



Elite Ecology

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Rudyard Memorial Hall, Rudyard



Bat Mitigation Statement

November 2024



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Bat Mitigation Statement

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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.

This report is to address condition 16 of the planning approval which states:

“No works to the building shall commence until a specification for bat accommodation following current best practice guidance is submitted to and approved in writing by the Local Planning Authority. The approved bat accommodation shall be provided prior to the first occupation of the building and thereafter retained.

Reason:- In the interests of the ecological value of the site.”

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.

2. Results

2.1 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 roofs 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.

2.2 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.

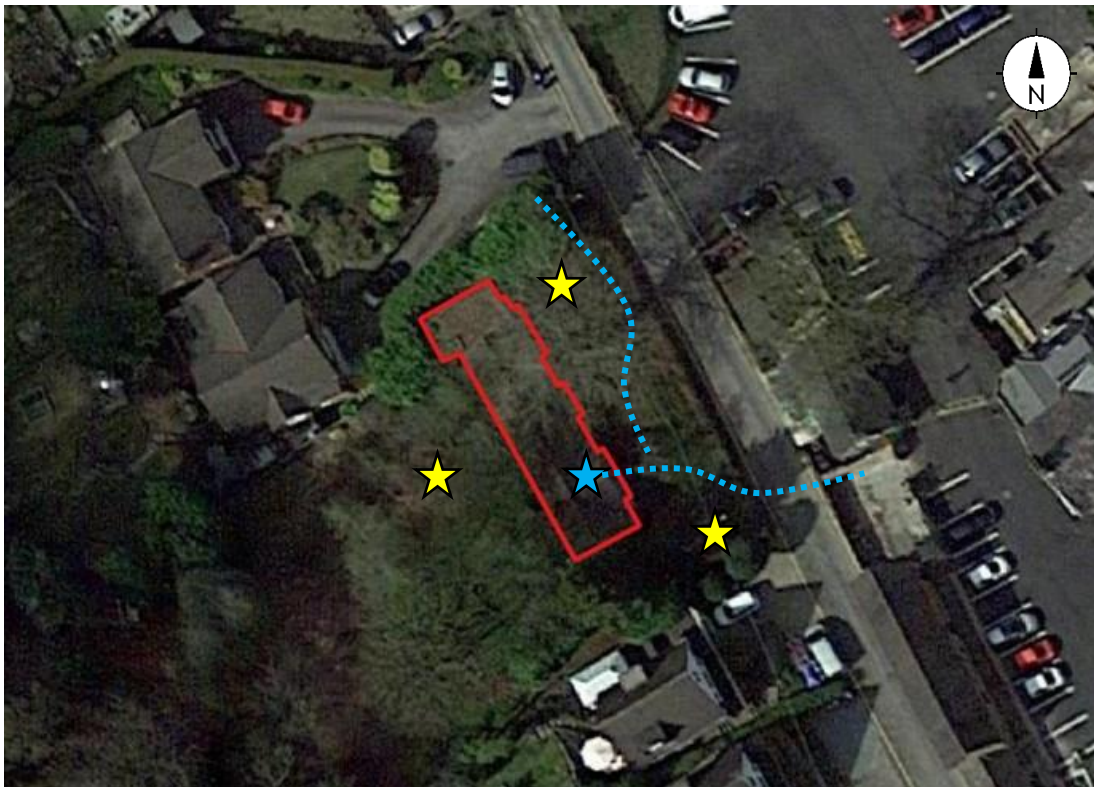
^b Multiple survey visits should be spread out to sample as much of the recommended survey period (see Table 7.1) as possible; it is recommended that surveys are spaced at least two weeks apart, preferably more. A dawn survey immediately after a dusk one is considered only one visit.

2.3 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.

