



MULBERRY HOUSE, BURTON:

BAT AND NESTING BIRD SURVEY

DATE	ECOLOGIST	APPROVED	VERSION	COMMENTS
14/12/21	Jane Kingsley	Rhian Hughes	V1	
15/08/22	Jane Kingsley	Keymar Wake	V2	Updated with emergence surveys

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Executive Summary

Site	Mulberry House, Burton, LL12 OHU Approx. OS Grid Ref: SJ 35769 57405
Surveyors	Jane Kingsley and Rhian Hughes
Proposed work	Extension and conversion of outbuilding/summer house. Replacement of current hardstanding with new patio
Area/structures affected	A single storey building and the roof.
Type of survey	Preliminary Roost Assessment (PRA), Nesting Bird Survey (02/12/2021), Bat Emergence Surveys (06/06/22 and 20/06/22)
Main results of survey	• There are access points into the majority of the building and some crevice roosting opportunities in the missing mortar/gaps under the slates/ridge tiles • A number of droppings (<20) and feeding remains were found in two areas of the building (Characteristic of Brown Long Eared, BLE, and pipistrelle) • The building had good nesting potential for birds and a number of nests, including those of swallows, were found in the building
Survey conclusions	• The site is considered to have moderate potential for bats. A soprano pipistrelle was observed emerging from the building. • The building is being used by at least two species for roosting purposes; soprano pipistrelle and BLE • Birds including swallows are nesting in the building • As bat droppings and bird nests were found in the building, a known bat roost and nesting bird habitat will be lost as part of the works • Surrounding habitat was of good suitability for bats with connectivity to further suitable habitat
Rams and Mitigation	• A licence will be required from NRW before any works can commence. • Due to the loss of a bat roost a compensatory bat roost is recommended within the site • Due to a loss of swallow nesting areas, a compensatory lean-to is recommended within the site • Bat and bird boxes will be erected around the site to enhance the site for these species • Reasonable avoidance and mitigation measures will be implemented at all times

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1.0 Introduction

- 1.1 Enfys Ecology Limited were commissioned by Dr. and Mrs Salmoraghi, to carry out a Preliminary Roost Assessment (PRA) of Mulberry House, Burton.
- 1.2 The survey was commissioned to determine whether the proposed works would affect protected species, specifically bats and nesting birds. The survey work to inform this report was carried out on the 20th June 2022. This report is valid for a period of 18 months from the last date (June 2022) in accordance with best practice.
- 1.3 All British bats (and roost sites) are protected under the Wildlife and Countryside Act (WCA) 1981 (as amended). In addition, all bats are classified as European Protected Species by The Conservation of Habitats and Species Regulations 2010 (as amended). Under this legislation, it is an offence to kill, injure or disturb a bat, or to destroy any place used as a shelter by bats.
- 1.4 All birds (and their nests) are legally protected under the Wildlife and Countryside Act 1981 and it is an offence to intentionally take, damage or destroy the nest of any wild bird while it is in use or being built (as well as kill or injure wild birds of their eggs).
- 1.5 Should evidence of bats be found and it is deemed likely that the proposed works will disturb them; a licence from Natural Resources Wales (NRW) must be obtained before any work may proceed.

2.0 Site Description

2.1 Survey area

- 2.1.1 The site was located in the village of Burton (Grid reference SJ 35769 57405) (Figures 2.1 and 2.2).
- 2.1.2 The site comprised a single storey rectangular outbuilding standing in the gardens of, and adjacent to, two residential properties. On the northern elevation of the building was the gravel hardstanding of the main driveway. Along the front (east) of the property, ran a strip of tarmac hardstanding. The remainder of the plot was predominately amenity grass with a few scattered trees. To the north, east and west lay further residential properties. Immediately south of the site was pastureland bordered by a strip of broadleaf woodland (approx. 130m west). 265m southeast of the site is the river Alyn and there is a pond 260m to the south west.

