief, Elite Ecology undertook one Preliminary Roost Assessment (PRA) on the 23rd March 2018.

1.2 Site description

The site itself is situated within a rural setting due to it being located on a farm nearby to the Staffordshire settlement of Cauldon Low (the centre of which is situated approximately 554m to the north-east of the survey site). The habitats located on site were buildings, hard standing ground, rubble piles and grassland, as well as a few other buildings (dwellings and storage sheds/garages). Nearby to the site, hedgerows, arable land and pastureland are all apparent. This report relates to one barn with a pitched tile roof that is currently in use for storage purposes. The total area of the building measures approximately 99m^2. Therefore, the site is considered to contain potential to support any local bat and bird populations by offering roosting/nesting, commuting and foraging opportunities.

Figure 1: An aerial photograph of the surveyed site at Moorlands Farm, Cauldon Low (as shown by the red outline).



1.3 Proposed works

Under the current proposals, the stone barn located on site is to be re-developed into a residential dwelling.

1.4 Aims of surveys

The aims of the surveys were to undertake an assessment of the building(s), vegetation and surrounding area to establish whether any bats and birds may be present and, if so, in what way they are using the site. The actions of the surveyors on the site and during the production of this report were conducted in accordance with Bat Conservation Trust (BCT) guidelines (3rd edition).

1.4.1 This survey effort considered the potential for all **bat and bird species (including barn owls)** onsite:

- To establish the possibility of bat roosts and bird nests being present at the proposed development site.
- To assess any roost/nest status (i.e. what type and numbers of individuals).
- To assess suitable food, resources and habitat requirements on site and in the local landscape.

1.4.2 The information was subsequently used in conjunction with the knowledge of the proposed works at the site to determine:

- The potential need for any further survey effort should evidence of protected species be found.
- What impacts the works are likely to have on any protected species found at the site.
- To establish whether a Natural England development licence application is required in relation to the proposed activities concerning protected species.
- Recommendations for any mitigation and/or compensation measures that would be required to keep any protected species at a favourable conservation status on site.

2 Survey Methodology

2.1 Field Survey Methodology

The objective of this report is to provide an ecological evaluation of the site in relation to its suitability for bat and bird utilization.

2.1.1 Walkover survey

An initial walkover survey of the site is undertaken, visually inspecting all affected building/s and any vegetation to be impacted by the proposed works. This is done to determine the availability of required resources for protected species onsite and in the immediate area. This would allow for the determination of:

- The presence or absence of bats onsite (i.e. roosting/foraging/commuting).
- Any evidence of potential bat roosts onsite (i.e. summer roosts).
- The presence or absence of birds' onsite (i.e. nests/foraging/important flightpaths).
- Any evidence of nesting birds' onsite.
- Whether any additional survey effort will be required.

The building(s) onsite were inspected both externally and internally for signs of bat activity. Notes were made on the following in accordance with the guidelines published by the BCT for the scoping and surveying of building(s) and built structures.

2.1.2 External Inspection of the Building Elevations

The objective of this survey method is to locate suitable ingress and egress points that protected species (bats and birds) could use to fly into the building(s). It also aims to identify any areas within the building(s) where these species may be able to roost and/or nest. This was done through a visual assessment of the external elevations and roof through the use of binoculars, endoscope, torch and ladders in full daylight.

This will allow for the determination of the following information:

- Type and age of building(s).
- Type of construction.
- Presence of potential roost features (e.g. slipped/missing/dislodged roof tiles, roof voids, cracks/crevices within the mortar).
- Presence of suitable entry and exit points (e.g. broken/missing windows and doors, missing mortar, lifted tiles).
- The location of any anecdotal evidence of bats and birds such as the presence of live or dead specimens, droppings, grease marks, urine stains and/or characteristic smell of bats.

2.1.3 Internal Inspection of the Building Elevations and Rooms

The object of this survey method is to locate and focus on areas which provide appropriate environmental conditions for bats. This was done through a visual assessment of the internal sections of the building(s) through the use of binoculars, endoscope, bat detectors, torches and ladders in full daylight.

