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High Ling Bank, Cumbria

Ecological Constraints Study; 2024

AVISON YOUNG

VERSION 2

Final

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1. Introduction

BiOME Consulting Ltd was commissioned by Avison Young in November 2018 to undertake a Preliminary Ecological Appraisal (PEA) (including a desk study)[1] of a property proposed for remedial works. This property, High Ling Bank (the 'site'), Cumbria, is centred on National Grid Reference NY 05133 04486 (**Figure 1**). Following this PEA, dedicated bat[2] surveys were completed with update surveys in 2023[3].

Figure 1. Site location

Works have been delayed and due to the amount of time that has elapsed since the completion of these surveys, and in line with relevant guidelines[4], an update PEA/Ecological Constraints Study (ECS) and single nocturnal bat survey were deemed necessary to inform the proposed works.

1 BiOME Consulting Ltd (2018). *High Ling Bank, Cumbria. Preliminary Ecological Appraisal*
2 BiOME Consulting Ltd (2020). *High Ling Bank, Cumbria. Bat Survey Report; 2020*
3 BiOME Consulting Ltd (2023). *High Ling Bank, Cumbria. Ecological Constraints Study; 2023*
4 CIEEM (2019). *Advice Note on the Lifespan of Ecological Reports & Surveys*

At the time of writing, the scope of works includes demolition of the house within the site, although it is understood that further works may also occur.

1.1. Site Description

The site is located between the village of Gosforth and Sellafield Nuclear Power Station, in western Cumbria (**Figure 1**).

The site layout is shown on **Figure 2**, four buildings were present within the site:

- **House:** located in the southeast of the site, had rendered walls with the exception of the southern gable end which was stone and mortar. A small stone lean-to outbuilding was present at the southern gable. It had a pitched slate roof, with a glazed conservatory present adjoining the south-eastern corner.
- **Stone barn;** located in the north of the site and was constructed in stone and mortar, with a pitched slate roof which exhibited holes/slipped tiles in places.
- **Outbuilding 1;** located in the southern corner of the site, was constructed of stone and mortar with a pitched slate roof.
- **Outbuilding 2;** located adjacent to the western boundary, was constructed in stone and mortar with a pitched slate roof. The northern end of this building was enclosed, with an open-fronted store at its' southern end.

The buildings were accessed via a driveway to the north and enclosed a gravel/concrete yard area. Gardens/amenity grassland were present to the east, associated with the house. Further out, mixed woodland predominated to the south and west, with improved grassland fields present to the east and north (over a minor road).

Figure 2. Site layout

2. Existing Survey Data

The key results of the previously completed surveys are detailed below.

2.1. PEA – 2018

The site comprised common habitat types (amenity grassland, buildings and ornamental planting), none of which were considered to have any intrinsic ecological value.

In relation to the proposed works, the following potential issues were identified during the site survey/desk study, with consequent recommendations:

- Evidence of bat use (droppings) was identified within the house and stone barn, and all buildings within the site were considered of moderate suitability for roosting bats. Nocturnal surveys were recommended to evaluate if/where bats are roosting in the buildings to be impacted by the proposed works, in addition to identifying which bat species are present and numbers/type of roosts.

- Although no Badger *Meles meles* evidence was noted, the occasional presence of foraging Badgers was considered possible and precautions to ensure that this species is protected from harm during construction operations are recommended.

- The site supported common nesting bird species.

- Rhododendron was present within and in the vicinity of the site

No other legally protected species or species of particular nature conservation value are considered likely to be present or represent a potential constraint to development.

2.2. Bat Surveys – 2020

Day-roosting bats were recorded in three of the four buildings that were surveyed in spring/summer 2020:

House– peak count of two Soprano Pipistrelles *Pipistrellus pipistrellus*.

Stone Barn – Maxima of five Brown Long-eared Bats *Plecotus auritus*, five Soprano Pipistrelles and a single Whiskered *Myotis mystacinus*/Brandt's Bat *Myotis brandti*.

Outbuilding 1 – Up to three Brown Long-eared Bats and one Natterer's Bat *Myotis nattereri*.

No evidence of larger or more important (e.g. maternity) roosts were identified and it was considered that the results accurately reflected the status of roosting bats during spring/early summer 2020.