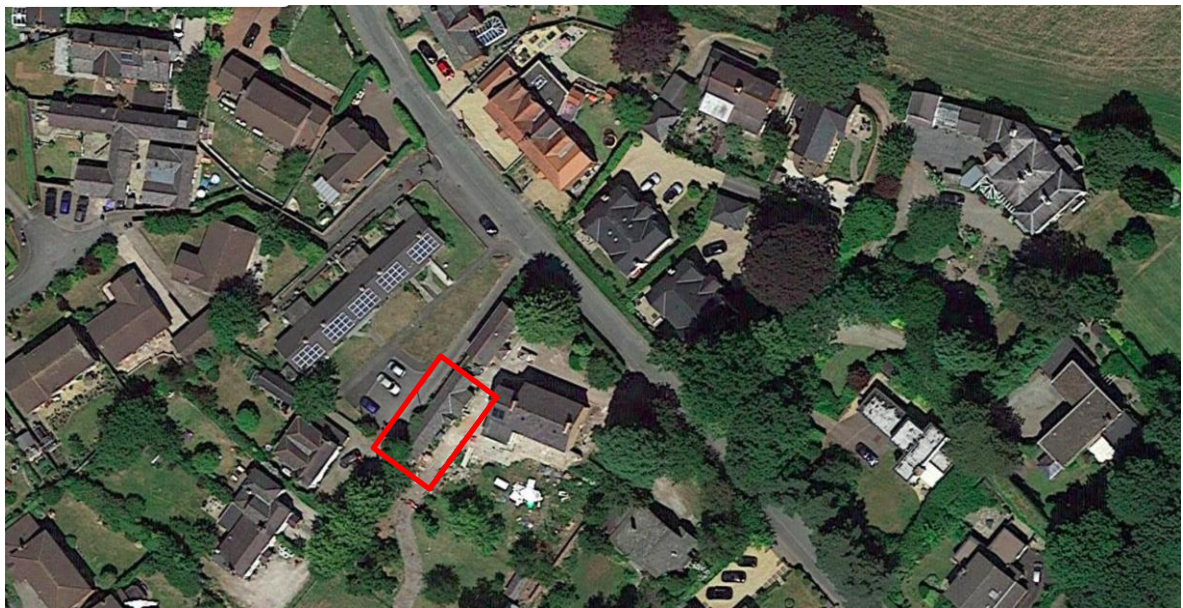


FIGURE 2.1. THE SITE AND SURVEYED BUILDING (RED). BASE IMAGE © GOOGLE 2022

- 2.1.3 The village of Burton is situated in a rural agricultural area approx. 7km north of Wrexham. The wider area around the survey boundary is shown in Figure 2.2.



FIGURE 2.2. THE WIDER LANDSCAPE - THE SURVEY SITE IS SHOWN BY RED STAR. BASE IMAGE © GOOGLE 2021

2.2 *Designated and notable sites*

- 2.2.1 There is one statutory site within 1km of the site. Marford Quarry, designated a SSSI, is located approx. 1km south of the site. Its designation is primarily due to its rare invertebrate species.

3.0 Methodology

3.1 *Preliminary Roost Assessment*

- 3.1.1 The building was assessed for any signs of bats; these include droppings, feeding remains, and other indicative marks, plus features of potential use to bats such as crevices, cracks and other holes, and any potential access points into the building. High powered torches were used to inspect any identified features, and an endoscope was used to investigate any gaps or crevices, where appropriate. Both the exterior and interior of the building were examined.

3.2 *Survey Details*

- 3.2.1 The external and internal building inspections were carried out on the 2nd December 2021 by Rhian Hughes (accredited agent on Bat Licence No. licence S087351/1) and Jane Kingsley. Potential roost assessments were carried out following the guidelines set by the Bat Conservation Trust, 'Bat Surveys – Good Practice Guidelines' (Collins, J. 2016). Photographic evidence was taken where necessary.