This will allow for the determination of the following information:

- The presence of any warm dark areas, cracks/crevices, beams and cavities for possible bat roost and bird nest sites.
- Locate any potential bat roost and bird nest sites.
- Listen for any bat social calls.
- Examine floors, walls and structural elements for droppings, corpses, skeletons and dead insects.

2.1.4 Building Rating

Every structure surveyed will be assigned a rating based on its potential suitability to support roosting bats. The rating is based on the location of the structure(s) in the surrounding landscape, the number, the type of features suitable for use by bats and the surveyor's experience. For example:

A structure that has a high level of anthropogenic disturbance with limited opportunities for access by bats, and is situated within an urbanised area with few or no mature trees, parkland, woodland or wetland would generally equate to having negligible/low potential.

Conversely, an older structure (e.g. pre 20th century or early 20th century) with multiple features suitable for use by bats that is close to optimal foraging habitat would equate to having high potential.

The amount of additional activity survey effort required for each structure(s) will depend on its rating:

- Negligible – No further survey effort is required
- Low – One further activity survey is required (structures only).
- Moderate – Two further activity surveys are required.
- High – Three further activity surveys are required.

2.1.5 Roost Categories

Any structures with evidence of bats will be further evaluated to assess which of the following roost categories may be present onsite:

- **Day Roost:**
  A place where individual bats or small groups of males, rest or shelter during the daytime. These bats are rarely found at night at these sites.

- **Feeding Roost:**
  A place where individual bats rest or feed during the night, but are rarely present in the day.

- **Hibernation Roost:**
  A place where bats may be found either individually or together during the winter months. These roosts often have a constant cool temperature and high humidity.

- **Maternity Roost:**
  A place where female bats give birth and raise their young to independence.

- **Mating Roost:**
  A place where mating/copulation takes place between male and female bats. These can continue through the winter months.

- **Night Roost:**
  A place where bats rest and/or shelter during the night, but will rarely be found here during the day. These can be used colonially or individually by the bats.

- **Satellite Roost:**
  These are alternative roosting sites that are found within close proximity to the main nursery colony within the maternity roost. These are used throughout the breeding season by individual or small groups of female bats.

- **Swarming Site:**
  A place where large numbers of bats come together during the latter summer months through until Autumn. These sites are classed as being important mating areas.

- **Transitional/Occasional Roost:**
  A place that is used by individuals or small groups of bats for a small period of time. These are used by the bats prior to hibernation and/or shortly after hibernation.

2.1.6 Bat Detector Survey (presence/absence survey)

The object for this part of the survey (if required) is to detect any active bats leaving or returning to their possible roost sites that have been identified within the external and internal surveys. This is achieved by undertaking dusk and/or dawn activity surveys under the following protocol:

- Being at the site 15 minutes before sunset (dusk survey) and 2 hours before sunrise (dawn survey).
- Listening for any social calls at potential roost sites using bat detectors.
- Standing at different survey points around the building(s) and/or vegetation, using bat detectors to hear the bat echolocation. In addition to this, the survey will attempt to witness the first bats emerging (dusk) and the bats returning (dawn) to their roosts.
- Standing at different transect points at foraging/commuting areas around the site.
- Carrying out this survey methodology for up to two hours after sunset (dusk) and up to 15 minutes after sunrise (dawn). This will cover the emergence and re-entry of the bats at the potential roost site, for some bat species.

2.1.7 The evidence collated from the surveys will be used to determine whether a European Protected Species (EPS) licence will be required to ensure the project proceeds whilst complying with the required legislation. This will also include identifying which mitigation and/or compensation measures [if any] would be most appropriate to the project.

2.2 Desktop Survey Methodology

2.2.1 A variety of resources were independently consulted to assess the known local records within the nearby area and the importance of the site within the local landscape from an ecological perspective. The resources used were the Local Records Centre, www.naturalengland.org.uk, www.ordanancesurvey.co.uk, Google Maps, Google Earth and Bing Maps. A search of other relevant nature conservation information was made through the use of the Multi-Agency Geographic Information for the Countryside (MAGIC) database.

