



Stable Block at Knolton Hall

Knolton

LL13 0LG

Bat Survey Report

MOSS COMPANY LLP

VERSION 2

Final

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Executive Summary

BiOME Consulting Ltd was commissioned by Moss Company LLP (in June 2021) to undertake nocturnal bat surveys of a 1950's stable block located in the grounds of Knolton Hall, Knolton. The stable block, which comprised six component stables/storage rooms, was constructed of red brick with an unlined slate roof on a wooden frame.

A Preliminary Ecological Appraisal (PEA) was completed in 2019. The ecology surveys detailed within this report were completed in order to determine the status of bats within the stable block and also considered the presence of nesting birds.

The ecological issues identified during the completed surveys were:

Bats: A Preliminary Roost Assessment and emergence/re-entry surveys (two) failed to find any evidence of roosting bats, and bat roosts are therefore considered likely absent. No further works in relation to roosting bats are required, however, in the apparently unlikely event that bats are disturbed during the works, all works must stop immediately, and the advice of a Suitably Qualified Ecologist (SQE) sought.

A sympathetic lighting plan should be developed to ensure that impacts to foraging bats are minimised.

Nesting birds: If re-development works are proposed for the bird nesting season (March-August inclusive), it will be necessary to appoint a SQE to complete a check for active birds' nests within the buildings to be impacted by the proposals. Should any active nests be found then it would be necessary to delay works until the nesting attempt has reached a natural conclusion. If works are planned for outside of the bird nesting period then no such check is necessary.

To compensate for the loss of Swallow nest sites, it is recommended that two artificial Swallow nest cups are installed within on site buildings.

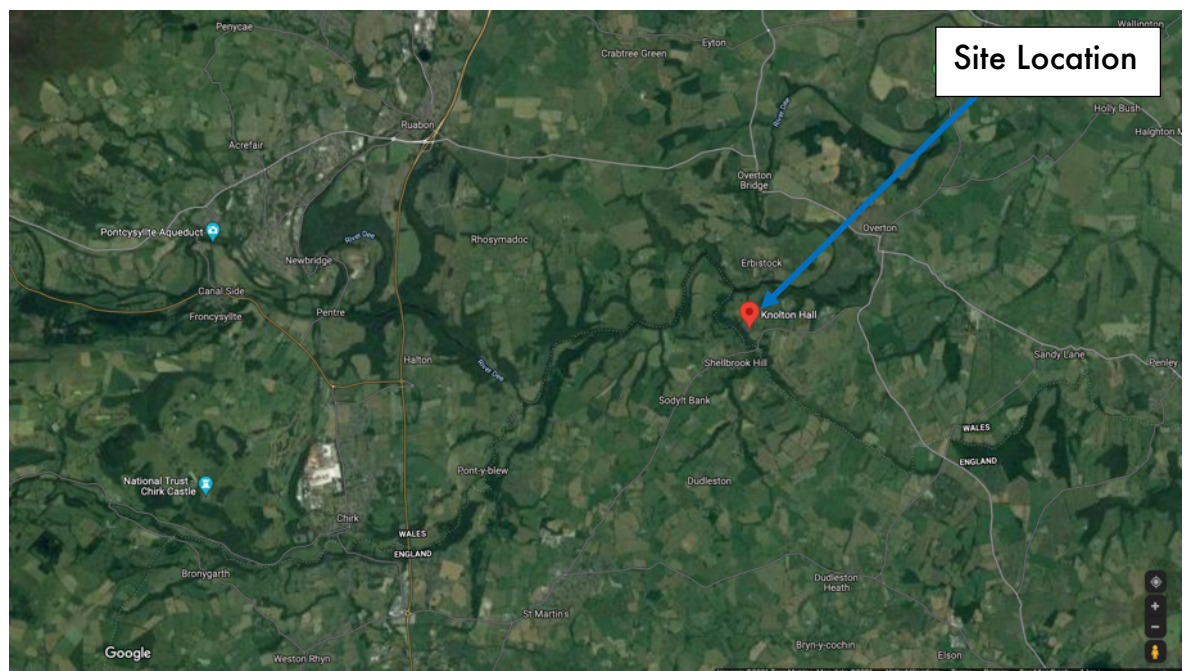
1. Introduction

BiOME Consulting Ltd was commissioned by Moss Company LLP (in June 2021) to undertake nocturnal bat surveys of a 1950's stable block located in the grounds of Knolton Hall, Knolton (LL13 0LG) (Figure 1).