3.3 *Dusk Emergence Survey*

- 3.3.1 Two bat emergence surveys were carried out during June 2022; led by Jane Kingsley and two assistants; surveyors were positioned to be able to observe and monitor all elevations of the building, using Anabat scout detectors. Records were taken of any bats observed emerging from the building, and of any other bat activity taking place in the area during the survey. The survey began approximately half an hour before sunset and continued for 90 minutes after sunset.
- 3.3.2 The bat call data was analysed using Anabat Insight Software with the BatClassify plugin set at 70% confidence to auto analyse the bat calls; all of the calls were then reviewed and re-assessed as required. The surveys began approximately half an hour before sunset and continued for 90 minutes after sunset.

3.4 *Limitations*

- 3.4.1 The brick built middle section had a vaulted ceiling with no access to the roof cavity (see Section 5), however, the lack of access is not considered to have any detrimental effects on the survey and conclusions.
- 3.4.2 The end gable on the southwest elevation was obscured by vegetation, however this is not considered to have any detrimental effects on the survey and conclusions.
- 3.4.3 Bats are highly mobile animals, and it is possible that they may move into a building after the survey has occurred. Therefore, absence of bats cannot be absolutely guaranteed. The PRF survey was carried out in December 2021, and the emergence surveys carried out in June 2022, which were within the appropriate survey windows as per the 2016 bat survey guidelines (Collins, 2016).

4.0 Survey Results

4.1 Building Descriptions

- 4.1.1 The building proposed for works is a single storey rectangular outbuilding/summerhouse that sits in the garden of two residential properties. The basic layout of the building as it stands now and the proposed changes are shown in Figure 4.1 and the details of the external and internal areas are described in Table 4.1.

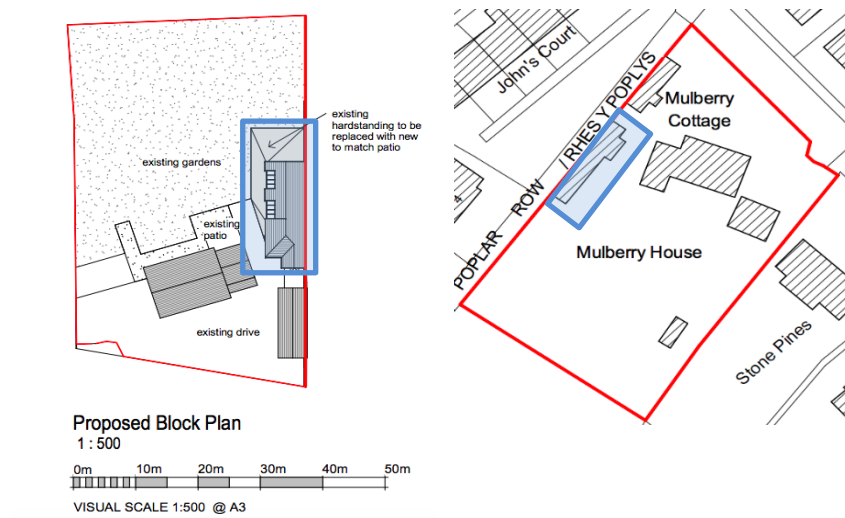


FIGURE 4.1: – PROPOSED SITE PLAN WITH SINGLE STOREY OUTBUILDING/SUMMERHOUSE IN BLUE FROM ABOVE (NOT TO SCALE) BASE IMAGE © AJC

