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Rudyard Memorial Hall, Rudyard



Bat Activity Survey Report

June 2023

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Bat Activity Survey Report

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0. Executive Summary

This report has been prepared at the request of Mr. Paul Horwell. It relates to the potential presence of bats and birds at the proposed re-development site located at Rudyard Memorial Hall, Lake Road, Rudyard, Staffordshire, ST13 8RN (Central OS Grid Reference: SJ 95057 58159). To fulfil this brief, Elite Ecology undertook both a desktop study and a field survey.

Under current proposals, the building is to be converted into two residential dwellings. This will also include extending the property to the rear.

Due to the amount of potential ingress/egress points and suitable roosting features, **B1** was deemed as having **high** bat roost potential. The structure has also been deemed to be of **low** potential to support nesting birds due to the absence of bird nests within the structure. Therefore, further surveys and precautions were required. The surveys were carried out in May and June 2023.

Summary

Bat Presence/Absence

From the survey visit undertaken on the site, it can be concluded that the surveyed structure contains common pipistrelle (*Pipistrellus pipistrellus*) and Daubenton's (*Myotis daubentonii*) bat day roosts. In addition to this, commuting and foraging common pipistrelle, Daubenton's, noctule (*Nyctalus noctula*) and soprano pipistrelle (*Pipistrellus pygmaeus*) bats were recorded around the property in low numbers during the survey.

Bird Presence/Absence

From the survey visit undertaken on the site, it can be concluded that the surveyed structure contains no bird nests. However, due to the potential for birds to nest within the structure, the proposed scheme of works will be of a **low** effect to the local bird populations. Additionally, the surrounding landscape provides all of the necessary habitat elements that birds require, and their presence can be assumed.

Ecological Value of Building Units

The ecological value of the buildings has been deemed as **high** to bats due to the presence of day roosts of common pipistrelle and Daubenton's bat day roosts within the structure.

The ecological value of the buildings to birds has been deemed **low** due to the absence of bird nests within the structure.

Recommendations:

The recommendations for Rudyard Memorial Hall, Rudyard, can be summarised as follows (please refer to **Section 5 – Recommendations** for a more in-depth description):

- Apply for a Natural England Development Licence to legally carry out the works.
- Works on the structure should only take place during the autumn or spring, in conditions that are deemed suitable for bat activity (temperature above 7°C and avoiding heavy rain). This will reduce any impacts on bats should they be found during the works.
- At the start of works, site supervision by a licenced bat ecologist in accordance with the Natural England Development Licence will be required.
- Install bat compensatory features on the site in accordance with section 5 recommendations. These must avoid artificial lighting.
- **Optional:** Install a variety of additional bird boxes around the site post development to enhance the site for the local bird populations. Examples to consider can be found within **Section 5.2** of this report.

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1. Introduction

1.1 Report Rationale

This report has been prepared at the request of Mr. Adam Gregory (Forefront Development Consulting), on behalf of Mr. Paul Horwell (proprietor). It relates to the potential presence of bats and birds at the proposed re-development site located at Rudyard Memorial Hall, Lake Road, Rudyard, Staffordshire, ST13 8RN (Central OS Grid Reference: SJ 95057 58159). To fulfil this brief, Elite Ecology undertook both a desktop study and a field survey.

1.2 Site Description

The site is located in Rudyard, a lakeside village in the county of Staffordshire, west of Leek and on the shore of Rudyard Lake. The site contains a variety of habitats, including amenity grassland, a building, a drystone wall, hard standing ground, and scattered trees. The building of interest is a derelict memorial hall, which measures approximately 188m². 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 structure at Rudyard Memorial Hall, Rudyard (as shown by the red outline).



1.3 **Proposed Works**

Under current proposals, the building is to be converted into two residential dwellings. This will also include extending the property to the rear.

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).

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.

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

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 www.naturalengland.org.uk, www.ordnancesurvey.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.

The local records centre was contacted to provide data on all protected species and sites within 2km of the proposed development site. Staffordshire Ecological Record (SER) was 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 bird 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, endoscopes, 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 anecdotal 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, endoscopes, 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 fifteen minutes before sunset (dusk survey) and two 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 fifteen minutes after sunrise (dawn). This will cover the emergence and re-entry of the bats at the potential roost site, for some bat species.

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 and members of the Chartered Institute of Ecology & Environmental Management (CIEEM) and Elite Ecology staff members:

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

Mr. Matthew Cotterill: PG Diploma, BSc (Hons), Ecologist, Natural England Bat Survey Licence Number: 2019-43981-CLS-CLS Bat Survey Level 1.

Miss. Lucy Talbot: BSc (Hons), Ecologist.

Mr. Matthew Hodgson: Ecologist

Mr. Alex Dick: BSc (Hons), Assistant Ecologist

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2.4 Field Surveys**2.4.1 Site Surveys**

Elite Ecology were not made aware of any previous site surveys.

2.4.2 Roost Surveys

The structure at Rudyard Memorial Hall, Rudyard, was inspected for the presence of bats and birds with the use of various types of equipment (including binoculars, torches, endoscopes, and ladders) in full daylight. 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	Preliminary Roost Assessment Survey 01/06/2023 Daytime	Bat Activity Survey 1 28/05/2023 Dusk	Bat Activity Survey 2 12/06/2023 Dawn	Bat Activity Survey 2 26/06/2023 Dusk
Temp Start:	17°C	12°C	16°C	15°C
Temp Finish:	17°C	10°C	16°C	14°C
Humidity Start:	62%	73%	92%	67%
Humidity Finish:	62%	77%	91%	71%
Cloud Cover Start:	70%	0%	100%	80%
Cloud Cover Finish:	70%	0%	85%	80%
Wind Speed Average:	16km/hr	28km/hr	11.5km/hr	7km/hr
Precipitation:	N/A	N/A	N/A	N/A

3. Results

3.1 Desktop Survey Results

The ecological data search provided by SER revealed multiple bat species within the 2km search radius of the structure at Rudyard Memorial Hall, Rudyard.

3.1.1 Bats

Within the ecological data search provided by SER, it was revealed that five bat species were recorded within 2km of the site.