A Preliminary Ecological Appraisal (PEA) was completed in 2019¹, which included the wider site as well as the stable block. A revised layout is proposed, which now requires the removal of the stables. The Local Planning Authority therefore requested nocturnal bat surveys of the stable block be completed to support the application, which are the subject of this report.

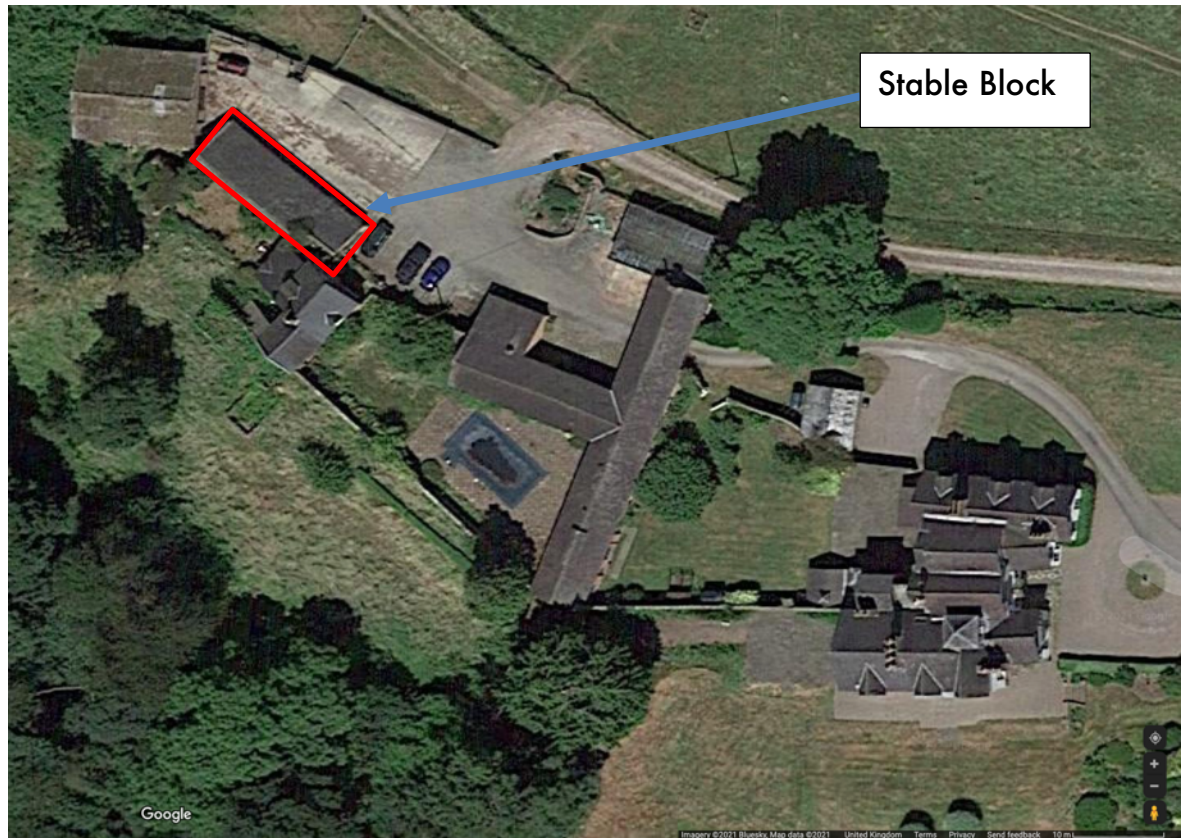
The ecology surveys detailed within this report were completed in order to determine the status of bats within the stable block.

Figure 1. Site location



¹ Arbor Vitae (2019). *Preliminary Ecological Appraisal; Knolton Hall*

Figure 2. Site layout



Photograph 1. The stable block



1.1. Site Description

Knolton Hall is located c.2km southwest of the village of Overton (**Figure 1**) and approximately 100 metres on the Welsh side of the national boundary. It is situated in a remote rural location within a landscape of parkland, woodland and pasture. The agricultural buildings were once used as part of a small farm but have been unused agriculturally for some years.

The stable block comprised six component stables/storage, and exhibited a single-pitch roof. The walls were constructed of red brick with an unlined slate roof on a wooden frame.

1.2. Development Proposal

It is proposed to demolish the stable block.

2. Existing Survey Data

A site survey was completed in February 2019¹. No evidence of bats was found within the stable block and the building was assessed to be of low to moderate suitability as a roost site.

3. Legislative Context

All native bat species and the sites that they use for breeding or resting are afforded protection through the provisions within Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Species and Habitat Regulations 2018. It is therefore an offence, without a licence from the relevant Statutory Nature Conservation Organisation (SNCO), to intentionally or recklessly kill or injure bats; to disturb, obstruct, damage or destroy their active roosts (including when those roosts are unoccupied) or to take, possess or trade in bats and their parts (alive or dead).

Disturbance in the context of the offences above is disturbance which is likely to impair the ability of animals to survive, to breed or reproduce, to nurture their young, to hibernate, to migrate; or to affect significantly the local distribution of the species.

Four species of bat, Greater Horseshoe Bat *Rhinolophus ferrumequinum*, Lesser Horseshoe Bat *R. hipposideros*, Bechstein's Bat *Myotis bechsteinii* and Western Barbastelle *Barbastella barbastellus*, are included on Annex II of the Habitats Directive, which requires the designation of Special Areas of Conservation to ensure the maintenance of favourable conservation status (and these are therefore generally considered as perhaps the most important UK species).

The Environment (Wales) Act 2016 places the duties on public bodies in Wales to conserve and enhance biodiversity in the exercise of their functions. This duty includes consideration of the resilience of ecosystems in terms of their diversity, connectivity, adaptability, scale and condition. The Act also reinforces the duties in relation to the lists of species and habitats of importance and duties to conserve and enhance those species and habitats. These are referred to as Section 7 (S7) Habitats and Species. Eight species of bat are included on S7; Barbastelle, Bechstein's Bat, Noctule *Nyctalus noctula*, Common Pipistrelle *Pipistrellus pipistrellus*, Soprano Pipistrelle *Pipistrellus pygmaeus*, Brown Long-eared Bat *Plecotus auritus*, Greater Horseshoe Bat and Lesser Horseshoe Bat.

A licence can be granted by Natural Resources Wales (NRW) for developments (sometimes referred to as European Protected Species (EPS) Licences or Derogation Licences) providing the purposes of the licence is for "preserving public health or public safety or other imperative reasons of overriding public

interest including those of a social or economic nature and beneficial consequences of primary importance for the environment”.

4. Methodologies

4.1. Preliminary Roost Assessment

A Preliminary Roost Assessment (PRA) survey² was undertaken on 10 August 2021 by an experienced ecologist, Martyn Owen MCIEEM. Martyn holds survey licenses in relation to Great Crested Newt *Triturus cristatus*, bats (NRW bat licence number: SO89604-1) and a variety of Schedule 1 birds (including Barn Owl *Tyto alba*). This survey was completed in suitable weather conditions (sunny/dry). Prior to the completion of the site survey, aerial imagery was reviewed³.

The survey involved a systematic search of the exterior of the stable block 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 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 external inspection also included the examination of the ground, particularly beneath any potential bat access points.

A systematic search of the interior of the stable block was also completed, searching for actual/potential bat access points, roosting sites and to locate any evidence of bats (e.g. live/dead specimens, droppings, urine splashes, fur-oil staining, feeding remains (such as moth wings), squeaking noises, bat-fly *Nycteribiidae* or odour). Again, it should be noted that occasionally bats leave no visible sign of their presence in a building's interior, particularly when there are hidden cracks, crevices and/or voids.

The inspection of buildings and built structures for evidence of bats, which can be conducted at all times of year was facilitated by the use of ladders, a high-powered torch, endoscope and small dental mirrors to inspect accessible crevices considered likely to support bats. Weather conditions on the day of the survey were appropriate for undertaking ecological fieldwork (sunny and dry).

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

3 Google Maps [online] available at: <https://www.google.co.uk/maps> (accessed 8 September 2021)

The potential suitability of the buildings for roosting bats was assessed in line with relevant guidelines² and allocated to one of the categories detailed within **Table 1**.

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

Suitability	Description of Roosting Habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A structure/tree with one or more potential roost sites that could be used by individual bats opportunistically. 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 or hibernation).
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 – the assessments 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.
Confirmed Roost	Evidence of roosting bats present, i.e. accumulations of droppings, live animals etc.

4.2. Emergence/Re-entry Surveys

Following the identification of features with the potential to support roosting bats, two emergence/re-entry bat surveys were completed (**Table 3**).

Surveys were managed by Richard Moores MCIEEM and completed by Martyn Owen and Steven Forrester, all of whom are experienced nocturnal bat surveyors.

Two emergence/re-entry surveys were completed. To ensure coverage of all potential bat access points into the stable block, the survey was completed by two surveyors, positioned on the northern and southern sides of the building.

Surveyors were equipped with electronic bat detectors (EM Touch Pro 2 and/or Peersonic) and sound files were analysed with appropriate bat analysis software

(Kaleidoscope) once the surveys were completed, if necessary. Infra-red cameras were used during the survey, with cameras positioned to achieve coverage of areas of the roof and the interior, with footage reviewed at the conclusion of each survey.

The nocturnal bat surveys were undertaken in weather conditions considered appropriate for surveys of this kind (Table 2).

Table 2. Nocturnal bat activity survey information

Date	Surveyors	Sunset/ rise	Time		Cloud (octets)	Wind (Beaufort/ Direction)	Temp (°C)	Precip.
			Start	Finish				
10/08/2021	MO & ST	20:50	20:35	22:50	1-2	0-1W	17 - 16	Nil
09/09/2021	MO & ST	06:35	05:00	06:50	8	0-1S	17 - 18	Nil

4.3. 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.

5. Results

5.1. Bats

Preliminary Roost Assessment

The stable block was a single-storey building with an unlined, single-pitch slate roof lined on a wooden frame. The red brick walls were in good condition with wooden-framed windows and doors present. Hay lofts were present above two sections. Full access was achieved, and comprehensive inspection of the interior was completed. No evidence of bat presence was found within the building. The roof covering was noted to be tight with potential access points for bats limited to open doors/windows and a gap in brickwork on the northern gable.

Two pipistrelle-type droppings were present on the floor of the yard near the stables, originating from a bat/s flying within the external area.

Overall, the stable block was considered to have **MODERATE** suitability (**Table 1**) for roosting bats on the basis that potential roost sites may be present, although it is unlikely that any of these could support large/significant numbers of bats or important roosts.

Nocturnal Survey - 10 August 2021 (Dusk)

No bats roosted within the stable block and activity was very low with low numbers of passes of Common Pipistrelle *Pipistrellus pipistrellus* and Soprano Pipistrelle *Pipistrellus pygmaeus* logged as well as occasional passes of Noctule *Nyctalus noctula* high overhead.

Nocturnal Survey – 9 September 2021 (Dawn)

No bats roosted within the stable block.

A Brown Long-eared Bat was present foraging within the yard between 05:19 and 05:21. A single pass of an unidentified *Myotis* bat species was logged at 05:51.

Regular passes of Soprano and Common Pipistrelles were logged; one Common and two Soprano Pipistrelle were noted incidentally to enter day roosts behind waney-edge boarding on a nearby barn.

5.2. Nesting Birds

Swallow *Hirundo rustica* nests were noted within the stable block and the potential for other species was noted (on vegetation adjoining the stable block and within the stables).

6. Conclusions and Recommendations

A suite of bat surveys has been completed to inform works to the stable block at Knowlton Hall. These surveys identified the below detailed ecological considerations/requirements, along with recommendations to ensure that the works are carried out lawfully and in such a manner to minimise ecological impacts.

6.1. Bats – Roosts

No bat roosts were identified during a comprehensive suite of bat surveys and no further works in relation to roosting bats are considered necessary. However, in the apparently unlikely event that bats are disturbed during the works, all works must stop immediately, and the advice of a Suitably Qualified Ecologist (SQE) sought.

6.2. Bats - Lighting

Habitats with the potential to support foraging and/or commuting bats around the stable block were identified.

To minimise impacts to bats during construction, works during the period between 15 minutes before sunset and 15 minutes after sunrise should be avoided/minimised so far as practicably possible. If temporary lighting is necessary, it should be directed to where it is needed, and light spillage avoided.

To ensure that impacts commuting/foraging bats from permanent lighting are minimised so far as practicably possible, lighting should be directed to where it is needed and light spillage avoided. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only.

The height of lighting columns in general should be as short as is possible as light at a low level reduces any ecological impact. However, there are cases where a taller column will enable light to be directed downwards at a more acute angle and thereby reducing horizontal spill. For access lighting this can take the form of low-level lighting that is as directional as possible and below 3 lux at ground level.

Light levels should be as low as possible and if lighting is not needed, it should be avoided.

Many security lights are fitted with movement sensors which, if well installed and aimed, will reduce the amount of time a light is on each night. This is more easily achieved in a system where the light unit and the movement sensor are able to be separately aimed. If the light is fitted with a timer this should be adjusted to the minimum to reduce the amount of 'lit time'. The light should be aimed to illuminate only the immediate area required by using as sharp a downward angle as possible. A shield or hood can be used to control or restrict the area to be lit. Avoid illuminating at a wider angle as this will be more disturbing to foraging and commuting bats and other wildlife.

6.3. Nesting Birds

The active nests of wild bird species (with certain exceptions) are legally protected from deliberate disturbance or destruction. Therefore, if re-development works are proposed for the bird nesting season (March-August inclusive), it will be necessary to appoint a SQE to complete a check for active birds' nests within the buildings to be impacted by the proposals. Should any active nests be found then it would be necessary to delay works until the nesting attempt has reached a natural conclusion. If works are planned for outside of the bird nesting period then no such check is necessary.

To compensate for the loss of Swallow nest sites, it is recommended that two artificial swallow nest cups are installed within on site buildings

6.4. Opportunities for Enhancement

The National Planning Policy Framework (NPPF) sets out national planning policies for the protection of biodiversity (and geological) conservation through the planning system. A key principle of NPPF is that, '*Opportunities to incorporate biodiversity in and around developments should be encouraged*'. Taking the requirements of NPPF into account, opportunities should be sought where possible for nature conservation enhancement at this site.

Opportunities exist to enhance the site for bat and bird species through the incorporation of bat/bird boxes in/on built structures or on retained trees. S7 priority species could potentially benefit from the provision of appropriate boxes.

Such measures would therefore be beneficial to nature conservation and show compliance with the policy guidance.

The recommended bat/bird boxes, which are appropriate to the species present in the local area, are detailed within **Table 3**. These boxes should be installed on retained trees around the site periphery, at least 4m above ground level and facing southeast of southwest.

Table 3. Bat and bird box details

Species	Type	Number	Nest Box Type
Bats	2F Schwegler Bat Box (or similar depending upon availability)	2	
General nesting birds	1B Schwegler Bird Box (or similar depending upon availability)	1	