2.3. Update Ecological Constraints Study – 2023

The updated PEA/ECS conducted on 26 June 2023 did not suggest any significant changes to the observations made during the previous PEA.

The buildings were in near-identical condition to during the original PEA and nocturnal bat surveys, and the previous conclusions of the PRA remain valid. No bat evidence was found on the building exteriors. The results of the update nocturnal surveys are provided below:

House: Peak count of seven roosting Soprano Pipistrelle.

Stone Barn: No roosting bats.

Outbuilding 1: No roosting bats.

Outbuilding 2: No roosting bats.

3. Methodologies

3.1. Suitably Qualified Ecologist

Fieldwork and assessment were managed and completed by an experienced ecologist, Martyn Owen MCIEEM (Natural England (NE): 2022-10620-CL18-BAT, Natural Resources Wales (NRW) bat licence number: SO89604-1).

The emergence survey was completed by Martyn Owen, Steven Forrester and Rhys Owen. All are highly experienced nocturnal bat surveyors and have completed many similar surveys in the past.

3.2. Desk Study

A comprehensive desk study was completed previously. Further desk study was not considered necessary to inform this 2024 ECS.

3.3. Preliminary Ecological Appraisal Survey

An update PEA survey[5],[6] was undertaken on 29 July 2024, in excellent weather conditions. During the survey all areas within the site and site boundaries were walked and habitat types assessed. Signs of protected species, invasive plants (*i.e.* those included on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended)) and other notable species were also searched for during the survey, as well as noting habitats considered to have the potential to support protected species.

5 Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn). The Bat Conservation Trust, London

6 CIEEM (2017) *Guidelines for preliminary ecological appraisal* [online] available at: https://www.cieem.net/guidance-on-preliminary-ecological-appraisal-gpea- (accessed 28 July 2023)

3.4. Bats

3.4.1. Preliminary Roost Assessment

An update Preliminary Roost Assessment (PRA) survey[7] was completed on 29 July 2024. This survey was completed in suitable weather conditions (overcast and dry). Prior to the completion of the site survey, aerial imagery was reviewed[8].

The survey involved an inspection of the interior (where accessible) and exterior of the buildings to identify potential or actual bat access points and roosting sites, and to locate any evidence of bats such as live or dead specimens, bat droppings, urine splashes, fur-oil staining and/or squeaking/scratching noises. It should be noted that sometimes bats leave no visible sign of their presence on the outside of a building (and even when they do wet weather can wash away evidence).

The inspection was facilitated by the use of ladders, binoculars, a high-powered torch, endoscope and small dental mirrors to inspect accessible crevices with the potential to support bats.

The potential suitability of the buildings to be impacted by the proposed works for roosting bats was assessed in line with relevant guidelines[2] and allocated to one of the categories detailed within **Table 1**.

Table 1. Guidelines for assessing the roost potential of proposed development sites for bats

Suitability	Description of Roosting Habitats
None	No habitat features on site likely to be used by roosting bats at any time of year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels.
Negligible	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion

7 Collins, J. (ed.) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn.). The Bat Conservation Trust, London

8 Google Maps [online] available at: https://www.google.co.uk/maps (accessed 1 June 2023)

Suitability	Description of Roosting Habitats
Low	A structure/tree with one or more potential roost sites that could be used by individual bats opportunistically at any time of year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (*i.e.* unlikely to be suitable for maternity and not a classic cool/stable hibernation site, but could be used by individual hibernating bats).
Moderate	A structure/tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure/tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.
Confirmed Roost	Definitive evidence of roosting bats, i.e. live animals or accumulation of droppings associated with Potential Roost Features (PRF).

All buildings/structures were also inspected/assessed for hibernation potential as well as evidence of bats and categorised in line with the criteria detailed within **Table 2**.

Table 2. Guidelines for assessing the hibernation potential of proposed development sites for bats

Suitability	Description
None/ Very Limited	A structure unlikely to support hibernating bats.
Classic Site	Often underground (e.g. tunnels, caves, mines, cellars) but may also be above ground. (e.g. some ice houses and lie kilns) and they provide cool, stable and damp conditions favoured by some species for winter torpor and hibernations.