The UKBAP species revealed were brown long-eared (*Plecotus auritus*), noctule (*Nyctalus noctula*), and soprano pipistrelle (*Pipistrellus pygmaeus*) bats. The non-UKBAP species revealed were common pipistrelle (*Pipistrellus pipistrellus sensu stricto*) and Daubenton's (*Myotis daubentonii*) bats. In addition to this, records of unidentified bat (*Chiroptera* sp.), unidentified pipistrelle (*Pipistrellus* sp.), and unidentified myotis (*Myotis* sp.) specimens were revealed within the search.

The closest record to site was of unidentified bats (*Chiroptera* sp.) recorded approximately 311m to the south-east of the site.

3.1.2 Birds

Within the ecological data search provided by SER, it was revealed that 117 bird species were recorded within 2km of the site. The closest record to the site was kingfisher (*Alcedo atthis*) recorded approximately 131m to the north-east of the site.

A collated list of the bird species present within 2km of the site can be found within **Appendix B**.

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 proposal remains 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 is located in Rudyard, a lakeside village in the county of Staffordshire, west of Leek and on the shore of Rudyard Lake.

The site measures approximately 0.19ha and contains a number of habitats. These include amenity grassland, a building, a drystone wall, hard standing ground, and scattered trees. The habitats on site are considered to contain potential to support the local bat and bird populations by offering roosting/nesting, commuting and foraging opportunities.

Within the wider landscape, further habitats are present. These come in the form of amenity grassland, arable land, broadleaved woodland, buildings (and their associated gardens/yards), hard standing ground, hedgerows, pasture, running water, scattered trees, and standing water.

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 Rudyard Memorial Hall, Rudyard.



Figure 3: An OS map obtained from OS Website of the surveyed site (yellow star) and some of the nearby habitats to Rudyard Memorial Hall, Rudyard.



3.2.2 Building Surveys

The site consists of one structure, a derelict memorial hall, surrounded by grounds to the front and rear of the property.

External Inspection

B1 is a derelict building constructed of solid stone walls, with the rear walls being rendered. Wooden cladding is present on the gable ends of the structure, with multiple gaps present between the feather-edge cladding. These gaps provide potential roosting features, whilst also providing potential ingress into the structure for both bats and birds.

The window frames are made of wood, with glass windows present. These features are in good condition, with no gaps around the frame and no broken panes of glass. Therefore, no roosting features or access points are prevalent here. The doors are also wooden and in good condition, with no gaps present around the frame, once again restricting access for protected species. Wooden eaves can be seen across the structure, of which there are further gaps present to provide interior access to the loft void. Air vents can also be seen within the wall to the rear of the property.

The roof of the majority of the building is cross-gabled, constructed of concrete tiles, with concrete ridge tiles. Due to there being a thick covering of moss on the roof of the structure and topography of the site, it was difficult to make a full assessment of the roof's condition. Nevertheless, gaps were observed across the roof where the mortar is missing, creating crevices that could potentially be used by protected species.

The northern portion of the site contains a flat roof section of building, with coping stones present at the top of the walls. The majority of this is in good condition, with no potential roosting features present.

There was no evidence of either active or historic nesting birds externally.

Internal Inspection

Within the structure, the building consists of a number of ground floor rooms, with a separate loft void above. The northern section of the site, where the flat roof portion is located, is very damp due to water ingress, presumably due to potentially blocked guttering and drainpipes from leaf litter, due to the overhanging trees near to the building. The external air vents in the wall lead into the ground floor of the building, but they are all sealed off with a fine mesh, ultimately ensuring that no protected species can access via these points.

The loft revealed that the roof is supported by timber beams, with one half of the void being lined with bitumen felt, and the other side having timber sarking. The bitumen felt is largely in good condition, with only small sections falling away. The timber sarking is in excellent condition, providing very little access to the void. However, due to the good condition of the underlining materials, it is possible that any bats roosting under the tiles would not be visible, and evidence potentially trapped between the tiles and the underlining.

Sections of natural daylight can be seen entering the internal space via the gabled ends, where the feather-edge cladding is and gaps identified externally. A number of cobwebs were also present within the internal void at the apex of the roof, ultimately indicating that the void is not in use by a large number of bats.

However, bat droppings were discovered within the internal void space of the loft. A large accumulation of old bat droppings were identified at both the southern and northern sections of the loft void, indicating that the building used to contain a maternity roost of bats. However, these were very old, and it is suspected that the structure was re-roofed a number of years ago without any regard for the bat roost being considered. These droppings were deemed to be too old for DNA analysis, due to the deterioration of DNA matter likely to lead to an inconclusive result. Despite this, one fresh, shiny black bat dropping was identified within the void. This was also not sent for DNA analysis due to the small sample size found. However, these sample droppings were analysed in the office by licenced bat ecologists and were thought to pertain to pipistrelle bat species (*Pipistrellus sp.*).

In addition to the evidence of bats, bird feathers were also discovered within the loft, providing evidence that birds can access the void, and have done historically. No active evidence of internal bird activity was discovered, with no specimens or nests detected.

3.2.3 Summary of the Building Inspections

Due to the amount of potential ingress/egress points and suitable roosting features, the structure at Rudyard Memorial Hall, Rudyard, was deemed as having the following bat potential:

Building	Nesting Bird Potential	Bat Roost Potential	Number of bat activity surveys required	Number of surveyors required for bat activity survey
B1	Low	High	3	3

Therefore, further recommendations are apparent and further survey effort is necessary. Please refer to **Section 5** of this report.

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

Bat Conservation Trust

Table 7.3 Recommended minimum number of survey visits for presence/absence surveys to give confidence in a negative result for structures (also recommended for trees but unlikely to give confidence in a negative result).		
Low roost suitability	Moderate roost suitability	High roost suitability
One survey visit. One dusk emergence or dawn re-entry survey ^a (structures). No further surveys required (trees).	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey. ^b	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn. ^b