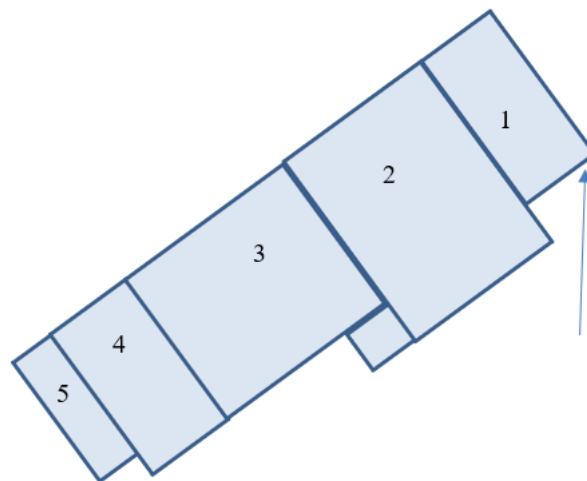


FIGURE 4.2: PLAN OF BUILDING (NOT TO SCALE) SHOWING SECTION NUMBERS MATCHING THOSE IN TABLE 4.1

Mulberry House; Bat and Nesting Bird Surveys

TABLE 4.1: BUILDING DESCRIPTION

External Description	External Photo	Internal Description	Internal Photo
Section 1 on the northern elevation was of a timber construction with a slate roof. The eastern wall was open and screened with a bamboo panel.	 NORTH ELEVATION OF OUTBUILDING	The interior of Section 1 contained a timber structure to the rear that had an open mezzanine floor above.	 MEZZANINE FLOOR IN SECTION 1
The adjoining Section 2 was again timber framed and was being used for storage. It had a large open doorway.	 OPEN FRONTED SECTION 2	Both these sections were open to the roof rafters with a bitumen lining under the slate tiles.	 ROOF SPACE IN SECTION 2

Mulberry House; Bat and Nesting Bird Surveys

Section 3 was of a brick-built construction, with a wooden porch and a slate roof. The front and the porch were glazed.



SECTION 3 OF OUTBUILDING

Section 3 had a vaulted ceiling with no loft space. The interior here was plastered, painted and well-sealed.



SECTION 3 INTERIOR WITH VAULTED CEILING

Section 4 - Adjoining the brick-built section was a further timber fronted room with a single door and one glazed window.



**BUILDING FROM SOUTH LOOKING NORTH –
SECTION 4 IN RED**

The interior of Section 4 had a brick rear wall with the rest being timber. As in most of the building, there were openings to the exterior where the roof rafters sat on top of the walls.



INTERIOR OF ROOM SECTION 4

Mulberry House; Bat and Nesting Bird Surveys

Section 5 was a timber lean to with a mono-pitched slate roof. There was an open door on the front and a window to the side (end) of the building.



SECTION 5 EXTERIOR

The bitumen lining in the lean to was hanging down in many areas.



SECTION 5 INTERIOR

4.2 PRA Results

- 4.2.1 There were many access points into the timber framed sections of the building through the open doorways and under the roof rafters along the top of the walls. The timber end wall to the northern elevation finished below the gable end giving access into Section 1 and bat droppings characteristic of pipistrelle were found on top of the mezzanine floor. Section 2 was open fronted and both bat droppings (characteristic of Brown long eared, BLE) and evidence of feeding remains were found here. Feeding remains were also found in Section 4 (the feeding remains were in the form of butterfly wings and it cannot be confirmed if they were from bats or birds).
- 4.2.2 There were many potential roosting features (PRF's) for crevice dwelling bats. The bitumen lining of the roof was visible in most of the building and was in poor condition with gaps/tears both inside the buildings and on the exterior above the top of the walls. A dead mouse and mouse droppings were found in Section 3. The gaps present along the tops of walls under the roof rafters, allowed access to bats and birds into the majority of the building. Some of the ridge tiles were missing and there were gaps under others. The mortar under the slates was missing in a number of places.
- 4.2.3 Bird nests, including those of swallows, were present in Section 2 and Section 5. The locations of evidence of bats/birds are shown in Figure 4.2. The external and internal PRF's are described in Table 4.2.