Suitability	Description
Non-Classic Site	Void dwelling species (notably Brown Long-eared bat and Serotine) can linger in buildings into the winter but may not be visible to surveyors during inspection. Pipistrelles are often found roosting individually in more exposed/thermally unstable conditions.

3.4.2. Emergence/Re-entry Surveys

One update nocturnal emergence survey was completed (**Table 3**). To ensure coverage of all areas which could support roosting bats the survey was completed from six survey locations, overseen by three surveyors (**Figure 2**).

Electronic bat detectors (EM Touch Pro 2) and infrared cameras were deployed at each survey location. Sound files were analysed with appropriate bat analysis software (Kaleidoscope) once the surveys were completed. Infra-red cameras (Canon XA60) and additional infrared lighting (Nightfox XB5 IR and flood lamps) were used, with cameras positioned to ensure that all areas that may be impacted directly or indirectly were covered. Following the survey, recorded footage was analysed.

The nocturnal bat survey was undertaken in weather conditions appropriate for surveys of this kind (**Table 3**).

Table 3. Survey details

Date	Surveyors	Sunset	Time		Cloud (octets)	Wind (Beaufort/ Direction)	Min. Temp (°C)	Precip.
			Start	Finish				
31/07/2024	MO/SF/ RO	21:15	21:00	23:00	5-6	1-2 WSW	17	Nil

Figure 2. Surveyor (blue dots) and IR camera locations (red circles)

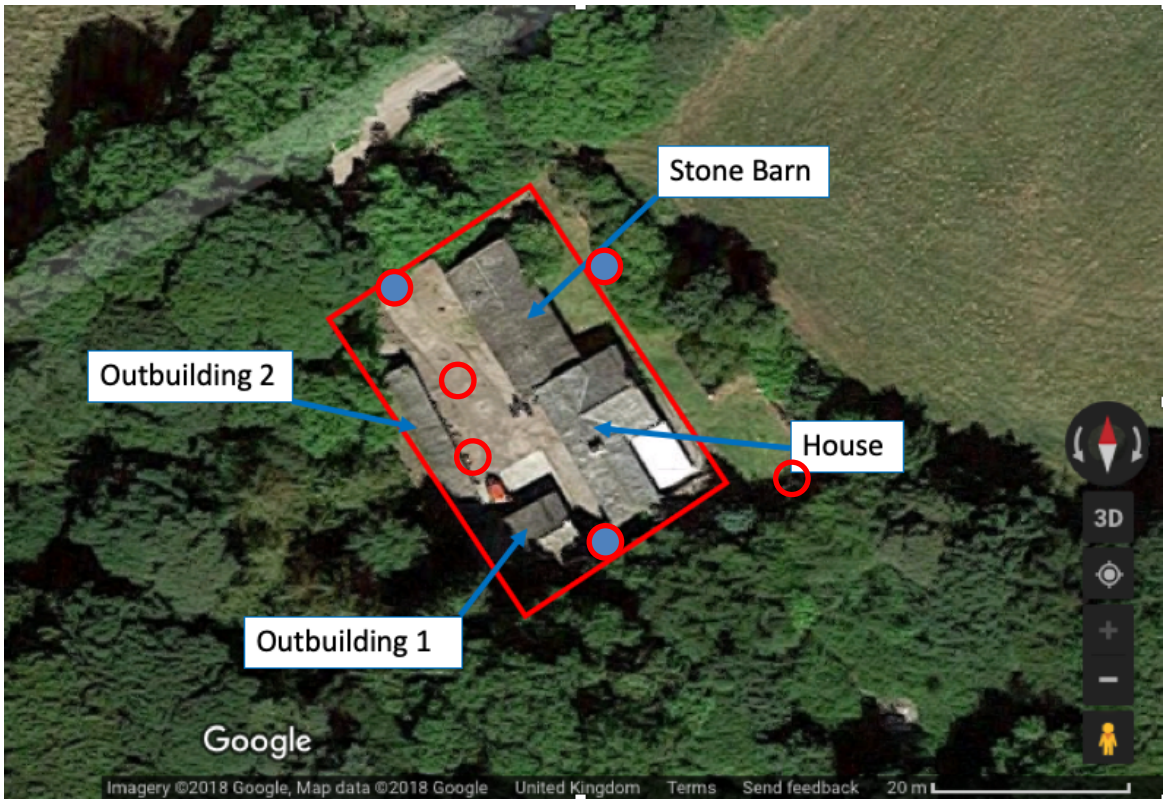


Plate 1. View from each infrared camera at survey end




3.5. Limitations

The findings presented in this study represent those at the time of survey and reporting, and data collected from available sources. Ecological surveys are limited by factors which affect the presence of plants and animals, such as the time of year, migration patterns and behaviour.