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

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

3.2.4 DNA Results

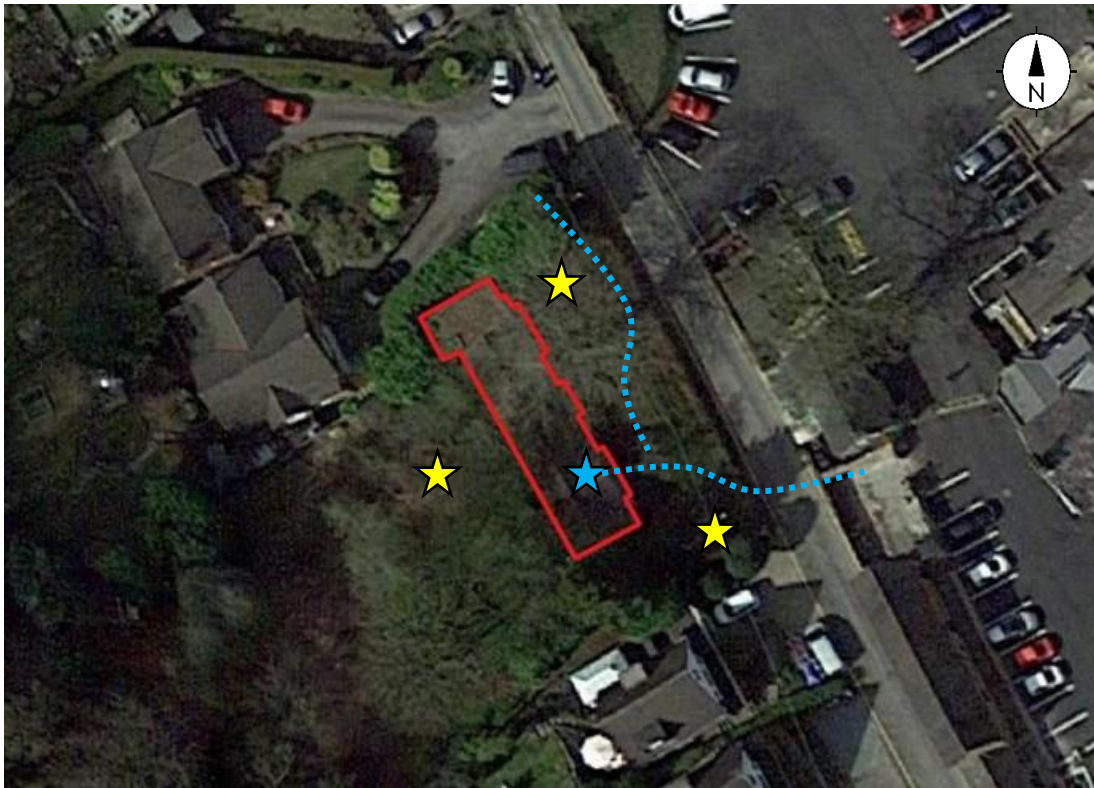
A number of bat droppings were discovered within the internal void space of the loft. A large number of these droppings are old, meaning that DNA analysis would prove inconclusive as the sample will have degraded over time. One fresh bat dropping was also discovered; however, the sample size was too small to send off for DNA analysis.

3.2.5 Activity Surveys

Activity Survey 1 (28th of May 2023):

The activity survey was undertaken at dusk with sunset time recorded at 21:20. During this survey, one Daubenton's bat (*Myotis daubentonii*) was seen to emerge from the tiles on the eastern elevation of the building. Commuting and foraging common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle (*Pipistrellus pygmaeus*) bats were recorded around the property in low numbers during the survey. Additionally, a tawny owl (*Strix aluco*) was heard in close proximity to the survey site.

Figure 4: An aerial photograph of the surveyed building during the first activity survey (yellow stars). The blue star shows the emergence point from the Daubenton's (*Myotis daubentonii*) bat. The common bat flight paths are shown by the dotted blue lines.

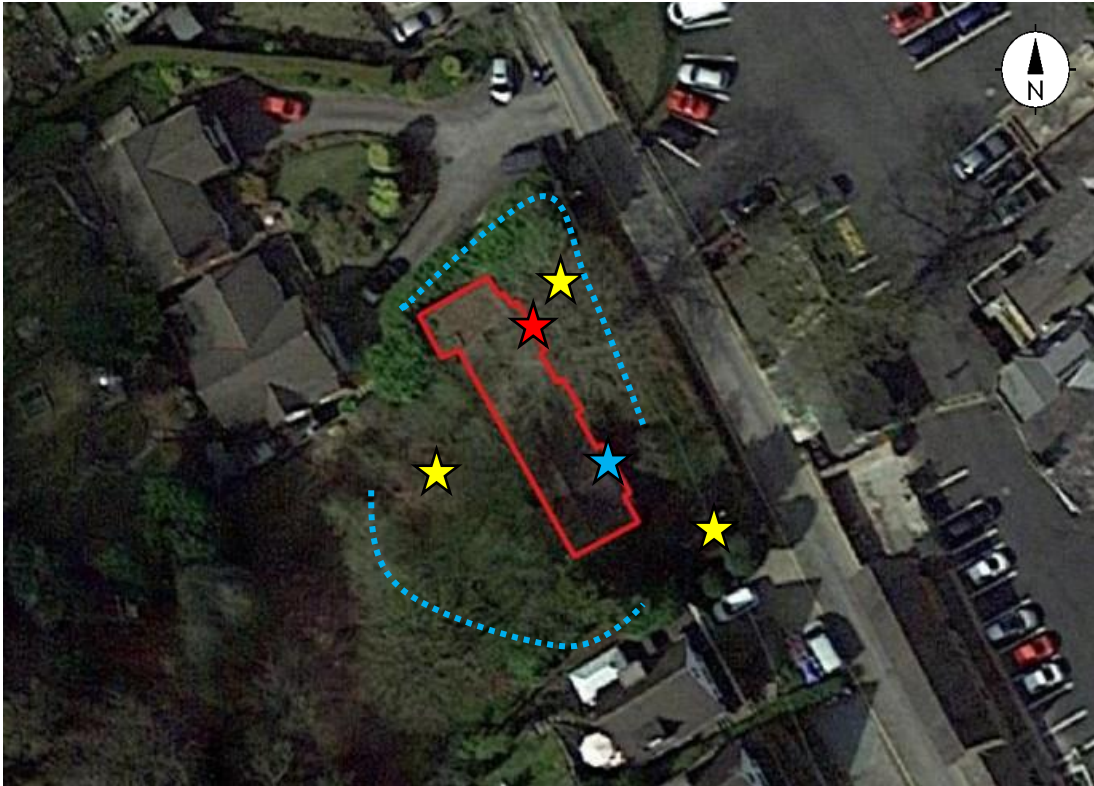


Activity Survey 2 (12th of June 2023):

The second activity survey was undertaken at dawn on the 12th of June with sunrise being recorded at 04:42. During this survey, one common pipistrelle bat was witnessed re-entering the property under the timber slats at the eastern elevation gable end. Additionally, one Daubenton's bat (*Myotis daubentonii*) was seen re-entering the structure under the timber slats on the eastern elevation, in the southern portion. In addition to this, commuting and foraging common pipistrelle, Daubenton's, noctule (*Nyctalus noctula*) and soprano pipistrelle bats were recorded around the property in low numbers during the survey.

Additionally, a tawny owl was heard to the south-west of the site within the wooded area directly offsite.

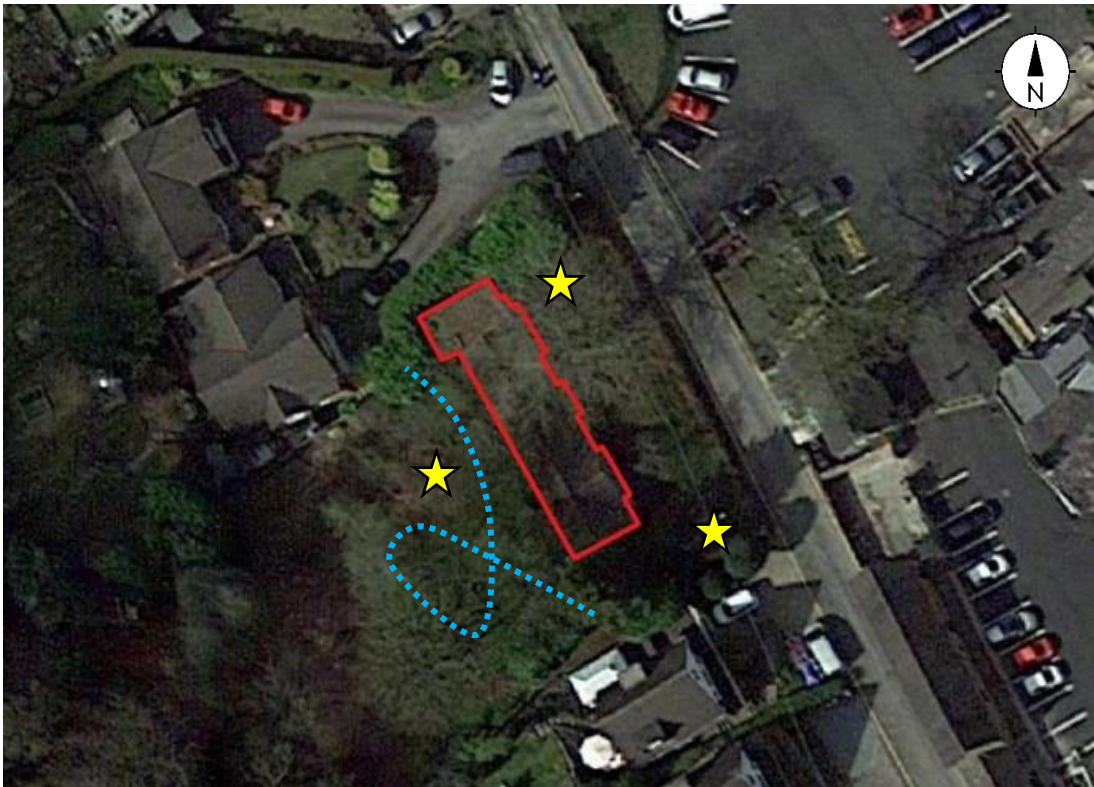
Figure 5: An aerial photograph of the surveyed building during the first activity survey (yellow stars). The blue star shows the re-entry point from the Daubenton's (*Myotis daubentonii*) bat, with the red star illustrating the common pipistrelle re-entry point. The common bat flight paths are shown by the dotted blue lines.



Activity Survey 3 (26th of June 2023):

The final activity survey was undertaken at dusk with sunset being recorded at 21:39. During this survey, no bats were witnessed emerging from the structure. Commuting and foraging common pipistrelle and noctule bats were recorded around the property in low numbers during the survey.

Figure 6: An aerial photograph of the surveyed building during the first activity survey (yellow stars). The common bat flight paths are shown by the dotted blue lines.



Summary:

In summary, the building contains a day roost of common pipistrelle (*Pipistrellus pipistrellus*) and Daubenton's (*Myotis daubentonii*).

In addition to this, commuting and foraging common pipistrelle, Daubenton's, noctule, and soprano pipistrelle bats were recorded around the property in low numbers during the survey.

During the survey efforts, a tawny owl was also heard in close proximity to the survey site.

4. Impact Assessment

4.1 Constraints

Constraints on:	Survey Information	Equipment Used
Constraint (Yes or No):	Yes	No
Explanation of Constraints:	Thick covering of moss on the roof of the structure and topography of the site made it difficult to make a full assessment of the roofs condition.	N/A
Action Taken:	Bat activity surveys of the building.	N/A

4.2 Potential Impacts of the Re-development

The current planning proposal for the structure at Rudyard Memorial Hall, Rudyard, is for the existing structure to be converted into two residential dwellings. This will include an extension of the structure for the rear. The potential impacts of works to this site have been identified as follows:

4.2.1 Designated Sites

As the proposed works are due to remain within the boundary of the property, 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:	High	High	High
Justification:	The structure was found to support day roosts common pipistrelle (<i>Pipistrellus pipistrellus</i>) and Daubenton's (<i>Myotis daubentonii</i>) bats.	The structure was found to support day roosts common pipistrelle (<i>Pipistrellus pipistrellus</i>) and Daubenton's (<i>Myotis daubentonii</i>) bats.	The structure was found to support day roosts common pipistrelle (<i>Pipistrellus pipistrellus</i>) and Daubenton's (<i>Myotis daubentonii</i>) bats.
Any further action:	Species-specific mitigation measures are required (please see Section 5 for more information).	Species-specific mitigation measures are required (please see Section 5 for more information).	Species-specific mitigation measures are required (please see Section 5 for more information).

4.2.3 Bird Nests

Due to the absence of bird nests in relation to the surveyed structure, the proposed scheme of works will be of a **low** effect to the local bird populations. A tawny owl (*Strix aluco*) was heard in close proximity to the survey site.

4.2.4 Foraging and Commuting Habitat

It is considered that the re-development of the site would have a **moderate** effect on potential foraging and commuting habitat. The site itself offers foraging habitat in the form of scattered trees that both bats and birds could use. Additionally, it is expected that trees across the site will be cleared for access and to make room for the proposed rear extension, thus negatively affecting the local landscape.

5. Recommendations

5.1 Bats

From the site survey, it has been established that **B1** supports one Daubenton's bat (*Myotis daubentonii*) and one common pipistrelle (*Pipistrellus pipistrellus*) bat day roost.

Furthermore, commuting and foraging common pipistrelle, Daubenton's, noctule (*Nyctalus noctula*) and soprano pipistrelle (*Pipistrellus pygmaeus*) bats were recorded around the property in low numbers during the survey.

Due to roosts being present, a Natural England Development Licence is necessary to legally carry out the works. These licences can take up to thirty working days once the paperwork has been completed and submitted.

All works on the structure should only take place during the autumn or spring, in conditions that are deemed suitable for bat activity (temperature above 7°C and avoiding heavy rain). This will reduce any impacts on bats should they be found during the works. This must avoid peak hibernation months.

It is possible, however, that some bats may remain within their summer roost over the winter months for hibernation purposes. Due to this, at the beginning of the demolition works, a licenced ecologist is required to undertake soft demolition by accompanying building contractors in inspecting the structure by hand. This will ensure that no bats are harmed by the works. Two [1FS Schwegler Large Colony Bat Box](#) (one per species) or similar will be required to be installed on the morning of the commencement of the bat inspection. This will need to be situated on a nearby tree so that any bats found can be translocated to this feature and enable the works to commence without impacting upon the bats.

It will be necessary to compensate for the loss of the common pipistrelle roost. This will be to include four [Integrated Eco Boxes](#) are installed on the structure as close to the existing roost as possible. All compensation features also need to avoid any artificial lighting effects. These should be placed where the timber slats are currently located, with two on each section

Due to the presence of roosting bats and foraging and commuting bats around the site, no artificial lighting is preferred on the structure. If artificial lighting is necessary, a sensitive lighting scheme is required to ensure that no impacts occur on foraging and commuting individuals. This will involve downward pointing lights and motion-sensor lights (please see **Appendix G** for more information on bats and artificial lighting).

Figure 7: An aerial map showing where the integrated eco bat boxes (shown by blue shapes) are to be installed on the structure.



5.2 Birds

From the site survey, it has been established that there are no bird nests present within the surveyed structures. However, due to the potential for birds to nest within the structure, the proposed scheme of works will be of a **low** effect to the local bird populations.

The surrounding landscape also provides all of the necessary habitat elements that birds require, and their presence can be assumed. Additionally, a tawny owl (*Strix aluco*) was heard in close proximity to the survey site.

Therefore, due to the potential nesting sites in the trees, all building, vegetation, and tree removal, should be undertaken outside of the bird breeding season (March to August, inclusive).

If vegetation and/or structures are required to be removed during the bird breeding season, then a further inspection by a suitably qualified ecologist is required no more than twenty-four hours before these are to be removed. This is to ensure that no active nest site is illegally destroyed, due to the protection afforded to all active bird nests under the Wildlife and Countryside Act 1981. If bird nests are found, no vegetation removal can take place in that area until the nests become inactive, with an exclusion zone set up to prevent any unlawful damage.

To enhance the site for nesting birds, a variety of bird boxes could be installed around the site to enhance the nesting opportunities for a variety of species within the local landscape. The following bird boxes should be considered:

- Apex Bird Box
- Apex Robin Box
- Sparrow Terrace Nest box
- Tawny Owl Nest Box

Bird boxes can be purchased by emailing admin@eliteecology.co.uk.

6. Summary

6.1 Bat Presence/Absence

From the survey visit undertaken on the site, it can be concluded that the surveyed structure contains common pipistrelle (*Pipistrellus pipistrellus*) and Daubenton's (*Myotis daubentonii*) bat day roosts. In addition to this, commuting and foraging common pipistrelle, Daubenton's, noctule (*Nyctalus noctula*) and soprano pipistrelle (*Pipistrellus pygmaeus*) bats were recorded around the property in low numbers during the survey.

6.2 Bird Presence/Absence

From the survey visit undertaken on the site, it can be concluded that the surveyed structure contains no bird nests. However, due to the potential for birds to nest within the structure, the proposed scheme of works will be of a **low** effect to the local bird populations. Additionally, the surrounding landscape provides all of the necessary habitat elements that birds require, and their presence can be assumed.

6.3 Ecological Value of Building Units

The ecological value of the buildings has been deemed as **high** to bats due to the presence of day roosts of common pipistrelle and Daubenton's bat day roosts within the structure.

The ecological value of the buildings to birds has been deemed **low** due to the absence of bird nests within the structure.

6.4 Recommendations

The recommendations for Rudyard Memorial Hall, Rudyard, can be summarised as follows (please refer to **Section 5 – Recommendations** for a more in-depth description):

- Apply for a Natural England Development Licence to legally carry out the works.
- Works on the structure should only take place during the autumn or spring, in conditions that are deemed suitable for bat activity (temperature above 7°C and avoiding heavy rain). This will reduce any impacts on bats should they be found during the works.
- At the start of works, site supervision by a licenced bat ecologist in accordance with the Natural England Development Licence will be required.
- Install bat compensatory features on the site in accordance with section 5 recommendations. These must avoid artificial lighting.
- **Optional:** Install a variety of additional bird boxes around the site post development to enhance the site for the local bird populations. Examples to consider can be found within **Section 5.2** of this report.

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8. Appendices

Appendix A: Site Plans

Appendix B: Desktop Study Tables

Appendix C: Desktop Study Maps

Appendix D: Photographic Records

Appendix E: The Annual Bat Year (BCT)

Appendix F: Legislation and Policy

Appendix G: Artificial Lighting and Bats

Appendix A: Site Plans

No site plans have been provided at the production of this report.

Bat Activity Survey Report

Appendix B: Desktop Study Tables

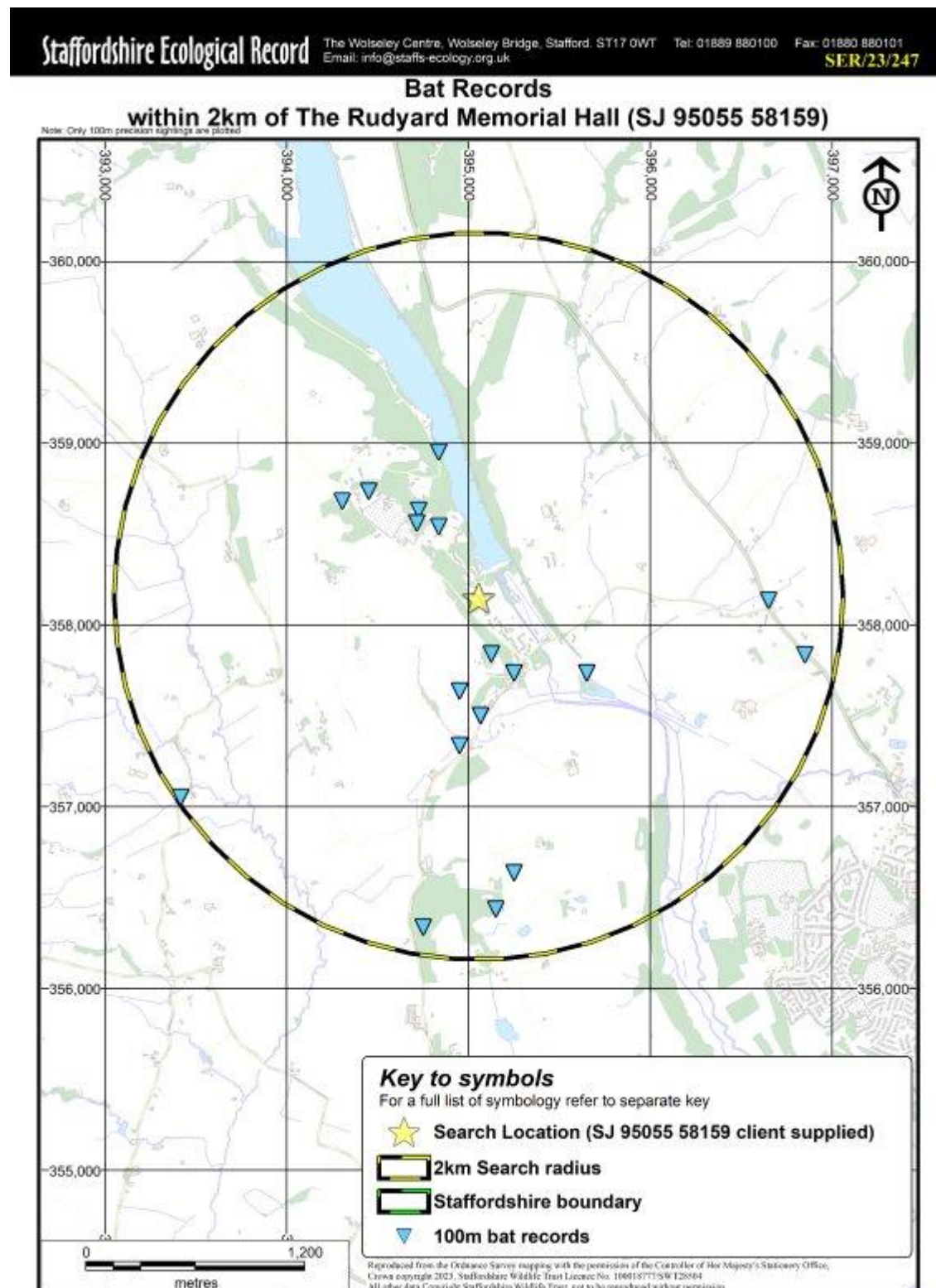
Bats	
Common Name	Latin Name
Bats	Chiroptera
Brown Long-eared Bat	Plecotus auritus
Common Pipistrelle	Pipistrellus pipistrellus sensu stricto
Daubenton's Bat	Myotis daubentonii
Noctule Bat	Nyctalus noctula
Pipistrelle	Pipistrellus pipistrellus sensu lato
Soprano Pipistrelle	Pipistrellus pygmaeus
unidentified Myotis bat	Myotis
Birds	
Common Name	Latin Name
Arctic Tern	Sterna paradisaea
Barn Owl	Tyto alba
Bar-tailed Godwit	Limosa lapponica
Bewick's Swan	Cygnus columbianus
Bewick's Swan	Cygnus columbianus subsp. bewickii
Black Tern	Chlidonias niger
Black-headed Gull	Chroicocephalus ridibundus
Black-tailed Godwit	Limosa limosa
Brambling	Fringilla montifringilla
British Dipper	Cinclus cinclus subsp. gularis
Bullfinch	Pyrrhula pyrrhula
Caspian Tern	Hydroprogne caspia
Cetti's Warbler	Cettia cetti
Common (Mealy) Redpoll	Acanthis flammea
Common Crossbill	Loxia curvirostra
Common Gull	Larus canus
Common Sandpiper	Actitis hypoleucos
Common Scoter	Melanitta nigra
Common Tern	Sterna hirundo
Crane	Grus grus
Cuckoo	Cuculus canorus
Curlew	Numenius arquata
Curlew Sandpiper	Calidris ferruginea
Dipper	Cinclus cinclus
Dunlin	Calidris alpina
Duncock	Prunella modularis
Eider	Somateria mollissima
Fieldfare	Turdus pilaris
Goldeneye	Bucephala clangula
Grasshopper Warbler	Locustella naevia
Great Black-backed Gull	Larus marinus
Great Northern Diver	Gavia immer
Great White Egret	Ardea alba
Green Sandpiper	Tringa ochropus
Greenfinch	Chloris chloris
Greenshank	Tringa nebularia
Grey Plover	Pluvialis squatarola
Grey Wagtail	Motacilla cinerea

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Greylag Goose	Anser anser
Hawfinch	Coccothraustes coccothraustes
Herring Gull	Larus argentatus
Hobby	Falco subbuteo
House Martin	Delichon urbicum
House Sparrow	Passer domesticus
Kestrel	Falco tinnunculus
Kingfisher	Alcedo atthis
Kittiwake	Rissa tridactyla
Knot	Calidris canutus
Lapwing	Vanellus vanellus
Lesser Black-backed Gull	Larus fuscus
Lesser Redpoll	Acanthis cabaret
Linnet	Linaria cannabina
Little Egret	Egretta garzetta
Little Gull	Hydrocoloeus minutus
Little Ringed Plover	Charadrius dubius
Mallard	Anas platyrhynchos
Marsh Tit	Poecile palustris
Meadow Pipit	Anthus pratensis
Mealy Redpoll	Acanthis flammea subsp. flammea
Merlin	Falco columbarius
Mistle Thrush	Turdus viscivorus
Moorhen	Gallinula chloropus
Osprey	Pandion haliaetus
Oystercatcher	Haematopus ostralegus
Peregrine	Falco peregrinus
Pied Flycatcher	Ficedula hypoleuca
Pink-footed Goose	Anser brachyrhynchus
Pintail	Anas acuta
Pochard	Aythya ferina
Poecile montana subsp. kleinschmidtii	Poecile montanus subsp. kleinschmidtii
Red Kite	Milvus milvus
Red-breasted Merganser	Mergus serrator
Redshank	Tringa totanus
Redstart	Phoenicurus phoenicurus
Red-throated Diver	Gavia stellata
Redwing	Turdus iliacus
Reed Bunting	Emberiza schoeniclus
Ringed Plover	Charadrius hiaticula
Rook	Corvus frugilegus
Ruff	Calidris pugnax
Sanderling	Calidris alba
Scaup	Aythya marila
Sedge Warbler	Acrocephalus schoenobaenus
Shelduck	Tadorna tadorna
Skylark	Alauda arvensis
Smew	Mergellus albellus
Snipe	Gallinago gallinago
Song Thrush	Turdus philomelos
Sparrowhawk	Accipiter nisus
Spotted Flycatcher	Muscicapa striata
Spotted Redshank	Tringa erythropus
Starling	Sturnus vulgaris
Stock Dove	Columba oenas
Swift	Apus apus
Tawny Owl	Strix aluco

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Teal	Anas crecca
Temminck's Stint	Calidris temminckii
Tree Pipit	Anthus trivialis
Tree Sparrow	Passer montanus
Troglodytes troglodytes subsp. indigenus	Troglodytes troglodytes subsp. indigenus
Turnstone	Arenaria interpres
Twite	Linaria flavirostris
Wheatear	Oenanthe oenanthe
Whimbrel	Numenius phaeopus
White-fronted Goose	Anser albifrons
Whooper Swan	Cygnus cygnus
Willow Tit	Poecile montanus
Willow Warbler	Phylloscopus trochilus
Wood Sandpiper	Tringa glareola
Wood Warbler	Phylloscopus sibilatrix
Woodcock	Scolopax rusticola
Woodpigeon	Columba palumbus
Wren	Troglodytes troglodytes
Yellow Wagtail	Motacilla flava
Yellow Wagtail	Motacilla flava subsp. flavissima
Yellowhammer	Emberiza citrinella
Yellow-legged Gull	Larus michahellis

Appendix C: Desktop Study Maps

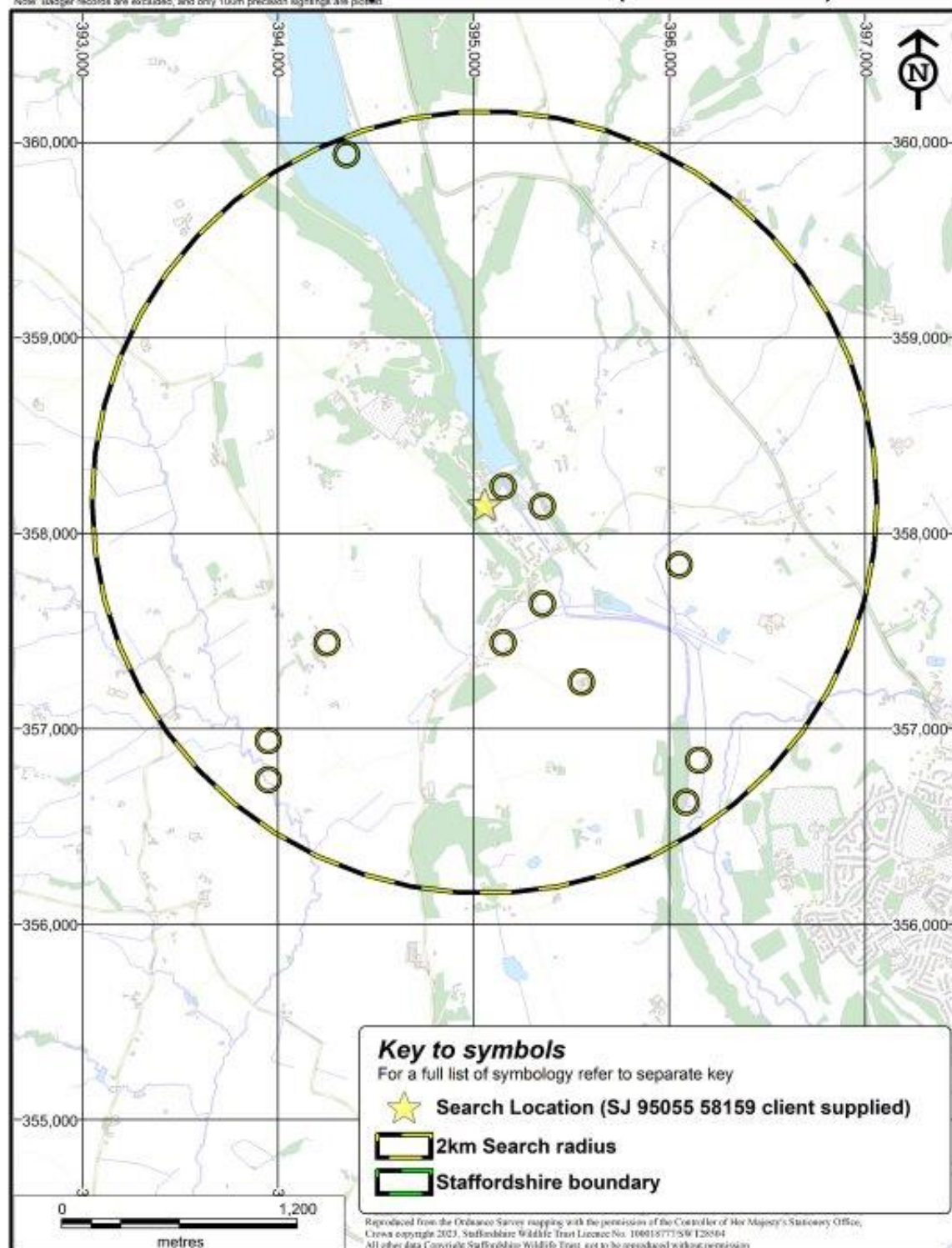
Staffordshire Ecological Record

The Wolsley Centre, Wolsley Bridge, Stafford, ST17 0WT Tel: 01889 880100 Fax: 01889 880101
Email: info@staffs-ecology.org.uk