-  **FEEDING REMAINS**
-  **BAT DROPPINGS**

**FIGURE 4.2 PLAN OF BUILDING
(NOT TO SCALE) SHOWING LOCATIONS
OF BAT DROPPINGS AND FEEDING
REMAINS**

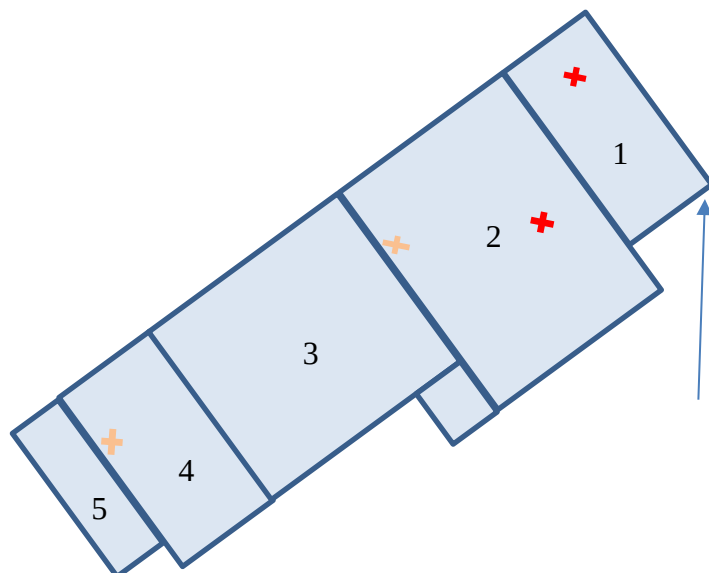


TABLE 4.2 POTENTIAL FEATURES FOR BATS AND BIRDS

Location	Description	Example photos
Section 1 The gable end to the northern elevation	Large gap at the top	
Section 1,2,4 and 5 To most elevations	Gaps between walls and the roof rafters	
All Sections Throughout the building both externally and internally	Tears to the roof lining	

Location	Description	Example photos
Section 3 On roof above vaulted ceiling	Raised roof and ridge tiles	
Section 3 Above Porch	Missing ridge tiles	

Section 2 On gable ends	Mortar was missing under roof and ridge tiles	
Section 3 To sides of porch	Gaps between roof and wall bricks	
Sections 2 and 4 Open timber structure to the north elevation and enclosed one to the south	Feeding remains (butterfly wings)	

Section 4 Timber section to the south elevation	Evidence of feeding remains (butterfly wings) suspended in cobwebs	
Section 1 Mezzanine floor in the northern elevation	Bat droppings	
Section 2 Open section of the building	Bat droppings	

4.5 *Nesting birds*

- 4.5.1 There were approx. three nests, including swallows' nests in Section 2. In addition, there were several tears in the bitumen roof lining, and a bird's nest could be seen between the roof lining and the roof tiles. There was also a nest in Section 5 and a bird was seen entering through the open door.

4.6 *Bat dropping analysis*

- 4.6.1 A sample of the bat droppings found in Section 2 (characteristic of BLE) was sent off for DNA analysis, but the results were inconclusive; this could be a result of degradation due to either age or is often found when droppings are exposed to sunlight/ heat. The bat droppings characteristic of *Pipistrelle* were not sent off for analysis as it is considered the emergence survey results confirm the species identification.

4.7 *Activity Survey Results*

- 4.7.1 As there were PRF's, access points, feeding remains and droppings found in the PRA survey; two emergence surveys were carried out to determine if, what species, and how, bats were using the site.
- 4.7.2 Table 4.3 provides details of the emergence surveys with timings and weather conditions.

TABLE 4.3 – SUMMARY OF SURVEY DETAILS

Survey Type	Date	Start time	Sunset / sunrise time	End time	Temp. at start	Weather
Dusk Emergence	06/06/2021	21:03	21:33	23:03	12°C	100% cloud cover, dry, no wind
Dusk Emergence	20/06/2021	21:11	21:41	23:11	16°C	>10% cloud cover, dry, no wind

4.7.3 First Emergence Survey

The results of the first dusk emergence survey are detailed in Table 4.4.