With the exception of Outbuilding 1, no access was possible to the interior of the buildings on site.

4. Results

4.1. PEA Site Survey

The updated PEA/ECS conducted in July 2024 did not suggest any significant changes to the observations made during the previous PEA.

4.2. Bats

The buildings were in near-identical condition to during the original PEA and nocturnal bat surveys, and the previous conclusions of the PRA remain valid. No bat evidence was found on the building exteriors or within Outbuilding 1.

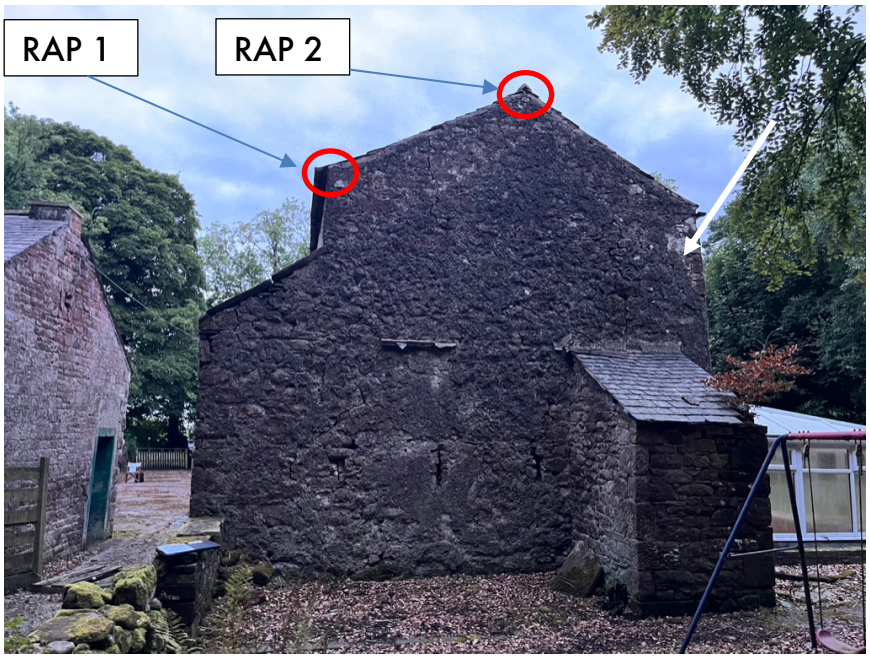
Based on site knowledge from previous surveys and the update surveys detailed within this report, the site was assessed to be of **NON-CLASSIC** hibernation potential (**Table 2**) due to the absence of optimal features to support hibernating bats, although it is possible that individual bats may be present. Further survey work is not deemed necessary as any surveys would be unlikely to return results[7].

The results of the update dusk emergence survey are provided below.

House: Three Soprano Pipistrelle exited day roosts in the house;

- Two roosted at the eaves on the southern gable (singles at Roost Access Point (RAP) 1 and RAP 2 – **Photograph 1)**; and
- One roosted within a wall crack on the eastern façade (RAP 5, **Photograph 2**).

Photograph 1. RAP 1 and 2



Photograph 2. RAP 4

It is considered highly likely that these bats roosted in close proximity to their emergence points.

Stone Barn: Two Brown Long-eared Bats emerged from day roosts within the stone barn via RAP 5. The roost location of these bats was not determined

Photograph 3. RAP 5

Outbuilding 1: No bats emerged.

Outbuilding 2: No bats emerged.

4.3. Invasive Non-native Species

Rhododendron is present within, and in the vicinity of, the site. No other INNS of plant (listed on Schedule 9 of the Wildlife & Countryside Act 1981 (as amended) were observed during the survey.

4.4. Other Species

The results of the update PEA in relation to other species/habitats remained consistent from the previous surveys.