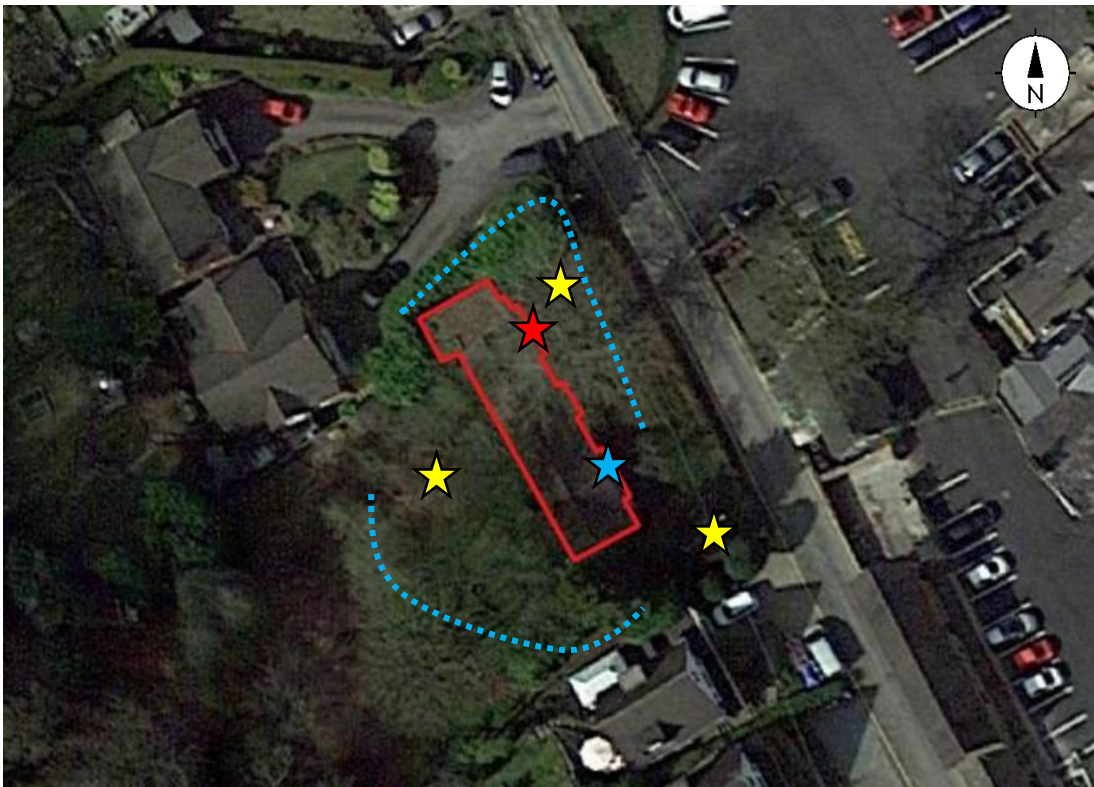


Activity Survey 2 (12th of June 2023):

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.

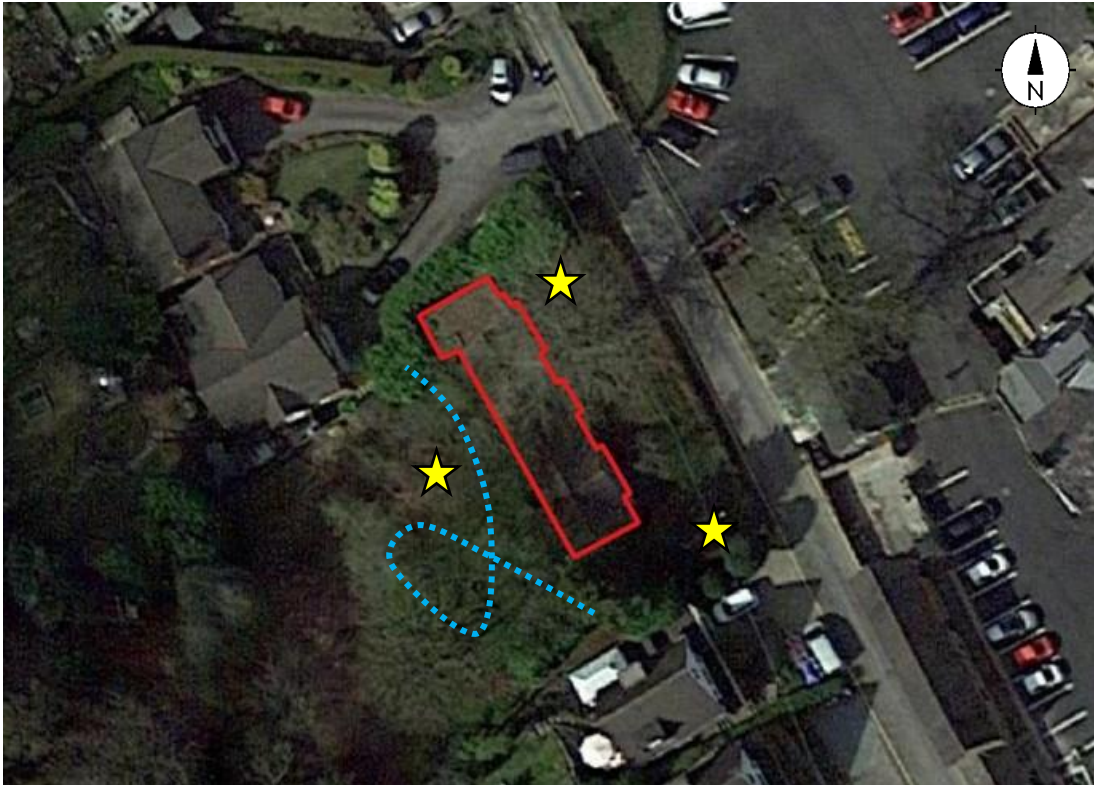
Figure 5: An aerial photograph of the surveyed building during the first activity survey (yellow stars). The blue star shows the re-entry point from the Daubenton's (*Myotis daubentonii*) bat, with the red star illustrating the common pipistrelle re-entry point. The common bat flight paths are shown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