2.2.2 The local records centre were contacted to provide data on all protected species and designated sites within 2km of the proposed development site. Staffordshire Ecological Record (SER) were the relevant local record centre for this project.

2.3 Surveyors Information

2.3.1 The survey was undertaken by licensed bat ecologist/s and members of the Chartered Institute of Ecology & Environmental Management (CIEEM):

Mr. Richard Millington BSc (Hons), ACIEEM, Senior Ecologist, Natural England Bat Survey Licence Number: 2016-26861-CLS-CLS Bat Survey Level 2.

Mr. Adam Harper BSc, Ecologist.

2.4 Field surveys

2.4.1 Site Surveys

No previous site surveys were revealed to Elite Ecology.

2.4.2 Roost Surveys - weather conditions and timing

Moorlands Farm was externally and internally inspected for the presence of bats and birds with the use of binoculars, torches, an endoscope and ladders in full daylight. The bat detectors used during the survey visits were the Bat Box Duet, SSF Bat2 and the EcoObs Batcorder. The following table outlines the environmental variables from the survey visits:

Environmental variables	PRA Survey of the Buildings – 23rd March 2018. Daytime
Temp Start:	8°C
Temp Finish:	8°C
Humidity Start:	74%
Humidity Finish:	78%
Cloud Cover Start:	80%
Cloud Cover Finish:	80%
Wind Speed Average:	Low
Precipitation:	None

3 Results

3.1 Desktop Survey Results

The ecological data search provided by SER revealed numerous protected bat and bird species within the 2km search radius of 'Moorlands Farm,' Cauldon Low.

3.1.1 Bats:

The ecological data search revealed several bat records within the 2km search radius. No UKBAP species were revealed in the search. The non-BAP species recorded in the search were the common pipistrelle (*Pipistrellus pipistrellus*) bat. In addition to these, there were a few records of unidentified pipistrelle specimens (*Pipistrellus* sp.) and myotis (Myotis sp.) and unidentified bat specimens were also revealed in the search.

No records fell on or within 500m of the 'Moorlands Farm' re-development site.

3.1.2 Birds:

Numerous protected bird species have been identified within the 2km search radius. All birds can be split into three categories of conservation importance (red, amber and green – please see RSPB for more information). The bird species revealed within the 2km search radius are listed within the table below.

Common Name	Latin Name
Barn Owl	*Tyto alba*
Common Crossbill	*Loxia curvirostra*
Common Goldeneye	*Bucephala clangula*
Common Kingfisher	*Alcedo atthis*
Eurasian Hobby	*Falco subbuteo*
European Golden Plover	*Pluvialis apricaria*
Fieldfare	*Turdus pilaris*
Little Plover	*Charadrius dubius*
Osprey	*Pandion haliaetus*
Peregrine Falcon	*Falco peregrinus*
Red Kite	*Milvus milvus*
Redwing	*Turdus iliacus*
Short-eared Owl	*Asio flammeus*

Please note: Any records may not truly represent the current species on site. The map provided by SER showing the locations of the records obtained through the ecological data search can be found in Appendix B.

3.1.3 Designated sites

As the current proposals remain within the site boundary and the nature of the site itself, it was not necessary to obtain any further information regarding both Statutory and Non-Statutory Nature Conservation Designations. This is due to the proposed works not altering any of the wider surrounding landscape.

3.2 Field surveys

3.2.1 Habitat description

Moorlands Farm is situated approximately 554m to the south-west of the settlement of Cauldon Low, Staffordshire. On site, there are buildings, hard standing ground and grassland, as well as a few other buildings (dwellings and storage sheds/garages). Within the wider landscape, pastureland, arable land and hedgerows are all evident. Therefore, the habitats that are present in and around the site contains all of the critical habitat elements that are considered to be crucial to both bat and bird populations.

Figure 2: An aerial photograph of the surveyed site (yellow star) and some of the nearby habitats to 'Moorlands Farm,' Cauldon Low.