SER/23/247

Bird Species within 2km of Rudyard Memorial Hall (SJ 95055 58159)

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



Staffordshire Ecological Record
The Wolsley Centre, Wolsley Bridge,
Stafford, ST17 0WT
Tel: 01889 880100 Fax: 01889 880101
Email: info@staffs-ecology.org.uk

A legend to the map showing Nature Conservation Sites and Species

Introduction

These colours are used on the site alert mapping within the SWT GIS, but SER cannot guarantee the same colours are used in any other mapping system, particularly those based on ArcView.

Statutory Designations from Natural England's web-site

National Nature Reserves	NNR (boundary not available owing to OS restrictions)
Sites of Special Scientific Interest	SSSI (boundary not available owing to OS restrictions)
Local Nature Reserves	LNR (boundary not available owing to OS restrictions)

Non-statutory Designations from the Staffordshire Grading System (1995 onwards)

Site of Biological Importance (ex Grade 1 SBI) equivalent to "Local Wildlife Site"
Biodiversity Alert Site (ex Grade 2 SBI)
Proposed/potential Site of Biological Importance

Geological Sites

Regionally Important Geological/geomorphological Site (= Local Geological Site)

Staffordshire Wildlife Trust Sites

SWT Nature Reserves

Other Nature Reserves

Royal Society for the Protection of Birds

Species Information

Mammals excluding those listed below Otter (<i>Lutra lutra</i>) Badger (<i>Meles meles</i>) - not normally supplied Water Vole (<i>Arvicola terrestris</i>) All bat species All bird species Any other protected species (precise to 100m) All Protected Species Records (precise to 1km)	Amphibians and reptiles excluding those below Great Crested Newt (<i>Triturus cristatus</i>) Native Crayfish (<i>Austropotamobius pallipes</i>) Flowering plants except those below Bluebell (<i>Hyacinthoides non-scripta</i>) Butterflies and Moths BAP Species Records (precise to 100m) BAP Species Records (precise to 1km)
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Ancient Woodland Inventory

Ancient & Semi-natural Woodland
Ancient Replanted Woodland

Notes:

The Local Nature Reserve and other nature reserve boundaries can overlay the current grading when both layers are actively visible

Where there are multiple species records for the same grid reference the dot for one species may obscure the dots for other species - all species records will be displayed in the accompanying spreadsheet

Not all the above categories may be present on the accompanying map

Version 2.0 July 2011

M:\Workspcs\SER\EnquiryLegend.wor

Appendix D: Photographic Records**Plate 1:** A photograph of north-eastern elevation of **B1**.**Plate 2:** Photograph of the rendering present on **B1**.

Plate 3: Photograph of the south-western elevation of **B1**.



Plate 4: Evidence of the gaps at the ridge of **B1** (circled in red).



Plate 5: Photograph of the internal void of **B1**.



Plate 6: Further image of the internal void of **B1**, showing how one half of the roof is lined with bitumen felt (right), and the other with timber sarking (left).



Bat Activity Survey Report

Appendix E: The Annual Bat Year (BCT)

A Year in the Life of a Bat			
January		February	
	Hibernating; using up fat reserves.		Still hibernating; few fat reserves left.
March		April	
	Some activity; occasional bat seen feeding.		Awake and feeding at night.
May		June	
	Females looking for nursery sites.		Young born, usually only one.
July		August	
	Young still suckling.		Young start catching insects; females leave nursery to find males.
September		October	
	Mating season begins; start building fat reserves for hibernation.		Search for suitable hibernation site.
November		December	
	Hibernation begins although still some activity in warm weather.		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 2017
- 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 15:

In early 2012, the National Planning Policy Framework (NPPF) replaced much previous planning policy guidance, including Planning Policy Statement 9: Biological and Geological Conservation. The government circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact within the Planning System, which accompanied PPS9, still remains valid. A presumption towards sustainable development is at the heart of the NPPF. This presumption does not apply however where developments require appropriate assessment under the Birds or Habitats Directives. The latest National Planning Policy Framework was updated in February 2019, with the section in relation to conserving the natural environment being located within section 15.

Section 15, on conserving and enhancing the natural environment, sets out how the planning system should contribute to and enhance the natural and local environment by minimising impacts on biodiversity and, where possible, provide net gains in biodiversity. Opportunities to incorporate biodiversity gains into a development should be encouraged.

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.

Appendix G: 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 myotis 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.

9. Notice to Readers: Conditions of this Report

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

Elite Ecology agrees to supply ecological consulting services and advice of a preliminary or thorough nature as advised or commissioned. Upon commissioning Elite Ecology to undertake the work, the client(s) grant access to the site upon the agreed date. If no site access is available upon this date, Elite Ecology holds the right to charge the client(s) for lost staffing time and additional travel costs.

Elite Ecology undertake all site surveys with reasonable skill, care, and diligence, within the terms of the contract that has been agreed with the client and abiding by the Elite Ecology Terms and Conditions. The actions of the surveyors on site, and during the production of the report, were undertaken in accordance with the Code of Professional Conduct for the Chartered Institute of Ecology and Environmental Management.

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.

Should any equipment be damaged or lost on site at the fault of the client(s), then Elite Ecology withholds the right to charge 100% above the current market value for that exact product or the nearest similar product.

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.

Elite Ecology has been provided with full payment for this report and thus the product has been released to the client(s) for the purpose of their planning application. If any part of the report is lost or altered without the written permission of Elite Ecology, then the entire report becomes invalid. Due to the potential for continual change within the natural world, this report is valid for **2 years only** from the date of the last survey visit. If this report is submitted after the 2-year deadline, then a further updated inspection will be required to ascertain whether the site remains in the same condition as it was when initially inspected.

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.