3. Impact Assessment

3.1 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

3.2 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:

3.2.1 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.

3.2.2 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).

3.2.3 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.

4. Recommendations

4.1 Timings of the Works

Works on the structure and trees should only take place 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 work.

4.2 Avoidance Measures

At the start of the proposed works, a licenced bat ecologist is required to be on site to conduct a toolbox talk prior to works commencing. On the morning prior to the commencement of the works, two [1FS Schwegler Large Colony Bat Box](#) (one per species) or similar is required to be installed on a nearby tree facing north for emergency purposes.

The building will then be thoroughly inspected by a licenced bat ecologist (both externally and internally), including through the use of an endoscope to check for any anecdotal presence of bats. This will check all cracks/crevices around the affected areas.

If bats or evidence of bats are found during the site visit, works must cease and a European Protected Species Mitigation Licence will be required from Natural England.

If any bats are harmed or injured during the works, the local bat group will be contacted.

4.3 Mitigation

It will be necessary to compensate for the loss of the common pipistrelle roost. This will be to include six [Integrated Eco Boxes](#) are installed on the structure as close to the existing roost as possible. These should be placed where the timber slats are currently located, with two on each section. In addition to this, two boxes will be installed on the south-western elevation, to provide alternative roosting locations.

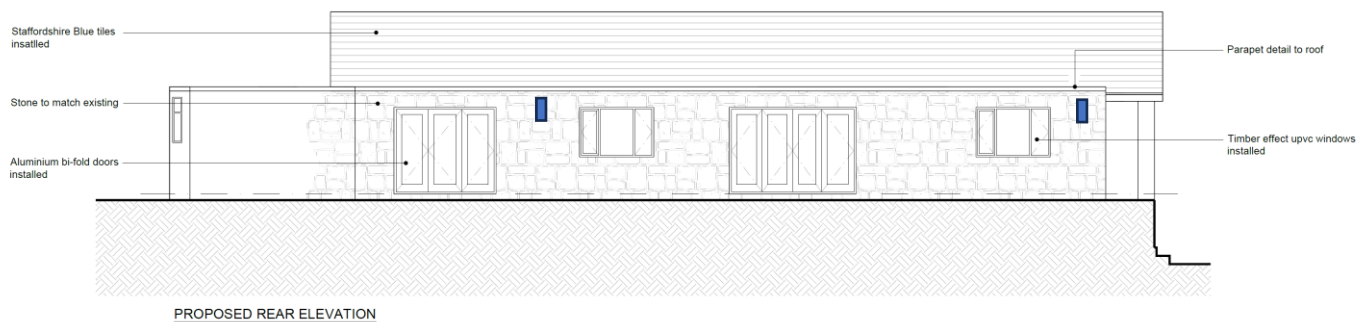
All compensation features also need to avoid any artificial lighting effects.

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Figure 3: Front elevation plans showing the location of the Integrated Eco Bat Box (blue shape).



Figure 4: Rear elevation plans showing the location of the Integrated Eco Bat Box (blue shape).



5. References

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Rydell J & Racey, P A (1993). Street lamps and the feeding ecology of insectivorous bats. Recent Advances in Bat Biology, *Zool Soc Lond Symposium abstracts*.