3.2.2 Building survey

External Inspection:

The site inspected consists of a two-storey brick built barn, with adjoining lean-to. The structure inspected was a stone walled barn with a pitched clay tile roof. From the external inspection, it became clear that many gaps and crevices were present for bats and birds to gain access into the internal portion of the structure. Around the site, there were some gaps in the stonework through missing mortar, as well as some vents within the wall. In addition to this, some roof tiles had slipped or become dislodged, thus allowing potential access into the structure for roosting and nesting purposes. There was some missing mortar at the apex of the roof that could be used by crevice dwelling bat species. On the eastern side of the building there is a separate section with a steel roof although this is considered to be of negligible potential to support roosting bats.

Internal Inspection:

Internally, there were timber beams and bitumen roofing felt present. The features on the ground floor were deemed unsuitable for roosting bats. On the first floor, gaps around the doors as well as some windows allowed some light to enter the structure, with particular reference to the northern elevation of the barn. However, there were plenty of cracks and crevices internally for bats to tuck themselves away to roost. The roofing felt was in good condition but allowed many gaps between the tiles and the felt that bats could be roosting. The lean-to section to the east was also found to be used by swallow (*Hirundo rustica*) for nesting purposes.

3.2.3 Summary of the building inspection

Due to the amount of potential ingress/egress points and suitable roosting features, the building was deemed as having **'moderate'** potential for bats to roost and birds to nest.

Therefore, a minimum of two further activity surveys are required during the bat survey season (May to September, inclusive).

Table 1: Low/Moderate/High potential building(s) survey recommendations. The full guidance can be found in the Bat Conservation Trust Good Practice Survey Guidelines. These guidelines are what all local authorities abide by.

Bat Conservation Trust

Table 7.3 Recommended minimum number of survey visits for presence/absence surveys to give confidence in a negative result for structures (also recommended for trees but unlikely to give confidence in a negative result).

Low roost suitability	Moderate roost suitability	High roost suitability
One survey visit. One dusk emergence or dawn re-entry survey[a] (structures). No further surveys required (trees).	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey.[b]	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn.[b]

[a] Structures that have been categorised as low potential can be problematic and the number of surveys required should be judged on a case-by-case basis (see Section 5.2.9). If there is a possibility that quiet calling, late-emerging species are present then a dawn survey may be more appropriate, providing weather conditions are suitable. In some cases, more than one survey may be needed, particularly where there are several buildings in this category.

[b] Multiple survey visits should be spread out to sample as much of the recommended survey period (see Table 7.1) as possible; it is recommended that surveys are spaced at least two weeks apart, preferably more. A dawn survey immediately after a dusk one is considered only one visit.

3.2.4 DNA Results

No DNA Results were obtained for the site as no droppings were identified to be sent off for analysis.

3.2.5 Activity surveys

As the preliminary roost assessment survey was undertaken in March 2018, outside of the bat survey season, no activity surveys were undertaken by Elite Ecology. Due to the results from the building(s) inspection, it is recommended that a minimum of two dusk/dawn activity surveys are undertaken between May and September.

4 Impact Assessment

4.1 Constraints

Constraints on:	Survey Information	Equipment Used
Constraint (Yes or No):	No	No
Explanation of Constraints:	N/A	N/A
Action Taken:	N/A	N/A

4.2 Potential Impacts of the re-development

Under the current planning proposals the barn will be re-developed into a residential dwelling. The potential impacts have been identified as follows:

4.2.1 Designated sites

As the proposed works are due to remain within the site boundary, the presence of any designated sites nearby is not applicable to this project. This, therefore, means that any building works would be of no detriment to the surrounding landscape.

4.2.2 Bat Roosts

Impact	Short-term Impacts: Disturbance	Long-term Impacts: Roost Modification	Long-term Impacts: Roost Loss
Classification:	Unknown	Unknown	Unknown
Justification:	The impacts upon roosting individuals could not be assessed from the PRA survey alone.	The impacts upon roosting individuals could not be assessed from the PRA survey alone.	The impacts upon roosting individuals could not be assessed from the PRA survey alone.
Any further action:	A minimum of two activity surveys are necessary between May and September to assess the bat utilisation of the site.	A minimum of two activity surveys are necessary between May and September to assess the bat utilisation of the site.	A minimum of two activity surveys are necessary between May and September to assess the bat utilisation of the site.

4.2.3 Bird Nests

Due to the identification of old bird nests within the structure, it is anticipated that the proposed re-development works will have a **'moderate'** effect on the local bird populations. A further assessment (prior to the bat activity surveys) is required to determine how many birds are using the structure and whether further compensation measures are required.

4.2.4 Foraging and commuting habitat

It is considered that the re-development of the site would have a **'negligible'** effect on potential foraging and commuting habitat. The site itself offers little foraging habitat. Post-development, all foraging and commuting habitats will be removed and thus be negatively affected by the current works.

5 Recommendations

From the information obtained during the PRA survey, the building in question has been deemed to have ‘moderate’ potential to support roosting bats. Therefore, a minimum of two activity surveys are necessary during the bat survey season of May to September.

Although bird nests were identified from last year, an update internal inspection is required prior to the bat activity surveys to assess the impacts upon the local bird populations. From this, appropriate mitigation and compensation is required.

6 Summary

6.1 Bat presence/absence

From the PRA survey, it is unknown whether bats are roosting within the building(s) and in what capacity. Two droppings were identified, although this could have been from foraging within the building, or roosting purposes. It is also unknown at this stage, whether bats are commuting/foraging within the local landscape around the site.

6.2 Bird presence/absence

From this survey effort, it is apparent that birds are nesting within the lean-to section adjoining the east of the structure. Nesting swallow (*Hirundo rustica*) were apparent from the previous season. An update inspection is required prior to the bat activity surveys to assess the impacts and whether any further compensation and mitigation is required for the projcet.

6.3 Ecological value of building units

The ecological value of the building to both bats has been deemed as ‘unknown’ for bats and ‘low’ for birds. This is due to the bat utilisation unknown based on the current information, with evidence of swallow (*Hirundo rustica*) nesting being apparent within the lean-to adjoining the barn to the east.

6.4 Recommendations

The recommendations for ‘Moorlands Farm’ can be summarised as follows (please refer to section ‘5 – Recommendations’ for a more in-depth description):

- A minimum of two bat activity surveys are required during the bat survey season of May to September.
- An updated bird nesting inspection to be undertaken prior to the bat activity survey.

7 References

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8 Appendices

Appendix A: Site Plans

Appendix B: Eco Data Map

Appendix C: Artificial Light and Bats

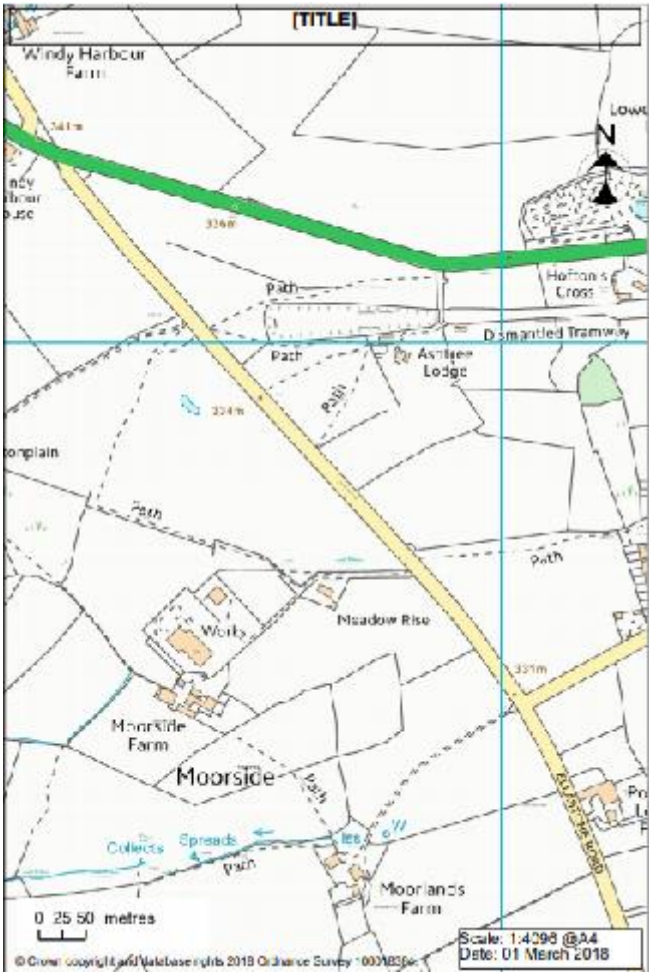
Appendix D: Photographic Records

Appendix E: The Annual Bat Year (BCT)

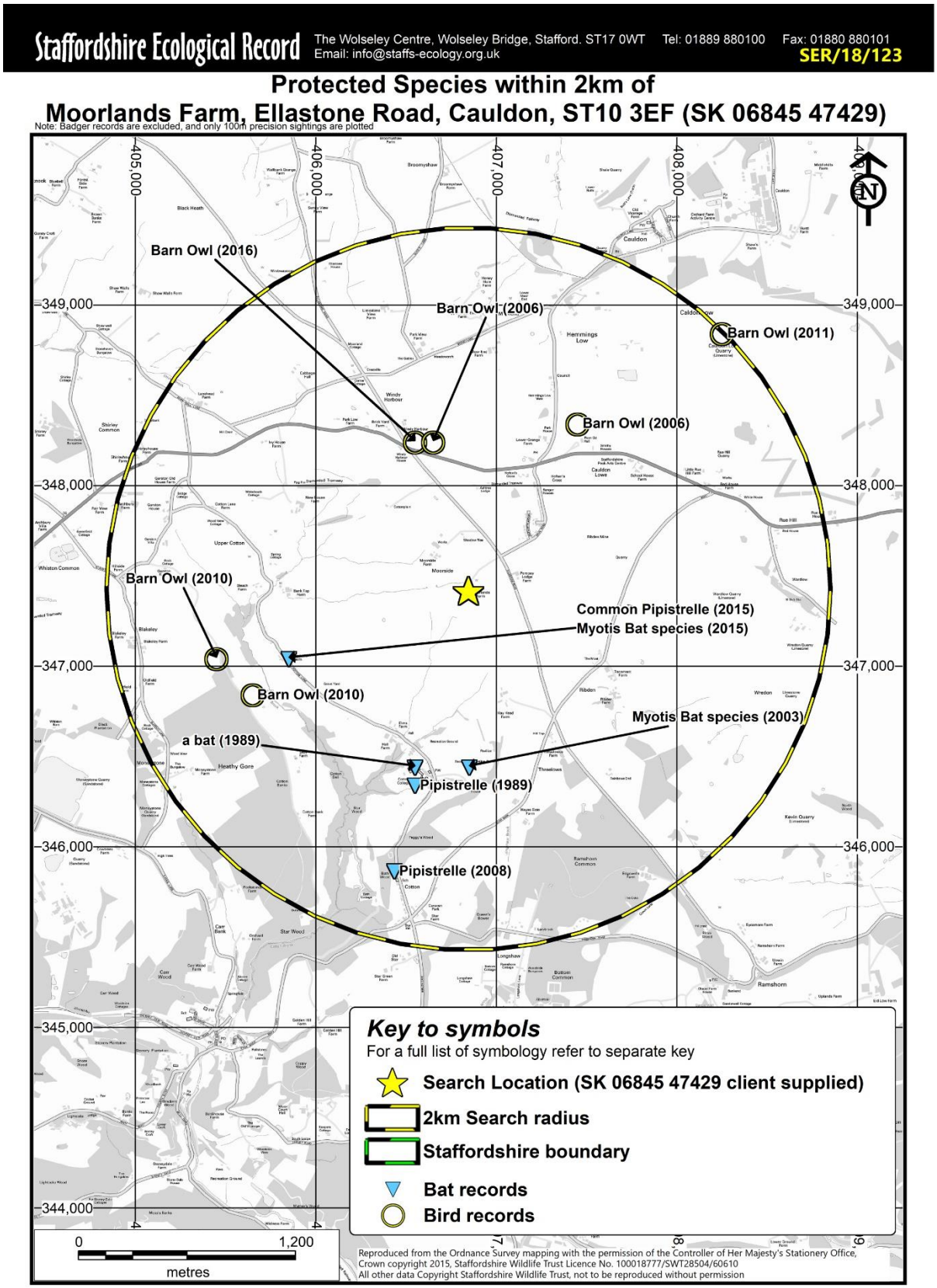
Appendix F: Legislation

Appendix A: Site Plans

These plans are for illustration purposes only. Please contact Mr Rob Ford (Architect) for more detailed illustrations on roblford@btopenworld.com



Appendix B: The Ecological Data Search map



Appendix C: Artificial Lighting and Bats

Artificial lighting is known to affect bat's roosting and foraging behaviour, with lighting resulting in a range of impacts that includes roost desertion (BCT, 2009), delayed emergence of roosting bats (Downs et al., 2003), increased activity of some bat species and decreased activity by others (Stone et al., 2012).

An experimental approach using LED units, demonstrated that relatively fast-flying bat species, including the common pipistrelle, showed no significant impacts as a result of new artificial lighting, even when lighting was set at relatively high levels close to 50 lux.

In contrast, slow flying bats such as the myotid bats (Myotis spp.) showed sharp reductions in presence, even at low light levels of 3.6 lux (Stone et al., 2012).

Current recommendations for all bat species specifies that no bat roost should be directly illuminated.

Due to the impacts of lighting, mitigation and sensitive lighting design schemes are required for projects where bats are present. These should include bat friendly lighting plans that should aim to avoid lighting wherever possible. If this is not possible, then the minimisation of any lighting impacts is required by adopting the following measures:

- To introduce lighting curfews or use of PIR sensors.

  Lighting curfews can be an effective way of avoiding impacts on bats. These curfews may involve either turning off lighting or dimming light units at specific times of the night, dimming units at key times of the year, providing the luminaire allows for this option via a control unit. Lighting to be triggered by PIR sensors can be expected to be illuminated only when required and for a low proportion of time.

- To consider no lighting solutions where possible.

  Options such as white lining, good signage and LED cats eyes should be considered as preferable. Reflective fittings may help make use of headlights to provide any necessary illumination in some areas.

- To use only high pressure sodium or warm white LED lamps where possible.

  High pressure sodium and warm white LED lamps emit lower proportions of insect attracting UV light than mercury, metal halide lamps and white LED lighting. Generally, lamps should have a lower proportion of white or blue wavelengths, with a colour temperature <4200 kelvin recommended (BCT, 2014).

- To minimise the spread of light.

  The light spread should be kept at or near horizontal to ensure that only the task area is lit. Flat cut-off lanterns or accessories should be used to shield or direct light to where it is required. Baffles, hoods, louvres and shields should be used where necessary to reduce light spill.

- To consider the height of the lighting column.

  While downward facing bollard lighting is often preferable, it should be noted that a lower mounting height does not automatically reduce impacts to bats as bollard lighting can often be designed to provide up-lighting. Where bollard lighting is considered to be the most appropriate system, bollard spacing or unit density should be kept to a minimum and units should be fitted with the appropriate hoods/deflectors to reduce any up-lighting.

- To avoid reflective surfaces below lights.

  The polarisation of light by shiny surfaces attracts insects increasing bat activity (BCT, 2012). Consequently, surface materials around lighting require consideration.

Appendix D: Photographic Records

Plate 1: A photograph of the western elevation of the barn. Some of the vents and the slipped/missing/dislodged tiles are visible in this image. All of these are potential access points for bats and birds.



Plate 2: A photograph of the southern elevation of the barn. Once again, missing mortar was evident, with multiple potential access points.



Plate 3: A photograph of the roof, illustrating some lifted/dislodged tiles.



Plate 4: A photograph showing some missing mortar at the apex providing potential access and roosting points.



Plate 5: An image of the eastern elevation of the barn. This part has a steel roof and is considered to have lower potential for roosting bats and nesting birds. The image also shows windows where light is allowed into the building.



Plate 6: A photograph of the roofing felt.



Plate 7: A secondary photograph of the internal section of the barn showing the roofing felt in good condition.



Plate 8: A photograph clearly showing some of the gaps in the mortar and lifted tiles allowing access for bats.

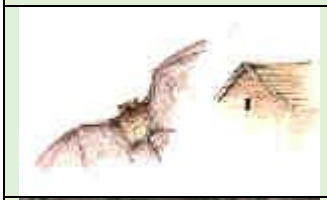


Plate 9: An overview image of the internal eastern section of the barn.



Appendix E: The Annual Bat Year (BCT)

A Year in the Life of a Bat		
	**January**	Hibernating; using up fat reserves.
	**February**	Still hibernating; few fat reserves left.
	**March**	Some activity; occasional bat seen feeding.
	**April**	Awake and feeding at night.
	**May**	Females looking for nursery sites.
	**June**	Young born, usually only one.

	**July**	Young still suckling.
	**August**	Young start catching insects; females leave nursery to find males.
	**September**	Mating season begins; start building fat reserves for hibernation.
	**October**	Search for suitable hibernation site.
	**November**	Hibernation begins although still some activity in warm weather.
	**December**	Hibernating.

Appendix F: Legislation and Policy

All species of bat are fully protected under a variety of domestic, European and international legislation and conventions. These include:

- Bern Convention (Appendix II)
- Bonn Convention (Appendix II)
- Conservation Regulations (Northern Ireland) 1995
- Conservation of Habitats and Species Regulations 2010
- Countryside Rights of Way Act 2000
- Eurobats Agreement
- Habitats Directive (Annexes IV and II)
- Habitats Regulations 1994 (as amended) Scotland
- NERC Act 2006
- Wildlife and Countryside Act 1981 (as amended)
- Wild Mammals Protection Act

In addition to this, some species have additional protection by being listed on the UK Biodiversity Action Plan (UKBAP).

The legislation afforded to bats makes it illegal to possess or control any live or dead specimens, to damage, destroy or obstruct access to any structure or place used for shelter, protection or breeding, and to intentionally disturb a bat while it is occupying a structure or place which it uses for that purpose.

All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended), which protects birds, nests, eggs and nestlings from harm. In addition to this, some rarer species, such as barn owls are afforded extra protection.

National Planning Policy Framework, Section 11:

The published framework in 2012 replaces the previous Planning Policy Statement 9.

Section 11: Conserving and enhancing the natural environment reaffirms the government's commitment to maintaining green belt protections and preventing urban sprawl, retains the protection of designated sites and preserves wildlife. It also aims to improve the quality of the natural environment and halt declines in species and habitats, protects and enhances biodiversity and promotes wildlife corridors.

Biodiversity 2020:

This sets out to halt overall biodiversity loss and support healthy well-functioning ecosystems by establishing coherent ecological networks, with more and better places for nature, to the benefit of wildlife and people. The government's policy is aimed at individuals, communities, local authorities, charities, business and government, which all have a role to play in delivering Biodiversity 2020.

9 Notice to Readers: Conditions of this Report

All reports are certified products and cannot be shown, copied or distributed to third parties without the written permission of Elite Ecology. No liability is accepted for the contents of the report, other than to that of the client(s). If any part of this report is altered without the written permission of Elite Ecology, then the whole report becomes invalid.

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The survey results purport the current status of the site and its potential for protected species utilisation at the time of surveying. It should not be viewed as a complete list of the possible flora and fauna species that could be using the site at different times of the year.

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No reliance should be made on any such comments in relation to the structural integrity of the features located on the surveyed site. All information within the report is based solely on evidence that has been found on site during the service provided. No individual opinion or inference will be made other than that of the suitably qualified ecologist appointed to the project.