



envirotech

**Ecological Consultants
Environmental and Rural Chartered Surveyors**

Ecological Appraisal

Land off Peel Park Avenue Clitheroe



Tel: 015395 61894
Email: info@envtech.co.uk
Web: www.envtech.co.uk
Envirotech NW Ltd

The Stables, Back Lane, Hale, Milnthorpe, Cumbria. LA7 7BL
Directors: A. Gardner BSc (Hons), MSc, CEnv, MCIEEM, MRICS, Dip NDEA
H. Gardner BSc (Hons), MSc, CEnv, MRICS
Registered in England and Wales. Company Registration Number 5028111

ACCURACY OF REPORT

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

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

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

Quality and Environmental Assurance

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

Author	Emma Wainwright	Date	02/10/2017
Checked by	Andrew Gardner	Date	19/10/2017
Report Version	1		
Field data entered	☒		
Report Reference	4228		

Contents

1. EXECUTIVE SUMMARY	5
2. INTRODUCTION	6
2.1 Background	6
2.2 Objectives	7
3. METHODOLOGY AND SOURCES OF INFORMATION	8
3.1 Data Search	8
3.2 Vegetation and Habitats	8
3.3 Timing and Personnel	8
4. SPECIES SURVEY METHODOLOGY	9
4.1 Amphibian	9
4.2 Badger	9
4.3 Bats	10
4.4 Birds	10
4.5 Brown Hare	11
4.6 Invertebrates	11
4.7 Reptiles	11
4.8 Survey limitations	11
5. RESULTS	13
5.1 Data Search	13
6. PHASE 1 SURVEY RESULTS	17
6.1 Habitat Results	17
6.2 Vegetation	22
6.3 Amphibian	22
6.4 Badger	23
6.5 Bats	23
6.7 Birds	28
6.8 Brown Hare	28
6.9 Invertebrates	28
6.10 Reptiles	29
6.11 Other	29
6.12 Statutory and Non-Statutory Sites	29
7. MITIGATION/RECOMMENDATIONS	30
7.1 Compensatory planting and habitat enhancement	30
7.2 Amphibians	30
7.3 Badger	31
7.4 Bats	31
7.5 Birds	31
7.6 Brown Hares	32

7.7	Invertebrates	32
7.8	Reptiles	32
8.	CONCLUSION	33
9.	REFERENCES	34
10.	BAT SURVEY	36

1. EXECUTIVE SUMMARY

- 1.1.1 Envirotech NW Ltd were commissioned in September 2017 by Eric Wright Group to carry out an ecological appraisal of land off Peel Park Avenue, Clitheroe, Lancashire. It is proposed that new houses are constructed on the site.
- 1.1.2 A data search and desk study of the site and an area within 2km of the site were undertaken to establish the presence of protected species and notable habitats.
- 1.1.3 The site was then visited by Envirotech NW Ltd on the 25th September and 2nd October 2017. A full botanical survey of the site was initially undertaken and this was followed by surveys to establish the presence or absence of bats, amphibians, nesting birds, brown hares and badgers at the site or in proximity such that they may be affected by the proposed development.
- 1.1.4 The plant species assemblages recorded at the site are all common in the local area and of considered of low ecological value. Domestic gardens and sympathetically landscaped open space is considered to offer habitat of equal or greater ecological value.
- 1.1.5 A building to be demolished has negligible potential for use by bats.
- 1.1.6 None of the hedgerows around the site perimeter were considered important under the Hedgerow Regulations (1997).
- 1.1.7 Birds are likely to utilise hedgerows on site boundaries for nesting between March and September. Any vegetation clearance should therefore be undertaken outside of this period.
- 1.1.8 No other notable or protected species were recorded on the site.

2. INTRODUCTION

2.1 Background

2.1.1 In September 2017 Envirotech NW Ltd were commissioned by Applethwaite Limited to carry out an Ecological Appraisal of land off Peel Park Avenue, Clitheroe, Lancashire central grid reference SD 74806 40989 (Figure 1). A site investigation was undertaken and a report compiled which includes recommendations for any future actions and or mitigation required.

2.1.2 The survey was requested in connection with the proposed construction of new houses.

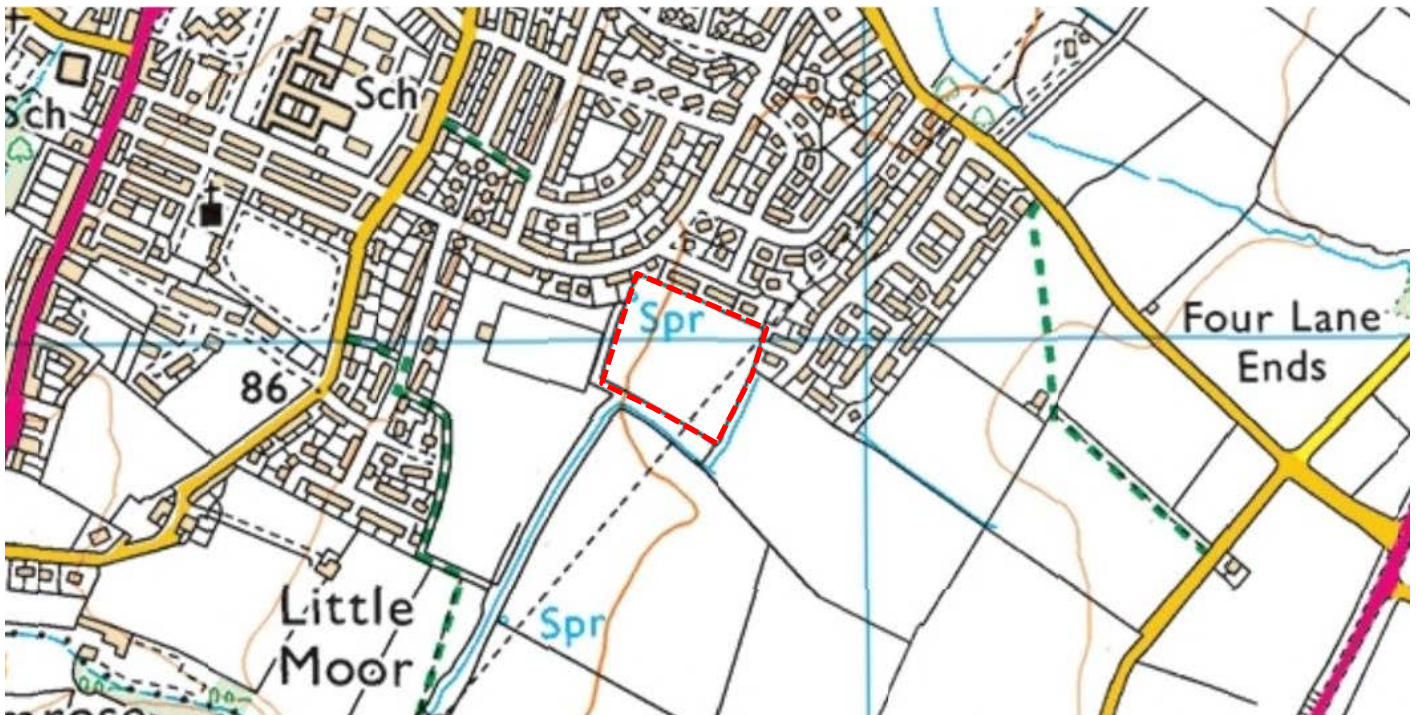


Figure 1 Site location at SD 74806 40989 circled red.

2.2 Objectives

2.2.1 The main objectives of the study were:

- The completion of a Phase 1 Habitat Survey including the preparation of a vegetation and habitat map of the site and the immediate surrounding area.
- The survey and assessment of all habitats for statutorily protected species.
- An evaluation of the ecological significance of the site.
- The identification of any potential development constraints and the specification of the scope of mitigation and enhancement required in accordance with wildlife legislation, planning policy and other relevant guidance, and;
- The identification of any further surveys or precautionary assessments that may be required prior to the commencement of any development activities.

3. METHODOLOGY AND SOURCES OF INFORMATION

3.1 Data Search

- 3.1.1 The Biological Records centre for Lancashire “LERN”, the Envirotech dataset, and the Multi-Agency Geographic Information for the Countryside (MAGIC) were searched to establish the presence of any records of statutorily protected, notable or rare species, and any designated sites of international, national, regional or local importance within a 2km radius of the site boundary.
- 3.1.2 The Envirotech dataset is compiled from extensive field surveys from the period 2004-present, as well as records obtained from third parties during this time.
- 3.1.3 Google Earth and Google Street View were consulted to establish the presence of any features of ecological importance within the local area.

3.2 Vegetation and Habitats

- 3.2.1 A vegetation and habitat map was produced for the site and the immediate surrounding area. The mapping is based on the Joint Nature Conservation Committee Phase 1 Habitat Survey methodology (JNCC 2003).
- 3.2.2 Searches were made for uncommon, rare and statutorily protected plant species, those species listed as protected in the Wildlife and Countryside Act (1981) and indicators of important and uncommon plant communities. All plant nomenclature follows Stace (1991).
- 3.2.3 Searches were carried out for the presence of invasive species, including those listed on Schedule 9 of the Wildlife and Countryside Act (1981), namely Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) and giant hogweed (*Heracleum mantegazzianum*) on terrestrial habitat and aquatic species such as floating pennywort (*Hydrocotyle ranunculoides*), water hyacinth (*Eichhornia crassipes*) and New Zealand pygmyweed (*Crassula helmsii*).

3.3 Timing and Personnel

- 3.3.1 The site and surrounding land was visited on the 25th September 2017 and 2nd October 2017.
- 3.3.2 During the visit, weather conditions were suitable for the survey types undertaken being dry in late summer
 - (EW) Miss Emma Wainwright BSc (Hons) Grad CIEEM
Natural England Great Crested Newt Licence (Level 1)
Accredited Agent on Natural England Bat Class Licence (Level 2)

4. SPECIES SURVEY METHODOLOGY

4.1 Amphibian

- 4.1.1 Great crested newts (*Triturus cristatus*) are listed on Annexes II and IV of the EC Habitats Directive and Appendix II of the Bern Convention. It is protected under Schedule 2 of the Conservation (Natural Habitats) Regulations (2010) and Schedule 5 of the Wildlife & Countryside Act (1981).
- 4.1.2 Water-bodies located within or adjacent to the study area were identified and where access was possible were assessed for their potential to support great crested newts.
- 4.1.3 The criteria used in the assessment are based on those contained in the Herpetofauna Workers Manual and Oldham et al, 2000, and in applying these criteria a precautionary approach was adopted. Following the criteria developed by Oldham et al (2000), the HSI tool developed for use with great crested newts and forming part of Natural England's EPS Licensing process was used to determine the suitability of ponds for great crested newts.
- 4.1.4 The pond assessment was undertaken in order to determine which water-bodies, based on their potential to support great crested newts, should be subject to presence/absence surveys.

4.2 Badger

- 4.2.1 Badgers (*Meles meles*) and their setts are protected under the Protection of Badgers Act (1992). This legislation arises from animal welfare issues (rather than on the basis of nature conservation grounds) and protects badgers from being killed, injured or disturbed whilst occupying a sett.
- 4.2.2 A disturbance to badgers in their setts may occur as a result of construction operations. Natural England recommends that the use of heavy machinery in proximity of a sett entrance should be avoided, with a 'disturbance free-zone' being established.
- 4.2.3 The degree of disturbance attributed to construction activity is a function of the background level of activity badgers are accustomed to and that which will be attributed to a proposed activity. The "disturbance free zone" is therefore site specific.
- 4.2.4 The survey for badgers comprised an assessment of all suitable habitat within and outside the study area boundary (where this was possible) for indications of use by badgers.
- 4.2.5 Signs of badgers which were searched for included:
 - Setts - 'D' shaped entrances at least 25cms wide and wider than they are high with large spoil mounds
 - Discarded bedding at sett entrances (this includes grass and leaves)
 - Scratching posts on shrubs and trees close to a sett entrance

- The presence of badger hairs which are coarse, up to 100mm long with a long black section and a white tip
- Dung pit latrines and footprints
- Habitual runs through vegetation and beneath fences
- Hedgehog carcasses

4.3 Bats

4.3.1 All British bat species are fully protected under Schedule 5 of the Wildlife and Countryside Act (1981), and are included on Schedule 2 of the Conservation (of Natural Habitats) Regulations (2010), as European Protected Species. Taken together, these pieces of legislation make it an offence to:

- Intentionally or recklessly kill, injure or capture bats;
- Deliberately or recklessly disturb bats (whether in a roost or not);
- Damage, destroy or obstruct access to bat roosts.

4.3.2 The Bat Conservation Trust (Hundt (2012)) and Collins, J. (ed) (2016) issued guidelines on bat survey methodology, a key feature of their recommendation is for the undertaking of a pre-survey assessment – an initial desk-study and a walkover assessment of the survey area and its surrounding area to identify the relative value of the habitats present for bats and likely commuting routes. This is to be followed by a survey program that is appropriate to the likely level of bat activity within the survey area to be determined by and based on the experience of the surveyor.

4.3.3 The potential value of the survey area for foraging bats was assessed through consideration of two main factors: professional knowledge of bat ecology and foraging behaviour in combination with the geographical location, topography and habitats present within the survey area and surrounds. This resulted in the production of a map showing habitat quality both on and adjacent to the site.

4.3.4 An anabat static bat detector was left on site for a period of six nights. This recorded bat activity at this site for this duration.

4.3.5 Trees and structures on and within the survey area boundary were assessed for their potential to support roosting or hibernating bats. This comprised a close inspection of all trees and buildings on the site to allow an assessment of their potential to be used by bats to be made by a licensed surveyor.

4.3.6 Trees were all assessed in accordance with Collins, J. (ed) (2016).

4.4 Birds

4.4.1 All breeding birds, other than pest species, are protected under the Wildlife and Countryside Act of 1981 when building a nest, rearing young or sitting on eggs. Some

bird species, such as barn owl (*Tyto alba*), are protected when near an active nest site. Several birds are listed as UK and or County BAP species.

- 4.4.2 Bird species and behaviour was noted during the other field surveys. All areas are covered equally, in order to avoid the subjective survey of better quality 'bird habitat'. All birds displaying breeding behaviour were recorded.

4.5 Brown Hare

- 4.5.1 The brown hare (*Lepus europaeus*) is a UK BAP species.
- 4.5.2 The survey method involved walking boundaries and surveying with binoculars. The survey was conducted at a suitable distance to ensure that the hares were not disturbed. Generally, surveys were undertaken throughout the early afternoon and evening when hares are thought to be most active and feeding.

4.6 Invertebrates

- 4.6.1 A general assessment was made of the study area's suitability for supporting invertebrates during the phase 1 survey. The study area's lack of habitat diversity, species-poor composition and uniformity of vegetation structure (i.e., lack of variation in height and microtopography) resulted in our belief that a low diversity of invertebrates would be likely to occur across the site.

4.7 Reptiles

- 4.7.1 All native reptiles are protected in Britain under the Wildlife and Countryside Act of 1981. It is an offence to intentionally kill, injure, sell or advertise to sell any of the six native species.
- 4.7.2 The survey for these species was based on assessing the habitat type and suitability of the site. This comprised an assessment of satellite imagery for the site and surrounding area as well as comparison of the results from the records searches with habitat types. The general habitat at the site was evaluated in terms of its suitability to reptiles for foraging or breeding.
- 4.7.3 Reptile surveys comprising visual encounter surveys were undertaken. Habitat at the site was not considered sufficiently suitable for a full presence/ absence survey to be warranted.

4.8 Survey limitations

- 4.8.1 The survey was undertaken in late summer. At this time of year most plant species are easily identified although the activity of some species is reduced.
- 4.8.2 Due to the habitats present on site there were no significant constraints in respect of identifying the botanical interest of the site.

4.8.3 The duration, extent and scope of the surveys were considered sufficient to plan appropriate mitigation and recommend additional precautionary survey work required prior to the commencement of work.

4.8.4 No significant survey limitations were encountered.

5. RESULTS

5.1 Data Search

- 5.1.1 Envirotech and LERN hold no records of protected or notable species for the site. There are however records of protected or notable species within 2km (Figure 2). These are discussed in the relevant sections below.
- 5.1.2 The nearest Biological Heritage site is Primrose Lodge c. 510m to the West of the site (Figure 3). This site contains aquatic and wet woodland habitats and is designated for its supporting of green figwort. Habitats present on site are not representative of those present in this non-statutory designated site.
- 5.1.3 Salthill and Bellmanpark Quarries Site of Special Scientific Interest (SSSI) occurs c. 1.5km to the North of the site (Figure 4). This site is designated for its geological value and is isolated from the site by Clitheroe.

- Amphibia
- Aves
- Chiroptera
- Meles meles
- Arvicola amphibius
- Lepus europaeus

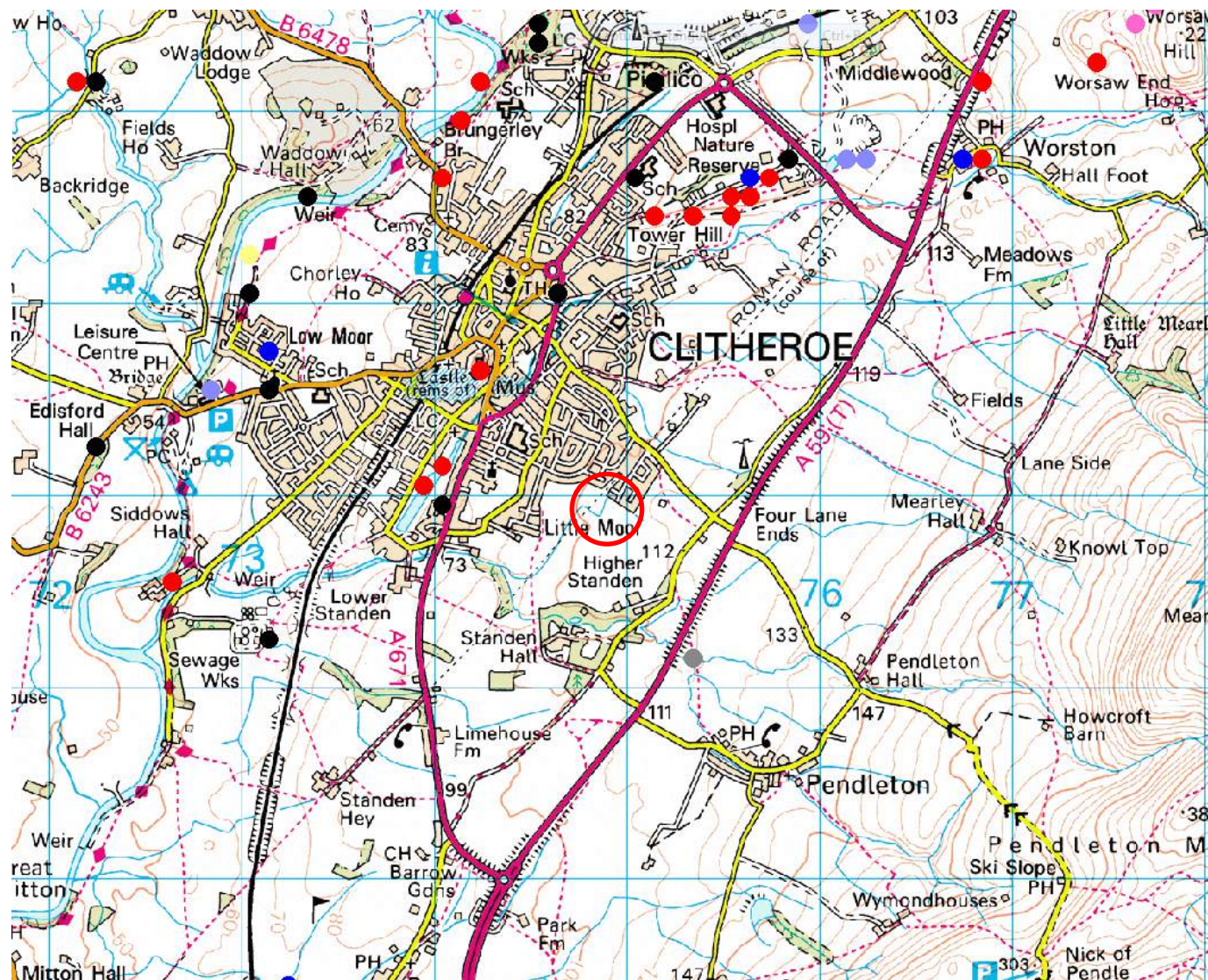


Figure 2 Notable species records, site location is outlined red.

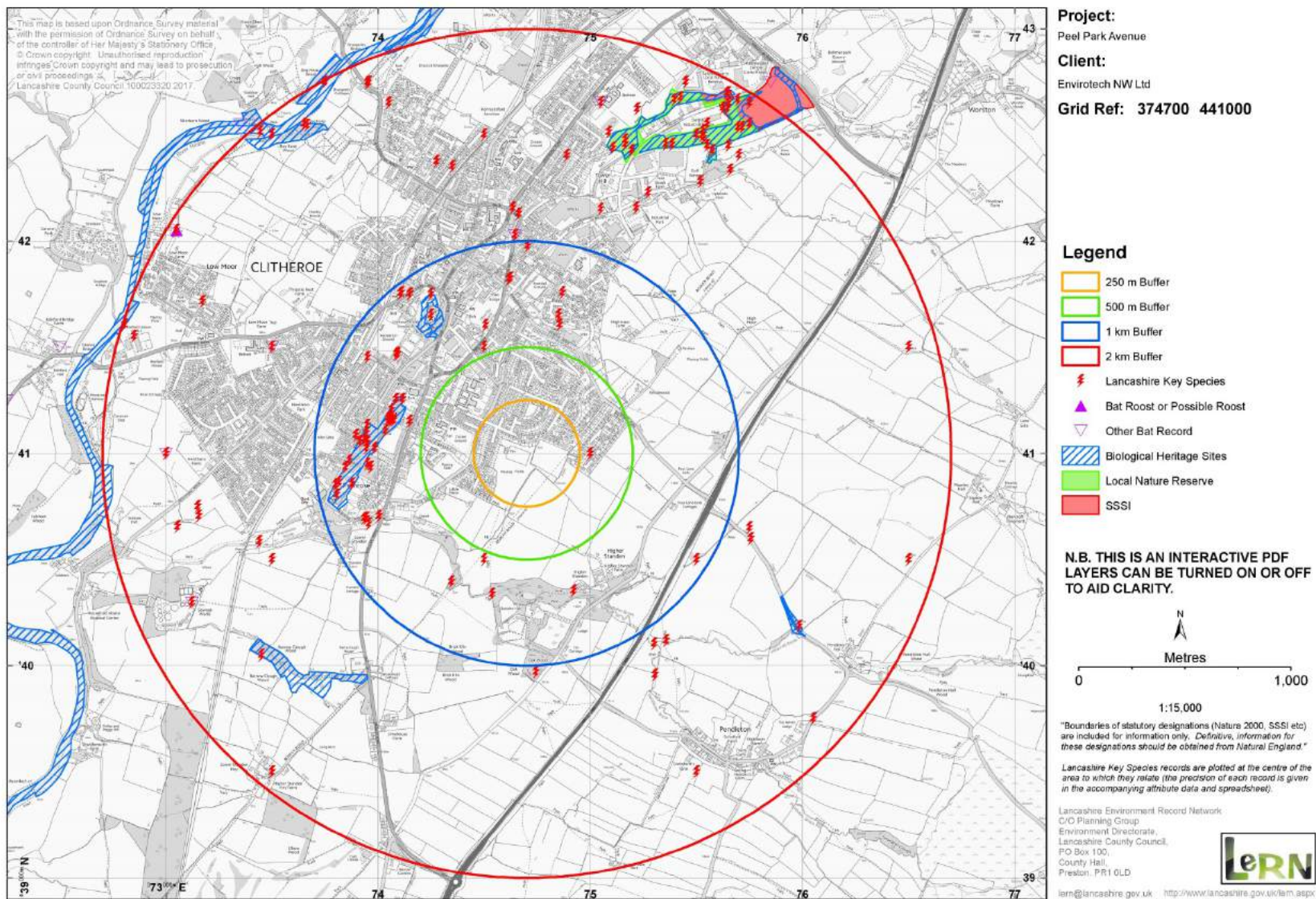


Figure 3 Non-statutory sites 2km buffer.

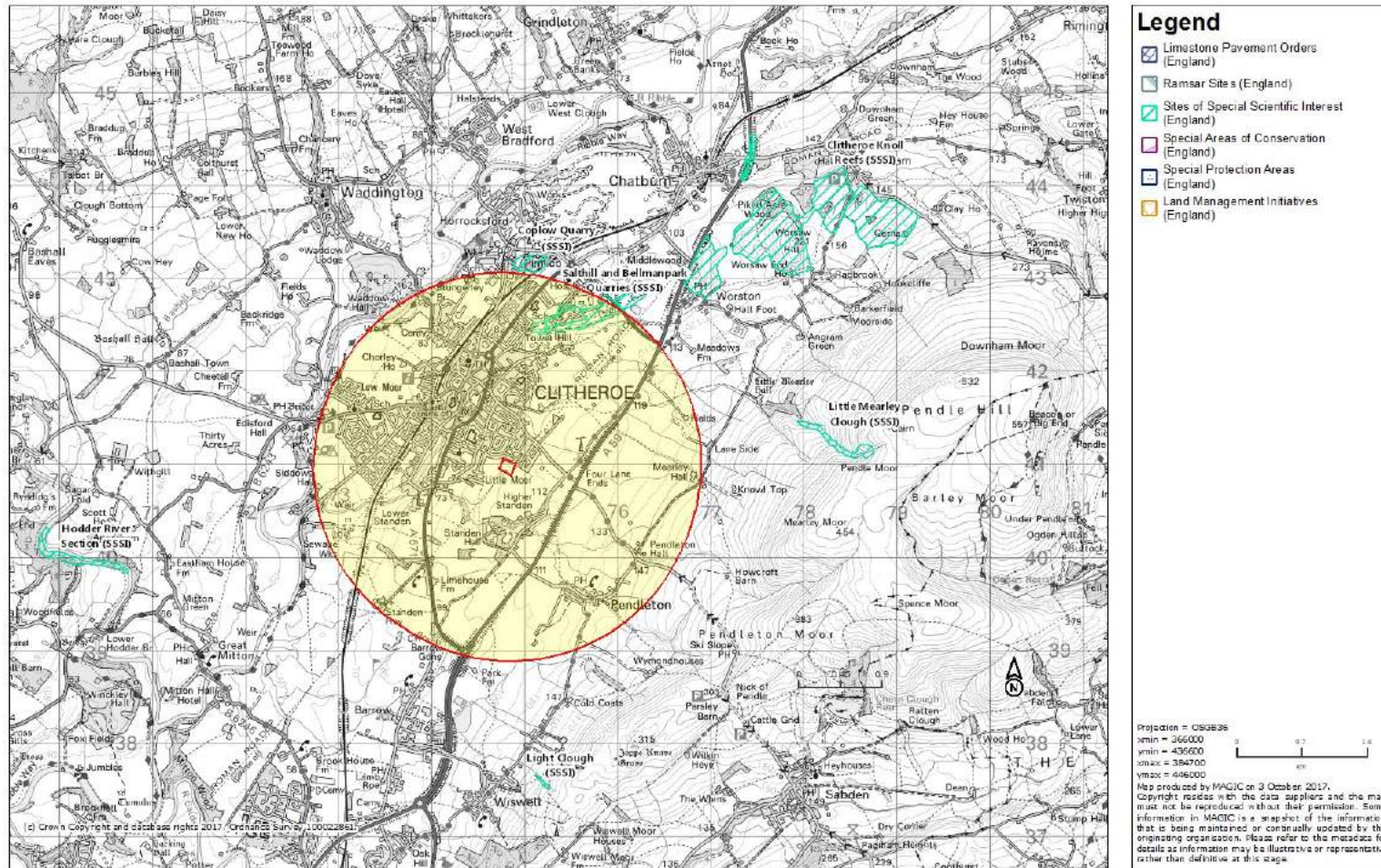


Figure 4 Statutory designated sites 2km buffer.

6. PHASE 1 SURVEY RESULTS

6.1 *Habitat Results*

6.1.1 The site is a field of species poor semi-improved grassland bound to the South, East and West by tree lines and hedgerows and abutting residential houses and associated gardens to the north. Semi-improved grassland extends to the South and East of the site and amenity grassland to the West.

6.1.2 See Figure 5 for the Phase 1 Habitat Plan and Table 1 for the descriptive Botanical and Faunal Target Notes, hereafter referred to as BTN and FTN.

Target Note	Description	Comment
BTN1	Poor semi-improved grassland	The majority of the site is vegetated by species poor semi-improved grassland. Species present are indicative of high disturbance levels and grazing pressures and include creeping buttercup (<i>Ranunculus repens</i>), perennial ryegrass (<i>Lolium perenne</i>), Yorkshire fog (<i>Holcus lanatus</i>) creeping thistle (<i>Cirsium arvense</i>), nettle (<i>Urtica dioica</i>), cocksfoot (<i>Dactylus glomerata</i>), red clover (<i>Trifolium pratense</i>) and meadowsweet (<i>Filipendula ulmaria</i>).
BTN2	Other tall herb/ fern - ruderal	Tall ruderal species grow in the ecotones between grassland and the site boundaries. Species present in these areas include false oat grass (<i>Arrhenatherum elatius</i>), bramble (<i>Rubus fruticosus</i>) and nettle.
BTN3	Hedgerow 1 - West boundary	An unmanaged former hedgerow now succeeding into a line of trees includes several semi-mature ash (<i>Fraxinus excelsior</i>) individuals alongside hawthorn (<i>Crataegus monogyna</i>), blackthorn (<i>Prunus spinosa</i>), elm (<i>Ulmus</i> sp.) and elder (<i>Sambucus nigra</i>).
BTN4	Hedgerow 2 - South boundary	As with Hedgerow 1 there has been no management of this hedger in recent year. As such it is becoming a line of trees and the density of its structure has reduced. Semi-mature ash is again frequent with a single mature ash also occurring. Hawthorn, elm, dog rose (<i>Rosa canina</i>), elder and blackthorn also occur in its length. There are no notable species listed on the hedgerow regulations assessment present at the base of this hedgerow, likely due to past grazing pressures. Nettle is instead frequent. A parallel hedgerow runs to the South of Hedgerow 2.
BTN5	Hedgerow 3 - East boundary	A third hedgerow succeeding to a line of trees bounds the site to the East. A ditch runs along the base of this hedgerow but no standing water was present at the time of the survey despite recent rainfall. Species present within the length of the hedge are elm, ash, hawthorn, blackthorn, dog rose, elder and a small amount of holly. Again, no notable species were present in the ground flora of the hedge at the time of the survey.
BTN6	Gardens	Gardens about the site to the North. The North site boundary is there for a mosaic of heavily managed beech or hawthorn hedgerow and sections of fencing.
FTN1	Birds	Although they may support low numbers, the hedgerows on site are of insufficient density that they are likely to support large numbers of nesting birds. No evidence of use by nesting birds was witnessed at the time of the survey.

FTN2	Bats	Trees on the site and its boundaries were assessed for their potential to be used by roosting bats. No highly suitable potential bat roost sites were seen in the tree on site at the time of the survey. The building to be demolished has negligible potential for use by bats.
Table 1 <i>Details of Botanical and Faunal Target Notes.</i>		



	Species poor grassland covers the majority of the site. Residential houses and associated gardens abut the site to the North.
	Tree lines bound the site to the south, east and West.
	Tree lines are structurally poor and trees present are generally semi-mature.
Table 2 Photographs	

6.2 Vegetation

- 6.2.1 Details of the plant species found on site are included in the target notes. Species recorded are all commonly occurring and undoubtedly occur elsewhere in similar habitats in the local area.
- 6.2.2 The poor semi-improved grassland has a very low species diversity and ecological value. Whilst the assemblage of species within it is higher than improved pasture, the species are all indicative of regular grazing and disturbance, this habitat does not constitute a BAP habitat.
- 6.2.3 The intact hedges bounding the site are species poor and contain a low diversity of woody plant species but all hedgerows are a UK BAP habitat. They should be retained in any proposed scheme and where lengths need to be lost, they should be transplanted or new hedges planted as compensation.
- 6.2.4 None of the hedgerows are classified as important under the Hedgerow Regulations (1997). All are bounding the curtilage of a dwelling or are less than 20m in length.
- 6.2.5 Trees within the site include several semi-mature and two mature ash trees. These trees do not form woodland but should as far as possible be retained in the proposed scheme. They provide some shelter at connectivity of the site with surrounding habitats.
- 6.2.6 There is no evidence of Japanese knotweed, giant hogweed or Himalayan balsam on the site. No other invasive or notable weed species listed on Schedule 9 (Section 14) of the Wildlife and Countryside Act (1981) (as amended) was identified within the site or adjacent land.

6.3 Amphibian

- 6.3.1 There are 13 records for amphibians within 2km of the site on the datasets searched. Species recorded are palmate newt (*Lissotriton helveticus*), smooth newt (*L. vulgaris*) and common toad (*Bufa bufa*).
- 6.3.2 There is no standing water on site, or shown on OS mapping or aerial photography within 250m of site boundaries. A spring and drain are identified around site boundaries on OS mapping but these were not seen to contain standing water at the time of the survey. Vegetation present in these areas was also not indicative of standing water being regularly present.
- 6.3.3 The boundary hedgerows could be utilised as refuges and/or hibernacula but the core development area has a low value to amphibians being open grassland.
- 6.3.4 Structural diversity at ground level across the site is very poor. There are no areas with log, rubble piles or compost heaps which would be particularly favourable to amphibians.

- 6.3.5 The proposed development will not result in the permanent loss of or a substantial negative effect on any waterbodies. Potential will be maintained on site for amphibians to seek refuge or commute.
- 6.3.6 Common toad (*Bufo bufo*) are UK BAP species, whilst these are not known to occur locally, the potential presence of this or other species, which are less habitat specific than great crested newt, should be considered. As such precautionary mitigation would be appropriate in respect of construction activities.

6.4 Badger

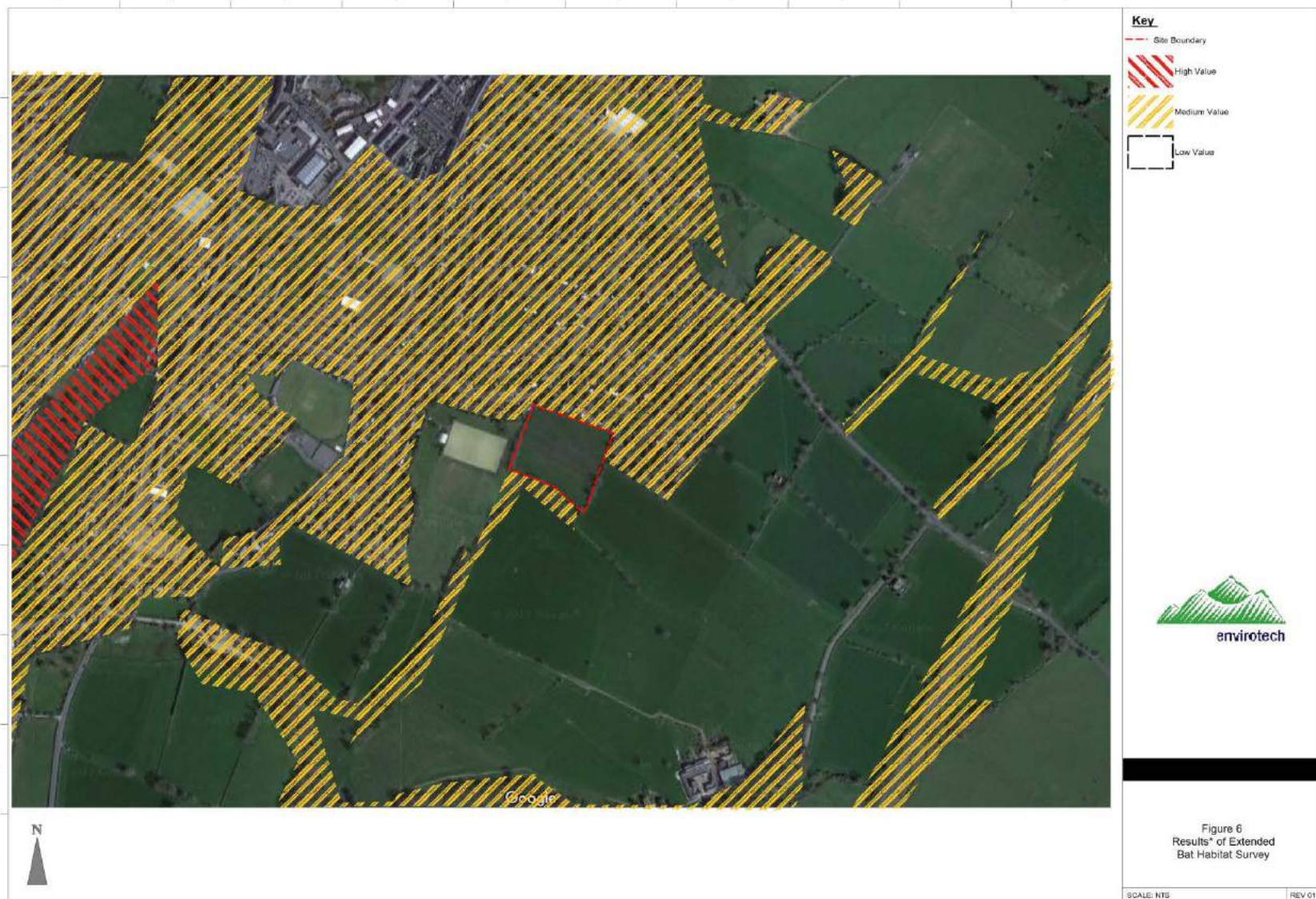
- 6.4.1 There are no records of badgers occur within 2km of the site on the datasets searched.
- 6.4.2 Badger setts do not occur on site and a lack of feeding signs or runs across the site would suggest that they do not occur within 30m of site boundaries.
- 6.4.3 The proposed development will not impact on any existing badger runs or setts. The porosity of the surrounding fields to the passage of badgers will not be affected.

6.5 Bats

- 6.5.1 There are 15 records of *Pipistrelle* spp. bats within 2km of the site. No other bat species are recorded within this search range and on the datasets searched.
- 6.5.2 The site offers a low potential for bats to forage. The grassland is open and species poor but scattered trees and hedgerows provide some shelter suitable for bats to forage in. Whilst these areas of the site are the most structurally diverse they are not considered exceptional in the local area. More extensive areas of medium and high quality habitat occur locally, including the gardens, waterbodies and existing residential dwellings adjacent (Figure 6).
- 6.5.3 It is not considered there would be significant degradation of foraging habitat as a result of the proposal so long as the hedgerows and trees are retained and or their loss is compensated for in any landscaping scheme.
- 6.5.4 Trees within and around the site perimeter were also assessed in accordance with Collins ed. (2016) and assigned a risk category. All of the trees on site were category 2 (low) or category 3 (negligible) risk. The approximate location of Category 2 trees is indicated in Figure 7. No indications of roosting or highly suitable roost sites were located within the trees. All of the trees could be adequately inspected. Risk categories from Hundt (2012) and the requirement for mitigation for each tree category are shown on Figure 8.
- 6.5.5 The anabat static bat detector was positioned in the tree line on the West site boundary. This recorded passes of noctule, brown long-eared and common pipistrelle bats. A peak count of four noctule, six common pipistrelle and one brown long-eared bat pass were recorded on the 28th September 2017. Results recorded by the detector following analysis using Kaleidoscope 3.1.8 are shown in Table 3.

KALEIDOSCOPE 3.1.8			
Bats of Europe 3.1.3			
S/A:+1	NYNO	PIPI	PLAUR
Total	8	17	2
20170925	1	2	1
20170926	2	2	
20170928	4	6	1
20170929		3	
20170930	1	4	
20171001			
Table 3 - Anabat Results			

- 6.5.6 The building on site to be demolished was assessed internally and externally. It has negligible potential for use by bats. A full bat report on this building is appended.
- 6.5.7 We consider bat species are highly unlikely to rely on the site for feeding or roosting but will occur in the local area.





Key
--- Site Boundary
● BCT Tree Risk Category



Figure 7
Approximate location of
BCT Category 2 Trees

SCALE: 1cm = 10M

REV 01

Tree category and description	Stage 1 Initial survey requirements	Stage 2 Further measures to inform proposed mitigation	Stage 3 Likely mitigation
Known or confirmed roost	Follow SNCO guidance and these guidelines wherever possible, to establish the extent to which bats use the site. This is particularly important for roosts of high risk species and/or roosts of district or higher importance and above		The tree can be felled only under EPS licence following the installation of equivalent habitats as a replacement.
Category 1* Trees with multiple, highly suitable features capable of supporting larger roosts	Tree identified on a map and on the ground. Further assessment to provide a best expert judgement on the likely use of the roost, numbers and species of bat, by analysis of droppings or other field evidence. <i>A consultant ecologist is required</i>	Avoid disturbance to trees, where possible. Further dusk and pre-dawn survey to establish more accurately the presence, species, numbers of bats present and the type of roost, and to inform the requirements for mitigation if felling is required.	Felling would be undertaken taking reasonable avoidance measures ³ such as 'soft felling' to minimise the risk of harm to individual bats.
Category 1 Trees with definite bat potential, supporting fewer suitable features than category 1* trees or with potential for use by single bats	Tree identified on a map and on the ground. Further assessed to provide a best expert judgement on the potential use of suitable cavities, based on the habitat preferences of bats. <i>A consultant ecologist required</i>	Avoid disturbance to trees, where possible. More detailed, off the ground visual assessment. Further dusk and pre-dawn survey to establish the presence of bats, and if present, the species and numbers of bats and type of roost, to inform the requirements for mitigation if felling is required.	Trees with confirmed roosts following further survey are upgraded to Category 1* and felled under licence as above. Trees with no confirmed roosts may be downgraded to Category 2 dependent on survey findings
Category 2 Trees with no obvious potential, although the tree is of a size and age that elevated surveys may result in cracks or crevices being found; or the tree supports some features which may have limited potential to support bats.	None. <i>A consultant ecologist is unlikely to be required</i>	Avoid disturbance to trees, where possible. No further surveys.	Trees may be felled taking reasonable avoidance measures. Stop works and seek advice in the event bats are found, in order to comply with relevant legislation.
Category 3 Trees with no potential to support bats	None. <i>A consultant ecologist is not required unless new evidence is found</i>	None.	No mitigation for bats required.

Figure 8 Tree risk categories from Hundt (2012).

6.7 Birds

- 6.7.1 There are 198 records of birds within 2km of the site.
- 6.7.2 The intact hedgerows bounding the site offer potential habitat for low numbers of feeding and nesting birds. The poor semi-improved grassland has a low potential for use by nesting birds.
- 6.7.3 There were no rot holes or cracks in the trees within the site boundary which would support tree hole nesting species such as woodpeckers.
- 6.7.4 The habitat on site is not considered to be of local significance, habitats present are well represented in the local area. The impact on nesting birds is therefore considered likely to be minor.

6.8 Brown Hare

- 6.8.1 Brown hare are a UK BAP priority species. There are four records of brown hares within 2km of the site.
- 6.8.2 No indication of brown hares was recorded on the site.
- 6.8.3 The site boundary has some potential for brown hares to create forms but use of the site is likely to be limited due to its enclosed nature and regular human presence.
- 6.8.4 A risk assessment of the site in respect of its future potential for and value to brown hares could be adequately made. We consider the risk to brown hares is very low.

6.9 Invertebrates

- 6.9.1 Numerous notable invertebrates have been recorded within 2km of the site.
- 6.9.2 No deadwood or vegetation on site was recorded which would provide an important resource for invertebrates in the local area.
- 6.9.3 The plant species assemblages found on site are not representative of those found in sites which are designated for their invertebrate interest.
- 6.9.4 Given the poor quality habitats contained within the site in comparison to the wider area, it is not considered that this site is of any local significance for invertebrates.
- 6.9.5 Trees on the site boundaries contain comparatively little rotten wood in their canopies.
- 6.9.6 Semi-Improved pasture, tall ruderal and scrub vegetation has some value to species such as common butterflies but this is not considered to be locally significant.
- 6.9.7 Impacts on the species are considered likely to be negligible, post development domestic gardens will maintain the habitat diversity at the site.

6.10 Reptiles

6.10.1 There are no records for reptiles within 2km of the site.

6.10.2 The majority of the site has a very low value to reptiles being devoid of significant ground cover and lacking any areas highly suitable for basking. There are no areas of the core development area which would be particularly favourable to reptiles.

6.10.3 No indication of reptiles was recorded at the site.

6.10.4 As a consequence, precautionary mitigation would be appropriate in respect of construction activities so as to ensure reasonable avoidance measures are taken to avoid the killing or injury of these species.

6.11 Other

6.11.1 The boundary hedgerows are species poor and provide little potential for use by hedgehog (*Erinaceus europaeus*). Fragmentation of habitat locally and existing land use do not provide optimal conditions for the free passage of this species across the site and slugs and snails are likely to occur only at very low numbers.

6.12 Statutory and Non-Statutory Sites

Direct Impacts:

6.12.1 There are no statutory designated sites which are connected to the site such that site development would directly affect the dispersal of species between them or directly impact upon their integrity.

6.12.2 The habitats on site do not represent or are linked to those found in any of the statutory sites locally.

Indirect Impacts:

6.12.3 There are no statutory or non-statutory designated sites which are connected to the site such that site development would indirectly affect the dispersal of species between them or indirectly impact upon their integrity.

7. MITIGATION/RECOMMENDATIONS

7.1 *Compensatory planting and habitat enhancement*

- 7.1.1 The roots of trees on the site and its boundaries should be adequately protected during work in accordance with industry standards. Mature trees should as far as possible be retained in the scheme.
- 7.1.2 The landscaping scheme should utilise plants which are native and wildlife friendly. In particular night flowering species would be beneficial to bats. Wildflower seed could be used to plant verges to enhance the ecological value of the site and continuity between the site and the wider area.
- 7.1.3 Hedgerows around the site should be retained or improved where possible. Any lengths of intact hedgerow to be removed to facilitate development should be transplanted and or replanted in order that there is no net negative impact on this BAP habitat due to development. The roots of hedgerow plants/trees should be adequately protected during development from compaction/ground disturbance.
- 7.1.4 Where hedgerows must be removed to facilitate development new tree, shrub and hedgerow planting should be incorporated into the scheme to maintain potential for species to commute and seek refuge at the site.

7.2 *Amphibians*

- 7.2.1 There is no requirement for specific mitigation for these species. However, as a precautionary measure, in the unlikely event that any signs of any amphibian activity is subsequently found, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.
- 7.2.2 In order to further minimise impacts on amphibians the following points should also be followed.
 - All work must take place during daylight hours as amphibians are more likely to be commuting over night and this will ensure the risk to any amphibians commuting through the site will be minimised.
 - During the development, measures should be put in place to discourage amphibians from using the development area, the creation of any piles of earth, materials and rubble which could form potential artificial hibernacula and refuge should be avoided at all times. It is recommended that any spoil or rubble will be removed immediately to skips, or on hard standing or short grass. This will ensure that no potential amphibian hibernation or resting sites are created.
 - The storage of all loose materials must be palletised or similar so they are off the ground whenever possible.
 - Should any trenches and excavations be required, an escape route for animals that enter the trench must be provided, especially if left open overnight. Ramps should

be no greater than of 45 degrees in angle. Ideally, any holes should be securely covered. This will ensure amphibians are not trapped during work.

- All excavations left open overnight or longer should be checked for animals prior to the continuation of works or infilling. Back filling should be completed immediately after any excavations, ideally back filling as an on-going process to the work in hand.

7.3 Badger

7.3.1 Badger setts are known to occur within 2km of the site but in order to minimise impacts on badgers passing over the site the following points should also be followed.

- All work must take place during daylight hours as badgers are more likely to be commuting over the site at night and this will ensure the risk to any badgers passing through the site will be minimised.
- Should any trenches and excavations be required, an escape route for animals that enter the trench must be provided, especially if left open overnight. Ramps should be no greater than of 45 degrees in angle. Ideally, any holes should be securely covered. This will ensure badgers are not trapped during work.
- All excavations left open overnight or longer should be checked for animals prior to the continuation of works or infilling. Back filling should be completed immediately after any excavations, ideally back filling as an on-going process to the work in hand.

7.4 Bats

7.4.1 Work at night should be restricted, new planting within the site should enhance structural diversity and light spill onto the boundary should be minimised.

7.4.2 New roosting provision for crevice dwelling bats could be incorporated into the buildings on site or bat boxes could be erected in retained trees.

7.4.3 Overall it is considered there is more than sufficient scope for mitigation and compensation at the site such that there will be no adverse impact on the favourable conservation status of bats affected by the proposal.

7.5 Birds

7.5.1 Birds are considered likely to nest in low numbers in hedgerows around the site.

7.5.2 Any vegetation to be trimmed or cleared should be checked for nesting birds before it is removed. Ideally this should occur outside the bird nesting period March-September. If vegetation clearance is to occur in the March-September period a check for nesting birds should be conducted first by a suitably qualified individual.

7.5.3 New planting within the site and the retention of trees and shrubs on the site boundary will maintain the ecological functionality of the site for breeding birds.

- 7.5.4 If nesting birds are found at the site all site works shall cease and further ecological advice shall be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

7.6 *Brown Hares*

- 7.6.1 There is no requirement for specific mitigation for this species. However, as a precautionary measure, in the unlikely event that any signs of any brown hare activity is subsequently found, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.
- 7.6.2 The points in respect of not working at night and leaving open trenches with means of escape detailed for badgers are also applicable to this species.

7.7 *Invertebrates*

- 7.7.1 Landscaping should include native or wildlife friendly species including night flowering plants.
- 7.7.2 Contaminants should not be allowed to enter substrates or adjacent waterbodies during work. To effect this, spill kits should be provided on site. Re-fuelling of all plant and machinery should be undertaken away from open drains and water courses. Drip trays should be used under static machinery.

7.8 *Reptiles*

- 7.8.1 There is no requirement for specific mitigation for these species. However, as a precautionary measure, in the unlikely event that any signs of any reptile activity is subsequently found, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.
- 7.8.2 The points in respect of not leaving open trenches without means of escape detailed for badgers are also applicable to these species.

8. CONCLUSION

- 8.1.1 Ecological surveys, site appraisals and impact assessments were carried out with respect to land comprising poor semi-improved grassland bound by unmanaged hedgerows off Peel Park Road, Clitheroe. It is proposed new houses will be constructed on the site.
- 8.1.2 Amphibians, bats, birds, brown hares and invertebrates are known to occur in the local area, there was however no conclusive evidence of any specifically protected species regularly occurring on the site or the surrounding areas which would be negatively affected by site development following the mitigation proposed.
- 8.1.3 The vegetation to be cleared has a low ecological significance in the local area; the trees close to but outside the development area are generally of low quality.
- 8.1.4 The protection of trees on the site boundary and landscaping will promote structural diversity in both the canopy and at ground level and will encourage a wider variety of wildlife to use the site than already occurs.
- 8.1.5 Contractors will be observant for protected species and all nesting birds. Should any species be found during construction, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

9. REFERENCES

Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good practice guidelines (3rd edn). The Bat Conservation Trust, London.

Hundt, L. (2012) Bat Surveys: Good Practice Guidelines (Second Edition). BCT, London.

Joint Nature Conservation Committee (2010). Handbook for Phase 1 Habitat Survey - a Technique for Environmental Audit. Reprinted by JNCC, Peterborough. - See more at: <http://www.cieem.net/habitats-general#sthash.mJYlrP8L.dpuf>

Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). *Herpetological Journal* 10 (4), 143-155.

Stace, C. (1991). *New Flora of the British Isles*. Cambridge University Press.

Hedge		Feature		
1	Yes	Yes	Yes	Yes
2	Yes	Yes	Yes	Yes
3	Yes	Yes	Yes	Yes
No = Automatic failure				
ARCHAEOLOGY AND HISTORY				
Archaeological feature which is included in the schedule of monuments				
Situated wholly or partly within an archaeological site				
Boundary of a pre-1600 AD estate				
Integral part of a field system				
Protected species records				
FEATURES				
Bank or wall				
Gaps less than 10%				
Standard trees				
Ditch				
Parallel hedge				
Footpath/ Bridleway				
Connection points				
Woody species				
Average ground flora species				
HEDGE CLASSIFIED AS IMPORTANT				
No*				
No*				
No*				
Yes = Automatic pass				
7 woody species or 6 woody species + 3 features or 5 woody species + 4 features or highway + 4 woody species and 2 features				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				
1				
3.5				
0				
No				
No				
No				

* Historic and archaeological records have not been checked for this site.

10. BAT SURVEY



envirotech

**Ecological Consultants
Environmental and Rural Chartered Surveyors**

**BAT SURVEY AT
30 Peel Park Avenue
Clitheroe**



Tel: 015395 61894
Email: info@envtech.co.uk
Web: www.envtech.co.uk
Envirotech NW Ltd

Directors: The Stables, Back Lane, Hale, Milnthorpe, Cumbria, LA7 7BL
A. Gardner BSc (Hons), MSc, CEnv, MCIEEM, MRICS, Dip NDEA
H. Gardner BSc (Hons), MSc, CEnv, MRICS
Registered in England and Wales. Company Registration Number 5028111

Professional responsibility

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

Accuracy of report

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

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

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

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

Quality and Environmental Assurance

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

Signed



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

Author	Emma Wainwright	Date	17/10/2017
Checked by	Andrew Gardner	Date	19/10/2017
Report Version	1		
Field data entered	☒		
Report Reference	4228		

Contents

1. EXECUTIVE SUMMARY	40
2. INTRODUCTION	41
2.1 Site Description	41
2.2 Proposed Works	43
2.3 Aims of Study	43
3. METHODOLOGY	44
3.1 Bats	44
3.1.1 Rationale of Survey	44
3.1.2 Desk Study.....	45
3.1.3 Field Survey	45
3.1.4 Timing.....	47
4. DEFINITIONS.....	50
5. RESULTS	53
5.1 Desk Study	53
5.2 Field Survey.....	57
5.2.1 Habitat Description.....	57
5.2.2 Bat Roost Survey	57
6. CONSTRAINTS	59
7. INTERPRETATION	60
7.1 Presence / absence.....	60
7.2 Population size class assessment	60
7.3 Site status assessment	60
8. POTENTIAL IMPACTS	61
8.1 Bat Roosts.....	61
8.1.1 Pre and mid-activity impacts	61
8.1.2 Long term impacts	62
8.1.3 Post activity interference impacts.....	62
8.1.4 Other impacts	62
8.1.5 Bat Foraging and Commuting Habitat	62
9. RECOMMENDATIONS AND MITIGATION.....	63
9.1 Further Survey.....	63
9.2 Mitigation Measures	63
9.2.1 Bats.....	63
10. MITIGATION SUMMARY	65
11. REFERENCES.....	66
APPENDIX 1 PHOTOGRAPHS	67

1. EXECUTIVE SUMMARY

It is understood that the residential dwelling at 30 Peel Park Avenue will be demolished to allow a new residential development to be undertaken.