UK Biodiversity Action Plan (2007). *UK List of Priority Species*. Joint Nature Conservation Committee. [Online]. Available at: <http://www.ukbap.org.uk/NewPriorityList.aspx>.

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6. 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

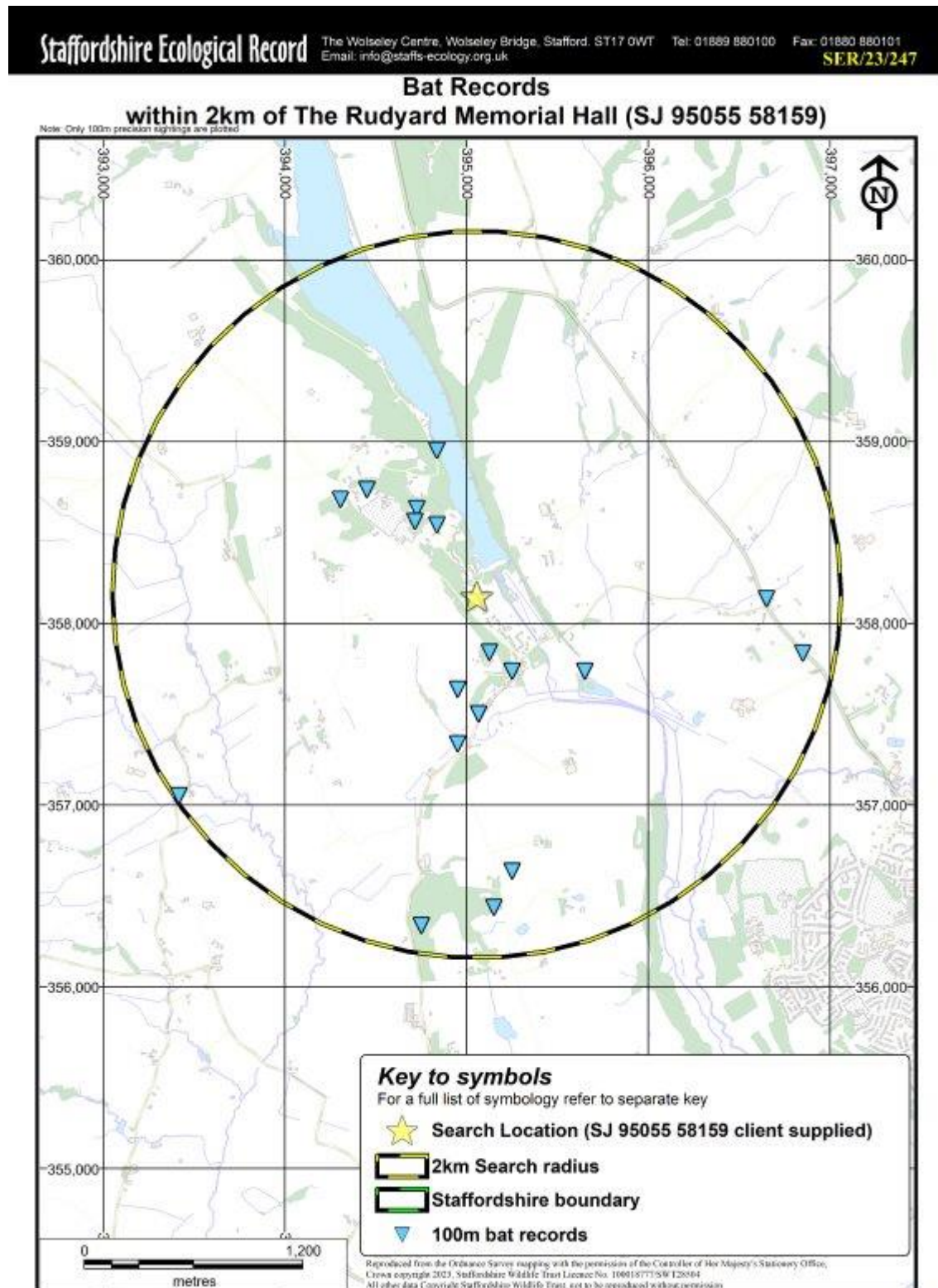
Appendix G: Artificial Lighting and Bats

Appendix A: Site Plans



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

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

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).



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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.