5. Conclusions and Recommendations

An update PEA survey and re-entry bat survey has been completed. Prior to demolition further additional survey/assessment works are required.

5.1. Bats

5.1.1. Summary

Bat surveys completed (during 2020, 2023 and 2024) in line with best practice guidance concluded that the buildings on site are confirmed day roosts of:

House: Peak count of seven Soprano Pipistrelles.

Stone Barn: Maxima of five Brown Long-eared Bats, five Soprano Pipistrelles and a single Whiskered/Brandt's Bat.

Outbuilding 1: Up to three Brown Long-eared Bats and one Natterer's Bat.

No evidence of larger or more important (e.g. maternity) roosts were identified and it is considered that the results accurately reflect the status of roosting bats within the site.

Outbuilding 2: No bats roosted.

Any works that could destroy/modify a bat roost/access point or disturb[9] roosting bat/s will require a Natural England licence to enable the works to be completed legally.

5.1.1. Natural England Licencing

The confirmation of roosting bats that will be impacted means that a licence from Natural England will be required to enable the proposed works to proceed lawfully. Following submission of appropriate forms, the application takes up to 30 working days to be assessed by Natural England.

9 Disturbance of animals in this context includes in particular any disturbance which is likely—(a) to impair their ability (i) to survive, to breed or reproduce, or to rear or nurture their young; or (ii) in the case of animals of hibernating or migratory species, to hibernate or migrate; or (b) to affect significantly the local distribution or abundance of the species to which they belong.

No works that may disturb roosting bats or prevent access to a potential bat roost should be completed until a licence is in place.

5.1.2. Timing of Works

There are no restrictions with regards to when (e.g. certain months of the year) works can take place, although it would be best practice to avoid low winter temperatures when bats may be in torpor (pipistrelles can use the same roosts year-round).

To inform the licence application surveys must have been completed during the most recent bat active season. Consequently, if works do not occur before May 2025 at least one update survey will be required.

5.1.3. Supervision of Works

Works in the area of roosts will need to be supervised by Suitably Qualified Ecologist (SQE). Prior to works commencing, the SQE would provide a 'toolbox talk' to those contractors on site in which details of e.g. best working practices and what to do in the event of discovering a bat would be discussed.

During supervised works to the area of the roosts the SQE would capture any bats that do not fly away and move them to a temporary bat box (erected on a nearby tree/structure prior to works commencing).

These works (when capture/handling and exclusion of bats is possible) should ideally take place in conditions suitable for bats to be active (spring-autumn inclusive). However, works can also be undertaken in the winter as long as weather conditions allow (sunset temperature of at least 8˚C on preceding 2+ days).

5.1.4. Compensation

Mitigation will be required for the loss of bat roosts. Once the full scope of works has been determined, the impacts to roost should be assessed and appropriate mitigation identified.

5.2. Nesting Birds

Due to the potential presence of nesting birds within all buildings on site, any works with the potential to impact nests should ideally be completed outside the

bird nesting season (1 March to 31 August). If demolition works must be undertaken during the nesting season, a survey to identify any nests which may be impacted will be required. Should an occupied bird nest (of any species) or a nest in the process of being constructed be encountered, works must cease in this area and should only re-commence once the birds have fledged or the nest is abandoned.

5.3. Badger

No Badger setts were present within the site or adjacent areas. Nevertheless, the occasional presence of foraging Badgers is considered possible; it would therefore be prudent to consider Badgers during demolition works, this may include (if relevant):

- covering trenches at the conclusion of each working day, or include a means of escape for any animal falling into excavations, and
- any temporarily exposed open pipe system should be capped in such a way as to prevent Badgers gaining access.

5.4. Invasive Plants

Rhododendron is present within and in the vicinity of the site; this plant should be removed wherever the opportunity exists to do so in line with best practice guidance[10].

5.5. Other Species

No further works in relation to other species are considered necessary.

5.6. Report Validity

The findings of this report are considered valid until 1 June 2025[11]. If the works are delayed beyond this period, update survey/s will be required.

10 Edwards, C. (2006). *Practice Guide; Managing and Controlling Invasive Rhododendron*. Forestry Commission

11 CIEEM (2019). *Advice Note on The Lifespan of Ecological Reports and Surveys* [online] available at: https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf