# Elite Ecology

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## 2-4 Silk Street,

## Leek




# Bat and Bird Activity Survey

**July 2018**

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## 0. Executive Summary

0.1 This report has been prepared at the request of Mr Andy Hagan (Purchaser). It relates to the potential presence of bats and birds at the proposed re-development site located at 2-4 Silk Street, Leek, Staffordshire, ST13 6BD (OS Grid Reference: SJ 98507 56603). To fulfill this brief, Elite Ecology undertook both a desktop study and a field survey.

0.2 The current scheme of works are due to re-develop and convert the structure into either commercial or residential units.

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 **'moderate'** potential for birds to nest. Therefore, a minimum of two further activity surveys are required during the bat survey season (May to September, inclusive).

0.4 Summary

Bat presence/absence

From the survey visits undertaken on the site, it can be concluded that the surveyed building at 2-4 Silk Street does not contain any bat roosts. In addition to this, no bat foraging or commuting was detected by surveyors. Therefore, bats are thought to be absent from the locality in which the building is situated.

Bird presence/absence

No bird nests were identified in relation to the surveyed building due to a lack of internal inspection. Based upon the locality of the structure, common bird species could use the local landscape, and their presence can be assumed.

Ecological value of building units

The ecological value of the building has been deemed as 'negligible' to bats due to the absence of them using the structure for roosting purposes and no foraging or commuting specimens detected. The ecological value of the building has been deemed as 'low' to birds.

0.5 Recommendations

The recommendations for '2-4 Silk Street' can be summarised as follows (please refer to section '5 – Recommendations' for a more in-depth description):

- Vegetation removal around the site should be done outside of the bird breeding season which runs from March to August inclusive. If this cannot be achieved, then an inspection by a suitably qualified ecologist no more than 24 hours before its removal is necessary.
- Inspect the building for nesting specimens. Once no nests are found, any roosting birds should be flushed out and all access points blocked off through netting and/or boarding.
- Enhance the site by incorporating a bat friendly planting scheme around the site.
- Enhance the site for nesting birds by installing a variety of bird boxes across the site.

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# 1 Introduction

## 1.1 Report rationale

This report has been prepared at the request of Mr Andy Hagan (Purchaser). It relates to the potential presence of bats and birds at the proposed re-development site located at 2-4 Silk Street, Leek, Staffordshire, ST13 6BD (OS Grid Reference: SJ 98507 56603). To fulfill this brief, Elite Ecology undertook both a desktop study and a field survey.

## 1.2 Site description

The site itself is situated within an urban setting within the Staffordshire Moorlands town Leek. Hard standing ground and scrubland are situated in the immediate vicinity of the building, as well as a conglomeration of other buildings (residential dwellings and commercial units). This report relates to the former mill building which measures approximately 246m$^2$. Therefore, the site is considered to contain potential to support the local bat and bird populations by offering roosting/nesting, commuting and foraging opportunities.

**Figure 1:** An aerial photograph of the surveyed site at 2-4 Silk Street, Leek (as shown by the red outline).



## 1.3 Proposed works

The current scheme of works are due to re-develop and convert the structure into either commercial or residential units.

## 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 will subsequently be used in conjunction with the knowledge of the proposed works at the site to determine the potential need for further survey effort, the impacts of the proposed scheme of works, to establish whether a Natural England Development Licence is required along with species-specific mitigation and compensation. This is done in order to keep any protected species at a favourable conservation status on site.

# 2 Survey Methodology

## 2.1 Desktop Survey Methodology

2.1.1 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.

2.1.2 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.

## 2.2 Field Survey Methodology

2.2.1 Initial Site Survey

This is done by assessing the site by visually inspecting all building/s/structures and any trees/vegetation to be impacted by the proposed works. This is done to assess the resource availability for protected species on site and in the immediate area. Particular reference is made to:

- The presence or absence of bats and birds' onsite.
- Any evidence of potential bat roosts and birds' nests onsite.
- Whether any additional survey effort will be required.

During the initial survey, an internal and external inspection of the building(s) is undertaken to look for signs of bat activity. This is done in accordance with BCT guidelines for the assessment of building(s) and built structures.

2.2.2 External Inspection

This survey method is used to locate potential ingress and egress points around the structures that both bats and birds could use to gain access into the building. It also aims to identify any areas where cracks and crevices are present to be used as roosting/nesting features. This visual inspection is carried out in full daylight using binoculars, endoscope, torches and ladders.

This will allow for the determination of the following information:

- The type of building(s) surveyed.
- The approximate age of building(s) surveyed.
- The construction type and materials used.
- The presence of potential roost features (e.g. missing roof tiles, raised ridge tiles, air vents, cracks and crevices within the mortar).
- The presence of suitable ingress and egress points (e.g. missing windows and doors, missing mortar, lifted tiles).
- The location of any annecdotal evidence for the presence of protected species (e.g. nests, droppings or food remains).

2.2.3 Internal Inspection

This survey method aims to locate and examine areas which potentially provide suitable environmental conditions for bats. This visual inspection was undertaken by using binoculars, endoscope, torches, ladders and bat detectors to inspect internal features of the building(s).

This will allow for the determination of the following information:

- The presence of warm areas, dark areas, joints, crevices, beams and cavities that could be used for roosting and nesting purposes by bats and birds.
- To locate possible bat roost and bird nest sites.
- To listen for social calling bats.
- To locate any evidence of bat and bird presence through the identification of live or dead specimens, grease marks, droppings, food remnants, urine stains and/or the characteristic smell of bats.

2.2.4 Building/Vegetation Classification

A building/vegetation classification will be assigned to each surveyed feature that is proposed to be impacted by the scheme of works. This classification is based on the features potential to support roosting bats. The rating is also influenced by the location of the structure(s) in the local landscape, along with the number of suitable alternative roosting features, the type of features present in the landscape and the surveyor's experience. For example:

A structure that has a high level of anthropogenic disturbance with limited opportunities for access by bats, that is also 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 survey effort required for each feature 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.

2.2.5 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.

2.2.6 Bat Detector Survey (presence/absence survey)

If required, the object for this survey method is to detect any bats leaving or returning to their roost sites within the surveyed features. This is achieved by undertaking dusk and dawn activity surveys under the following protocol:

- Commencing the survey 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.
- 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.

2.2.7 In order to comply with the required legislation, the results from the surveys will be collated to establish whether a European Protected Species (EPS) development licence will be required. If required, project appropriate species-specific compensation and mitigation measures will be devised to ensure the species remains at a favourable conservation status at the impacted site.

## 2.3 Surveyors Information

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

**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.

**Miss. Miriam Dauden-Fernandez** MSc, Assistant Ecologist.

## 2.4 Field surveys

2.4.1 Site Surveys

Elite Ecology were made aware of a previous bat scoping survey from 2014. This survey concluded that no activity surveys were necessary for the structure.

### 2.4.2 Roost Surveys

The building at 2-4 Silk Street was externally and internally inspected for the presence of bats and birds with the use of various types of equipment (including binoculars, torches, endoscope and ladders) in full daylight. Subsequent activity surveys use a variety of bat detectors that include 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 Building – 12th June 2018. Daytime | Activity Survey of the Building – 26th June 2018. Dusk | Activity Survey of the Building – 11th June 2018. Dawn |
|---|---|---|---|
| **Temp Start:** | 17°C | 21°C | 13°C |
| **Temp Finish:** | 17°C | 19°C | 12°C |
| **Humidity Start:** | 66% | 49% | 88% |
| **Humidity Finish:** | 66% | 56% | 91% |
| **Cloud Cover Start:** | 20% | 10% | 80% |
| **Cloud Cover Finish:** | 20% | 10% | 80% |
| **Wind Speed Average:** | Low | Low | Low |
| **Precipitation:** | None | None | None |

# 3 Results

## 3.1 Desktop Survey Results

The ecological data search provided by SER revealed multiple protected bat and bird species within the 2km search radius of 2-4 Silk Street, Leek.

### 3.1.1 Bats:

The ecological data search revealed several bat records within the 2km search radius. The UKBAP species recorded in the search were brown long-eared (*Plecotus auritus*), noctule (*Nyctalus noctula*) and soprano pipistrelle (*Pipistrellus pygmaeus*) bats. The non-BAP species recorded in the search were common pipistrelle (*Pipistrellus pipistrellus*), Natterer's (*Myotis nattereri*) and whiskered (*Myotis mystacinus*) bats. In addition to these, a number of sightings of unidentified pipistrelle (*Pipistrellus* sp.) and unidentified bats were also revealed in the search.

The closest records to the site were of unidentified pipistrelle (*Pipistrellus pipistrellus sensu lato)* bats that were sighted in 1986 and 2012 approximately 103m to the south-west of the 2-4 Silk Street re-development site.

### 3.1.2 Birds:

Numerous protected bird species have been identified within the 2km search radius. These 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.

| Birds | |
|---|---|
| **Common Name** | **Latin Name** |
| Barn Owl | *Tyto alba* |
| Black-headed Gull | *Chroicocephalus ridibundus* |
| Black-tailed Godwit | *Limosa limosa* |
| Brambling | *Fringilla montifringilla* |
| Common Bullfinch | *Pyrrhula pyrrhula* |
| Common Goldeneye | *Bucephala clangula* |
| Common Grasshopper Warbler | *Locustella naevia* |
| Common Gull | *Larus canus* |
| Common Kestrel | *Falco tinnunculus* |
| Common Kingfisher | *Alcedo atthis* |
| Common Pochard | *Aythya farina* |
| Common Redshank | *Tringa tetanus* |
| Common Redstart | *Phoenicurus phoenicurus* |
| Common Sandpiper | *Actitis hypoleucos* |
| Common Shelduck | *Tadorna tadorna* |
| Common Snipe | *Gallinago gallinago* |

| | |
|---|---|
| Common Starling | *Sturnus vulgaris* |
| Common Swift | *Apus apus* |
| Common Tern | *Sterna hirundo* |
| Dark-bellied Brent Goose | *Branta bernicla subsp. bernicla* |
| Dipper | *Cinclus cinclus subsp. gularis* |
| Dunnock | *Prunella modularis* |
| Eurasian Curlew | *Numenius arquata* |
| Eurasian Hobby | *Falco Subbuteo* |
| Eurasian Oystercatcher | *Haematopus ostralegus* |
| Eurasian Teal | *Anas crecca* |
| Eurasian Tree Sparrow | *Passer montanus* |
| Eurasian Wigeon | *Anas Penelope* |
| Fieldfare | *Turdus pilaris* |
| Great Black-backed Gull | *Larus marinus* |
| Grey Wagtail | *Motacilla cinerea* |
| Greylag Goose | *Anser anser* |
| Herring Gull | *Larus argentatus* |
| House Martin | *Delichon urbicum* |
| House Sparrow | *Passer domesticus* |
| Lesser Black-backed Gull | *Larus fuscus* |
| Lesser Redpoll | *Acanthis cabaret* |
| Linnet | *Linaria cannabina* |
| Little Plover | *Charadrius dubius* |
| Mallard | *Anas platyrhynchos* |
| Marsh Tit | *Poecile palustris* |
| Meadow Pipit | *Anthus pratensis* |
| Mistle Thrush | *Turdus viscivorus* |
| Mute Swan | *Cygnus olor* |
| Northern Gannet | *Morus bassanus* |
| Northern Goshawk | *Accipiter gentilis* |
| Northern Lapwing | *Vanellus vanellus* |
| Northern Pintail | *Anas acuta* |
| Northern Shoveler | *Anas clypeata* |
| Osprey | *Pandion haliaetus* |
| Peregrine Falcon | *Falco peregrinus* |
| Pied Flycatcher | *Ficedula hypoleuca* |
| Pink-footed Goose | *Anser brachyrhynchus* |
| Red Kite | *Milvus milvus* |
| Redwing | *Turdus iliacus* |
| Reed Bunting | *Emberiza schoeniclus* |
| Ring Ouzel | *Turdus torquatus* |
| Ringed Plover | *Charadrius hiaticula* |
| Sky Lark | *Alauda arvensis* |
| Song Thrush | *Turdus philomelos* |

| | |
|---|---|
| Spotted Flycatcher | *Muscicapa striata* |
| Stock Dove | *Columba oenas* |
| Tawny Owl | *Strix aluco* |
| White-throated Dipper | *Cinclus cinclus* |
| Willow Tit | *Poecile montana* |
| Willow Warbler | *Phylloscopus trochilus* |
| Yellowhammer | *Emberiza citrinella* |

The closest records to the site were of Common Kingfisher (*Alcedo atthis*), Sky Lark (*Alauda arvensis*), Pink-footed Goose (*Anas brachyrhynchus*), Common Swift (*Apus apus*), Reed Bunting (*Emberiza schoeniclus*), Common Kestrel (*Falco tinnunculus*), Spotted Fycatcher (*Muscicapa striata*), House Sparrow (*Passer domesticus*), Eurasian Tree Sparrow (*Passer montanus*), Dunnock (*Prunella modularis*), Common Bullfinch (*Pyrrhula pyrrhula*), Tawny Owl (*Strix aluco*), Common Starling (*Sturnus vulgaris*), Redwing (*Turdus iliacus*), Song Thrush (*Turdus philomelos*), Fieldfare (*Turdus pilaris*), Mistle Thrush (*Turdus viscivorus*) and Northern Lapwing (*Vanellus vanellus*) which fell 103m from the structure proposed for re-development.

Please note: Any records may not truly represent the current species on site. The maps 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, 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 landscape surrounding the site.

## 3.2 Field surveys

3.2.1 Habitat description

The site itself is situated within an urban setting due to it being located in the Staffordshire settlement of Leek. On site, there are buildings, scrubland and hard standing ground. Within the wider landscape, further residential and commercial units (with their associated yards), hard standing ground and scattered trees are evident. Therefore, the habitats that are present in and around the site contains all of the elements that are considered to be critical in both bat and bird life cycles.

**Figure 2:** An aerial photograph of the surveyed site (yellow star) and some of the nearby habitats to 2-4 Silk Street, Leek.




3.2.2 Building survey

External Inspection:

The structure inspected was a two-storey solid brick built structure with a pitched roof constructed of clay tiles. From the external inspection, many gaps were present around the tiles for bats and birds to gain access to the structure. In addition to this, many windows were missing on the first floor which allowed clear access into the interior for bats and birds. There were also small cracks and crevices within the brick walls. It was noted that some bramble (*Rubus fruticosus*) scrub was present around the structure and this harbours bird nesting potential. The locality of the structure (within an urban setting) is only likely to be inhabited by light tolerant bat species such as the common pipistrelle (*Pipistrellus pipistrellus*), if present at all.

Internal Inspection:

No internal inspection could be carried out on the structure due to the padlock not being unlocked to allow access to the entrance doorway. However, from the external ground survey, it could be established that the roof is supported by wooden beams, with portions of the structure gaining natural light through the broken windows, and a section of the western side of the roof being severely damaged. No evidence of bats or birds could be established, but this does not mean that either species can be presumed absent based on the scoping assessment only.

### 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 **'moderate'** potential for 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).<br><br>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 from the numerous survey visits.

### 3.2.5 Activity surveys

Two activity surveys were undertaken on the building on the 26th June and 11th July 2018.

**Activity Survey 1 (26th June 2018):**
This survey was undertaken at dusk, with sunset being recorded at 21:39. During this survey, no bats were seen to emerge from any of the buildings on site. In addition to this, no bats were identified foraging or commuting around the structure.

**Activity Survey 2 (11th July 2018):**
This survey was undertaken at dawn, with sunrise being recorded at 04:55. During this survey, no bats were seen to return to the building to roost. In addition to this, no bats were identified foraging or commuting around the structure.

**Summary:**
In summary, the structure at 2-4 Silk Street contains **no bat roost.** In addition to this, no foraging or commuting bat activity was identified by surveyors during the site visits.

**Figure 3:** An aerial photograph of the surveyed site (red outline) and the surveyor locations (yellow stars).



# 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

The current planning proposal whereby the building will be re-develop and converted into either commercial or residential units, 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 habitats and landscape.

### 4.2.2 Bat Roosts

| Impact | Short-term Impacts: Disturbance | Long-term Impacts: Roost Modification | Long-term Impacts: Roost Loss |
|---|---|---|---|
| Classification: | Negligible | Negligible | Negligible |
| Justification: | No bat roost in the building. | No bat roost in the building. | No bat roost in the building. |
| Any further action: | None | None | None |

### 4.2.3 Bird Nests

As no internal inspection was undertaken, the presence or absence of bird nests in the structure could not be ascertained. It is anticipated that birds could be using the building to nest. Therefore, the proposed scheme of works will have an **'unknown'** effect to the local bird populations, but further precautions will be recommended (please see section 5).

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, with the adjacent land containing better opportunities for bats and birds to use. Post-development, all foraging and commuting habitats will be maintained, thus not negatively affecting the local landscape.

# 5 Recommendations

As no bats were identified, site improvements could be made for the local bat populations. This would be to include a bat friendly planting scheme into the site post re-development. The table below outlines some species that are of most benefit to wildlife and are considered to be 'bat attracting' flora. These species could be included in the soft landscaping of the survey site.

| Flowers for borders |
|---|
| Aubretia |
| Candytuft |
| Cherry pie |
| Corncockle |
| Corn marigold |
| Corn poppy |
| Echniacea |
| English bluebell |
| Evening primrose |
| Field poppies |
| Honesty |
| Ice plant 'pink lady' |
| Knapweed |
| Mallow |
| Mexican aster |
| Michaelmas daisy |
| Night-scented stock |
| Ox-eye daisy |
| Phacelia |
| Poached egg plant |
| Primrose |
| Red campion |
| Red valerian |
| Scabious |
| St. John's Wort |
| Sweet William |
| Tobacco plant |
| Verbena |
| Wallflowers |
| Wood forget-me-not |
| Yarrow |
| **Herbs** |
| Angelica |
| Bergamot |
| Borage |
| Coriander |
| English marigolds |
| Fennel |
| Feverfew |
| Hyssop |
| Lavenders |
| Lemon balm |
| Marjoram |
| Rosemary |
| Sweet Cicely |

| |
|---|
| Thyme |
| **Trees, shrubs & climbers** |
| Bramble |
| Buddleia |
| Common alder |
| Dogrose |
| Elder |
| English oak |
| Gorse |
| Guelder rose |
| Hawthorn |
| Hazel |
| Honeysuckle (native) |
| Hornbeam |
| Ivy |
| Jasmine |
| Pussy willow |
| Rowan |
| Silver birch |
| **Wild flowers for pond edges & marshy areas** |
| Bog bean |
| Bugle |
| Creeping Jenny |
| Flag Iris |
| Hemp agrimony |
| Lady's smock |
| Marsh mallow |
| Marsh marigold |
| Marsh woundwort |
| Meadowsweet |
| Purple loosestrife |
| Water avens |
| Wood forge-me-not |
| Water mint |

As no internal inspection was undertaken, it could not be ascertained whether birds are nesting within the building or in the scrubland. However, it is anticipated that birds could be nesting in the scrubland and this should not be removed during the bird breeding season of March to August, inclusive. If this cannot be achieved, then this will need to be inspected by a suitably qualified ecologist no more than 24 hours before removal takes place.

In relation to the building, it is anticipated that feral pigeon (*Columba livia*) could be using the building to nest. No works can be undertaken during the bird breeding season of March to August, inclusive. It has been known for these birds to nest year round and therefore it is recommended that an inspection by a suitably qualified ecologist is undertaken. It is recommended that once the building has been declared free of nesting birds, any roosting specimens identified need to be flushed out and netting or boards should be installed to prevent birds regaining access into the structure.
Post development, a variety of bird boxes can be installed around the site to enhance the nesting opportunities within the local landscape.

# 6 Summary

## 6.1 Bat presence/absence

From the survey visits undertaken on the site, it can be concluded that the surveyed building at 2-4 Silk Street does not contain any bat roosts. In addition to this, no bat foraging or commuting was detected by surveyors. Therefore, bats are thought to be absent from the locality in which the building is situated.

## 6.2 Bird presence/absence

No bird nests were identified in relation to the surveyed building due to a lack of internal inspection. Based upon the locality of the structure, common bird species could use the local landscape, and their presence can be assumed.

## 6.3 Ecological value of building units

The ecological value of the building has been deemed as 'negligible' to bats due to the absence of them using the structure for roosting purposes and no foraging or commuting specimens detected. The ecological value of the building has been deemed as 'low' to birds.

## 6.4 Recommendations

The recommendations for '2-4 Silk Street' can be summarised as follows (please refer to section '5 – Recommendations' for a more in-depth description):

- Vegetation removal around the site should be done outside of the bird breeding season which runs from March to August inclusive. If this cannot be achieved, then an inspection by a suitably qualified ecologist no more than 24 hours before its removal is necessary.
- Inspect the building for nesting specimens. Once no nests are found, any roosting birds should be flushed out and all access points blocked off through netting and/or boarding.
- Enhance the site by incorporating a bat friendly planting scheme around the site.
- Enhance the site for nesting birds by installing a variety of bird boxes across the site.

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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

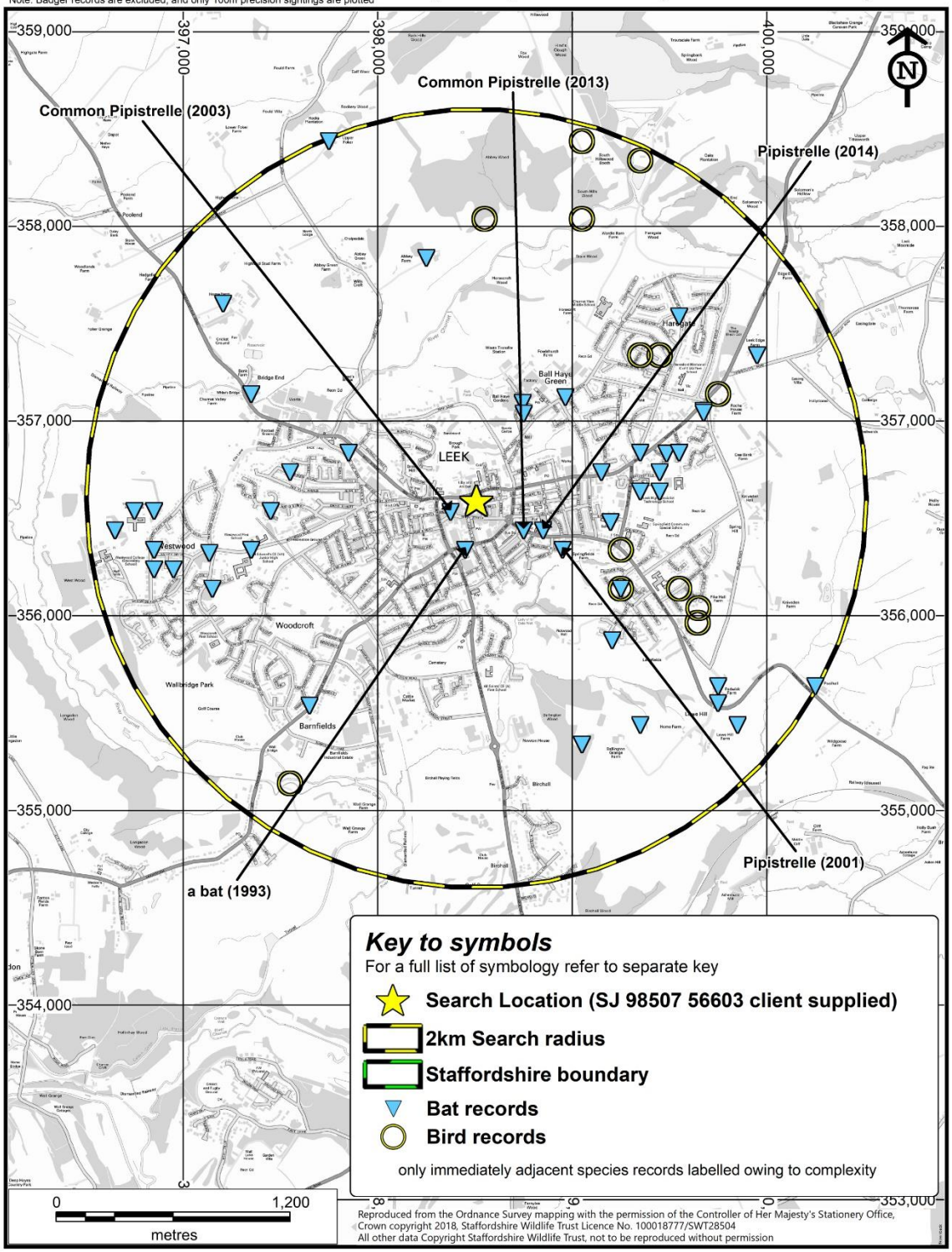
No site plans were made available to Elite Ecology. Please contact Mr Andy Hagan (Purchaser) for more information on pollyposhfrocks@hotmail.com

## **Appendix B:** The Ecological Data Search Map

Staffordshire Ecological Record The Wolseley Centre, Wolseley Bridge, Stafford. ST17 0WT Tel: 01889 880100 Fax: 01880 880101
Email: info@staffs-ecology.org.uk SER/18/281

**Protected Species**
**within 2km of 2-4 Silk Street, Leek, ST13 6BD (SJ 98507 56603)**

Note: Badger records are excluded, and only 100m precision sightings are plotted



## **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 eastern and southern elevations of the surveyed structure.




**Plate 2:** An image of the northern and eastern elevations of the structure.



**Plate 3:** A photograph showing the western elevation of the surveyed structure.



**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.

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The latest good practice guidelines put in place by Natural England or the relevant statutory conservation bodies have been followed by the surveyors on site. If those methodologies fail to identify a protected species during the survey efforts, no responsibility can be attributed to Elite Ecology. If any of these guidelines are adapted between the date(s) of the surveys being undertaken and the submission of this report, then Elite Ecology takes no responsibility for this.

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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.