A daytime inspection was undertaken on the 17th October 2017. This involved a close inspection of the building for signs of use by bats both internally and externally.

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

The habitat around the site offers a low potential for foraging being developed and lacking vegetative diversity. There is poor connectivity between the site and higher quality foraging areas.

The building has negligible potential for use by bats. It is remarkable well sealed.

No indications of use of the site by bats were found during the survey.

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

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

2. INTRODUCTION

2.1 Site Description

The site lies at the South-east extent of Clitheroe. The surveyed building is a concrete block residential dwelling, rendered externally and under a pitched, tiled roof.

There is fragmented woodland in the local area but the site is in an urban location at SD 74752 41063, Figure 1 and 2.



Figure 1 Ordnance Survey map of site location, circled red.



2.2 Proposed Works

It is proposed that the building is demolished. There will be significant internal and external alteration to the areas of the building affected.

The timing of work is unknown.

2.3 Aims of Study

To ensure that the proposed development does not affect any bat species which are listed under the Conservation (Natural Habitats, &c) Regulations (2010) and or the Wildlife and Countryside Act (1981) (as amended) the survey will:-

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

3. METHODOLOGY

3.1 Bats

3.1.1 Rationale of Survey

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

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

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

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

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

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

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

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

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

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

3.1.2 Desk Study

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

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

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

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

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

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

3.1.3 Field Survey

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

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

Key point 8: A thorough inspection of the walls and eaves was undertaken using a torch and short focus binoculars to locate potential bat roosts. Gaps and cracks in the walls or under

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

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

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

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

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

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

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

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

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

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

further surveys may be needed and these should be proportionate to the circumstances (see Section 2.2.5).

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

3.1.4 Timing

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

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

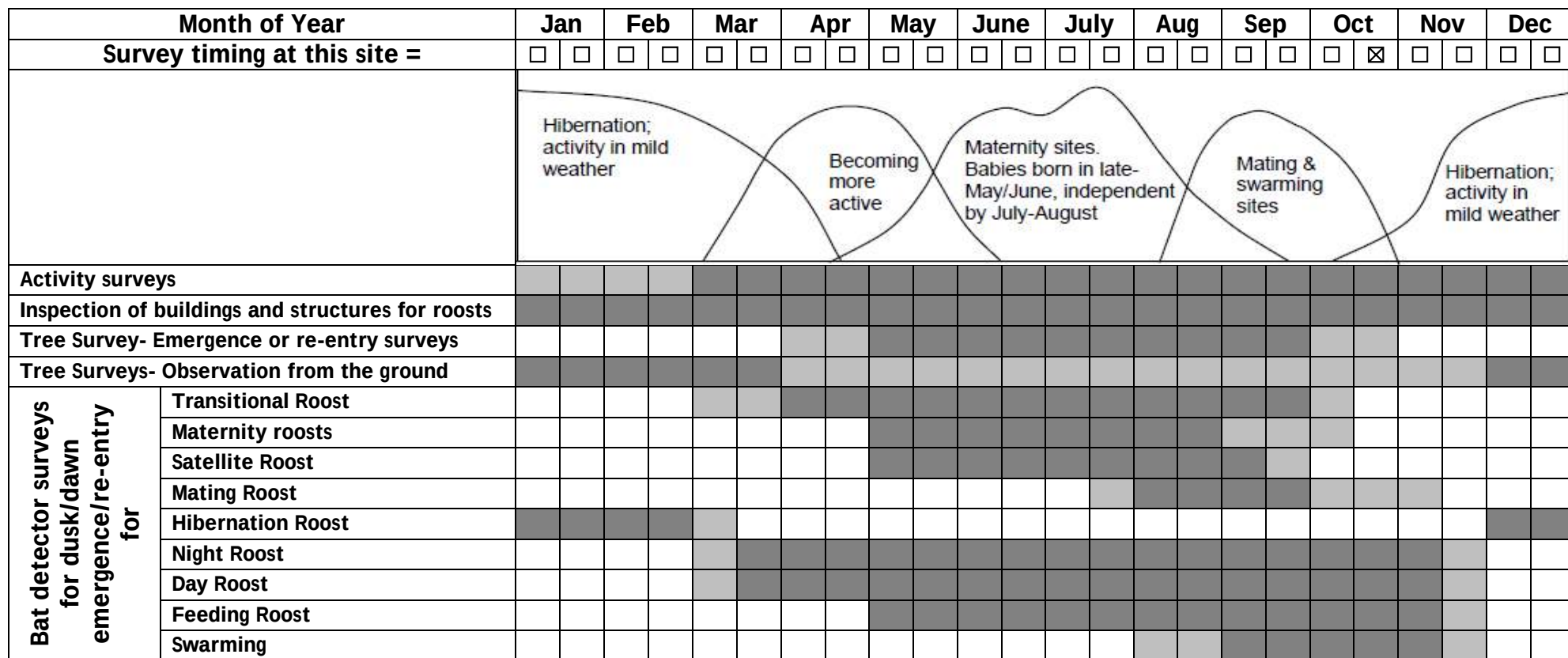


Figure 3 Survey timing in the bat year from Mitchell-Jones (2004).

Date of visit		16 th April 2016	Notes
Weather conditions	Cloud	50%	1
	Wind	Nil	1
	Rain	Nil	1
	Temperature	12°C	1
Surveyors		EW	

Table 1 *Survey dates and times.*

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

Surveyors

1. (EW) Miss Emma Wainwright BSc (Hons) Grad CIEEM
Unlicensed surveyor with four years bat scoping and emergence survey experience
Accredited Agent on Natural England Bat Class Licence (Level 2)

4. DEFINITIONS

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

Building

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

Built structure

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

Underground site

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

Roost (breeding site / resting place)

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

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

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

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

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

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

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

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

“(54) It thus follows from Article 12(1)(d) that such breeding sites and resting places also need to be protected when they are not being used, but where there is a reasonably high probability that the species concerned will return to these sites and places. If for example a certain cave is used every year by a number of bats for hibernation (because the species has the habit of returning to the same winter roost every year), the functionality of this cave as a hibernating site should be protected in summer as well so that the bats can re-use it in winter. On the other hand, if a certain cave is used only occasionally for breeding or resting purposes, it is very likely that the site does not qualify as a breeding site or resting place.”

(59) Resting places: a definition

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

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

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

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

Summary

“Breeding site”

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

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

Resting place

Resting places are defined here as the areas essential to sustain bats when they are not active. Resting places that are used regularly, either within or between years, must be

protected even when not occupied. Resting places essential for survival include structures and habitat features required for:

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

5. RESULTS

5.1 Desk Study

A search of the Envirotech dataset returned 15 records of *Pipistrelle* spp. bats within 2km of the site. No other bat species are recorded within this search range on the datasets searched.

Records are shown on Figure 4.

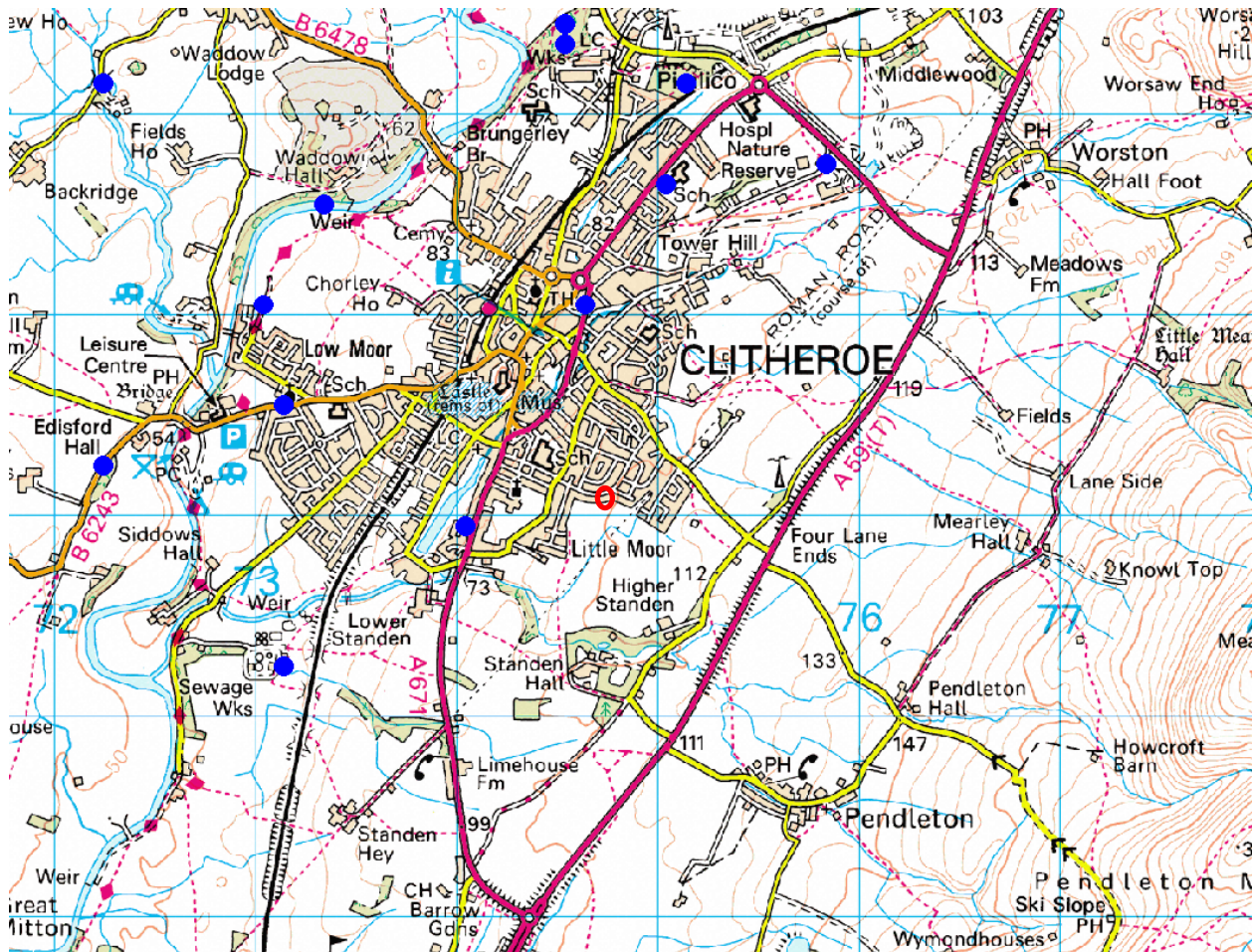


Figure 4 Bat records shown in blue, site location circled red.

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

School playing fields are likely to offer negligible foraging potential for bats.

Residential houses and associated gardens provide low potential bat foraging and roosting opportunities.



Tree lines provide weak bat commuting routes across the landscape.

Pasture fields are open and exposed. They are unlikely to be attractive to bats.

Key
--- Site Boundary



Figure 5
Habitat

SCALE: NTS

REV 01

From the pre-existing records, a review of aerial photography, a field assessment of the area adjacent to the site and the experience of the surveyor, bat species which may occur on or adjacent to the site and the rationale for this decision are detailed in Table 2. This assessment does not look at the roosting potential of the site. The assessment of bats which are indicated as potentially occurring on the site or local area is based on the initial largely desk based scoping survey. Additional site specific assessment is provided later in this report. This assessment does however allow for the scope of site survey to be refined.

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

Table 2 Bat species whose geographical range extends to the region in which the site is located. *Typically but not exclusively.

5.2 Field Survey

5.2.1 Habitat Description

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

It is judged that the most suitable commuting route for bats into and out of the site is the tree line to the South. The surrounding habitat is considered to have low foraging potential.

The site is not considered to offer optimal foraging opportunities. There is limited vegetative diversity around the building.

5.2.2 Bat Roost Survey

5.2.2.1 General description

A concrete block rendered residential dwelling under a pitched, tiled roof.

5.2.2.2 External walls/ Eaves

The walls of the building are constructed from concrete block and are rendered externally. They were found to be in excellent condition, offering no potential bat roost sites. Ventilation bricks are present on the gable walls. When viewed from within the roof void these were found to be cobwebbed and showed no evidence of use by bats.

Soffit and fascia boards are present around the building. These are also in extremely good condition and are entirely sealed both with each other and with the walls.

The external walls offer negligible potential for bats to roost and showed no evidence of such use.

5.2.2.3 Roof

The building is roofed with concrete tiles which are in good condition. There are no broken or raised tiles. The ridge line and roof verges are well mortared and no evidence of use by bats could be found in these areas.

5.2.2.4 Internal walls

The internal walls of the house are unavailable to roosting bats as they form part of the residence. Concrete block wall tops visible within the void are entirely sealed and do not offer potential bat roost sites.

5.2.2.5 Roof Voids/ Roof structure

The timber beams in the roof were found to be in excellent condition with no rot, splits or gaps suitable for roosting or hibernating bats. There was a good covering of cobwebs along the ridge line, and no indications of use by bats could be found.

5.2.2.6 Summary

To summarise the building is extremely well sealed. The walls and roof are in excellent condition. The eaves lines, roof verges and ridge line are well sealed. No evidence of use of the building by bats could be found.

6. CONSTRAINTS

We judge that the site survey is sufficient to address the risk to bats at the site based on the species present in the local area, construction of the buildings and nature of the proposed work. The level of survey effort accords with the recommendations of Collins ed. (2016). The reasonable probable use of the site by bats has been determined.

7. INTERPRETATION

7.1 *Presence / absence*

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

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

7.2 *Population size class assessment*

From a review of adjacent habitat the maximum number of bats that are likely to use an area within 250m of the site is of the magnitude 1-9 (small).

7.3 *Site status assessment*

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

8. POTENTIAL IMPACTS

8.1 *Bat Roosts*

8.1.1 *Pre and mid-activity impacts*

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

8.1.1.1 *Maternity Roosts*

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

8.1.1.2 *Satellite Roosts*

We do not consider that satellite roosts will be affected by the proposal. We consider the local environs are unlikely to support linked maternity roosts. There was no indication of elevated use of the site such as would occur if this roost type were present. **We judge there is no risk to a satellite roost at this site from the proposed work.**

8.1.1.3 *Transitional and day roost sites*

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

8.1.1.4 *Night Roosts*

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

8.1.1.5 *Feeding roosts*

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

8.1.1.6 *Lek sites*

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

8.1.1.7 Hibernation

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

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

8.1.1.8 Swarming

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

8.1.1.9 Summary

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

8.1.2 Long term impacts

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

8.1.3 Post activity interference impacts

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

8.1.4 Other impacts

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

8.1.5 Bat Foraging and Commuting Habitat

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

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

9. RECOMMENDATIONS AND MITIGATION

9.1 Further Survey

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

9.2 Mitigation Measures

9.2.1 Bats

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

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

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

The site survey found no evidence of habitual use of the building by roosting bats in or between years, although there is a possibility of a low level of opportunistic use at some times of the year. The survey effort was sufficient to allow for an assessment of this to be made.

9.2.1.1 Bat Roosts

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

1. All contractors on the site will be made aware of the possible presence of bats prior to the commencement of work.
2. Contractors will be provided with the contact details of an appropriately qualified individual who can provide advice in relation to bats at any time during work. In the event that bats are found during work, unless the action has already been cleared by a suitably qualified individual, **all work will cease** and an appropriately qualified individual will be contacted for further advice.
3. Contractors will be observant during demolition work for bats which may use the building if new areas of the roof are exposed and left open overnight. Bats are opportunistic and may make use of gaps opened up during work overnight.

4. If it is necessary to remove a bat to avoid it being harmed, gloves should be worn. It should be carefully caught in a cardboard box and kept in the dark in a quiet place until it can be released at dusk near to where it was found, or moved to an undisturbed part of the building, with outside access, and placed in a location safe from predators.
5. **If bats or bat roosts are found during work, all work should cease.** The site will need to be re-assessed in regard to its use by bats. A Natural England licence may be required if continuing work is, on balance, likely to result in the disturbance, killing or injury of bats or the alteration, destruction or obstruction of roost site.
6. There is no need to restrict the timing of work. Use of the structure by bats is equally likely to occur at any time of the year but will be at low levels.

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

9.2.1.2 Mitigation for Foraging and Commuting Habitat

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

9.2.1.3 Requirement for Habitats Regulations (EPS) Licence

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

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

10. MITIGATION SUMMARY

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

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

11. REFERENCES

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

Altringham J, (2003). *British bats*. London: HarperCollins

Altringham J, (1996). *Bats and Behaviour*. Oxford University Press

Collins, J (ed) (2016). *Bat Surveys for Professional Ecologists- Good practice guidelines (3rd Edition)*

English Nature (2004). *Supplementary guidance note: surveying for bats following the publication of English Nature's national bat mitigation guidelines (January 2004)*. English Nature, Northumbria Team

Entwistle, A. C. *et al.* (2001). *Habitat Management for Bats*. JNCC

Greenaway, F. and A.M. Hutson (1990) *A Field Guide to British Bats*. London: Bruce Coleman Books.

Hundt, L (2012) *Bat Surveys: Good Practice Guidelines, 2nd edition*. Bat Conservation Trust

Loller, A and Schmiot-French, B (2002). *Captive care and medical reference for rehabilitation of insectivorous bats*. Bat World

Mitchell-Jones, A (2004) *Bat mitigation guidelines*. English Nature

Mitchell-Jones, A. J. & McLeish, A. P. (1999). *The Bat Workers' Manual*. JNCC

Neuweiller, G (2000). *The Biology of Bats*. Oxford University Press

R. E. Stebbings (1998). *The conservation of European Bats*. Christopher Helm

Russ, J. (1999). *The Bats of Britain and Ireland, Echolocation, Sound Analysis and Species Identification*. Alana Books

Swift, S. (1998). *Long-eared bats*. Cambridge University Press

APPENDIX 1 PHOTOGRAPHS

Photograph	Notes
	North Elevation Roof in good condition Walls well sealed
	South Elevation Soffit and fascia boards well sealed Roof, including lead flashing well sealed
	East Elevation Roof verge well sealed Ventilation brick



West Elevation

Roof verge well sealed

Walls well sealed



Internal

Ventilation brick

Modern timbers in good condition