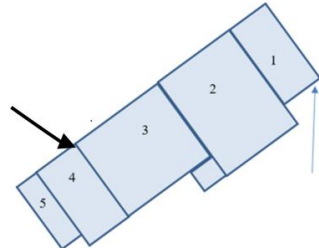
TABLE 4.4 – SUMMARY OF FIRST EMERGENCE SURVEY ACTIVITY

Time	Species	Activity	Emerge?	Location
21:50– First bat	Common Pipistrelle (C.pip)	Passing through site	No	First seen to the south of the site, circled around building
21:50- end of survey	C.pip	Regular passes and foraging throughout the survey	No	Across the site
21:58- 22:23	Soprano Pipistrelle (S.pip)	5 passes recorded	No	Two observed circling the site
22:27 – 22:30	Noctule	Foraging in site Commuting over	No	Recorded across the site
23:03	Myotis sp.	Call characteristic of whiskered/Brandts	No	Recorded on the detector close to Section 2 (north) only
General Activity There was regular foraging activity from common pipistrelles throughout the survey, around the whole site. There were five calls from soprano pipistrelles during the first half of the survey. A <i>Myotis</i> sp. was heard by one surveyor in the vicinity of the open fronted timber section to the north. A noctule was recorded. No other species of bat were heard or seen throughout the survey.				

4.7.4 Second Emergence Survey

The results of the second emergence survey are detailed in Table 4.5.

TABLE 4.5 – SUMMARY OF SECOND EMERGENCE SURVEY ACTIVITY

Time	Species	Activity	Emerge?	Location
22:07 – First bat	Soprano Pipistrelle (S.pip)	Emergence	Yes	From Section 4 of building, recorded on detector to southwest only  
22:07- End of Survey	S.pip	Three more passes during survey	No	Recorded across site
22:09	C.pip	Regular passes and foraging throughout the survey	No	Recorded across the site
23:00	Myotis sp.	One pass characteristic of whiskered/ Brandts	No	Recorded on detector to the north of the site only
General Activity A soprano pipistrelle was seen emerging from the southwest section of the building, there were three more calls from soprano pipistrelles. There was regular foraging activity from common pipistrelles throughout the survey, around the whole site. A <i>Myotis</i> sp. was heard by one surveyor to the north of the building. No other species of bat were heard or seen throughout the survey.				

5.0 Discussion and Evaluation

5.1 Proposed works

5.1.1 The proposed works to convert the outbuildings into residential can be seen in figure 5.1a-c below including an extension and remodelling of the outbuildings. The roof in its entirety will be replaced. The current hardstanding used as a patio will be replaced with an alternative patio.



FIGURE 5.1A – C: PROPOSED PLANS AND 3D IMAGES ©AJC

5.2 *Designated sites*

- 5.2.1 The proposed works will not have any impact on the designated site of Marford Quarry as it is approx. 1km away. The extension and new patio will be constructed on the short amenity grassland of the garden and the hardstanding present already.

5.3 *Bats*

- 5.3.1 There were a number of potential roosting features for bats including, but not limited to; raised and missing ridge tiles, missing mortar under slates and gaps between the brickwork and the roof structure. Access through these would provide roosting opportunities between the roof slates and the roof lining. Access into this void was also available from inside the building due to the roof linings poor condition.
- 5.3.2 The access point above the gable end on Section 1 provided access into the buildings and it was here that most of the droppings were found, characteristic of pipistrelle in shape and size, as well as location being piled under the access point.
- 5.3.3 Feeding remains in the form of butterfly wings, which can be characteristic of BLE or birds, were found in cobwebs in Section 5 of the building where there was access under the roof rafters. This section also had high light and airflow levels due to the glazing and the gaps under the rafters. Scattered individual bat droppings (characteristic of BLE) and feeding remains were also found in Section 2 of the building.
- 5.3.4 Under the Good Practice Guidelines (Collins, J., 2016), the building is considered to have moderate potential for bats. This is defined as '*A structure with one or more potential roost sites that could be used by bats due to its size, shelter, protection, conditions, and surrounding habitat...continuous habitat connected to the wider landscape that could be used by bats for commuting and foraging...but unlikely to support a roost of high conservation status*'. There were many PRF's for individual/ small numbers of crevice bats and cannot be completely discounted that the site could be used as a maternity roost – though there was no evidence of this during any of the surveys. The hibernation potential of the site was low.
- 5.3.5 During the second emergence survey a soprano pipistrelle was seen to emerge from Section 4 of the building. The droppings characteristic of pipistrelle were found within Section 1 of the building but no bats were observed using this area on either emergence survey. There were moderate levels of activity around the site with at least three species using the site to commute through or forage within (common and soprano pipistrelle, Myotis sp., and noctule). Scattered individual bat droppings and feeding remains characteristic of BLE were found within Section 2 of the building. The open nature of this section does offer the preferred space for species such as BLE's to use for foraging and as a night roost/ resting perch; however, it was also light and open and there was no evidence of the roof space being used as regular roost for during the survey. Therefore, it is considered that the building is an

occasional day roost for an individual/ small number of pipistrelle bats and is being used as an occasional night roost/ resting perch for a BLE.

5.3.6 As the building is a known bat roost, a licence will be required from NRW before any works can commence. The buildings are a roost for individual/ small numbers of bats; the proposed works will not have a negative impact on the favourable conservation status of bat populations within the area as long as mitigation and compensation measures are in place, as well as timing constraints of works and specific working method. These will be provided in detail within the licence method statement, but some mitigation measures are included (but not limited to) in Section 6.

5.3.7 The surrounding habitat was suitable for bats with open pastureland bordered by hedgerows and a strip of broadleaf trees approx. 130m west. There is also connectivity along hedgerows and scattered trees to a further strip of broadleaf trees to the east. There is a pond 260m south but there is a strip of woodland closer to this and open pastureland between the trees and the site. The process of works will have the potential to cause some disturbance to bats using the site, and immediately adjacent areas, without mitigation. The RAMs detailed in section 6 will be put in place to reduce any risk or disturbance to bats within the site.

5.3 *Nesting birds*

5.3.1 Birds are nesting in the building and the proposed works to the building will result in the loss of suitable bird nesting habitat. RAMs to reduce risk to nesting birds and compensatory nesting recommendations are provided in section 6.

6.0 Mitigation, Compensation and Reasonable Avoidance Measures (RAMs)

6.1 Bats

- 6.1.1 **As the building is a known bat roost, no works to the building must commence until a licence has been obtained from NRW. A licence can only be applied for following the granting of planning permission and the discharge of any ecology related conditions. Once submitted, the licence application takes 40 working days to be processed by NRW (or more if any there are any queries).** In order to apply for a licence a suitable method statement detailing the specific working method and proposed mitigation for any loss of habitat or disturbance to bats must be created by a suitable qualified ecologist and submitted to NRW.
- 6.1.2 Following the bat mitigation guidelines (Mitchell-Jones, 2004), the mitigation requirements for a roost for small numbers of bats of common or rarer species include the *‘provision of new roost facilities where possible. Need not be like-for-like but should be suitable, based on species’ requirements. Minimal timing constraints...’*
- 6.1.3 Mitigation measures and recommendations will be included in the licence application, and are also included below.
- As the building is not been used as a maternity roost, and has low potential as a hibernation roost, the works can be carried out at any time of year. If the works are to be carried out between March – September they will be subject to nesting bird checks, as well as supervision. Should it be necessary to carry out the works during the winter months then mitigation and compensation for hibernating bats will be in place in the form of supervision and a bat box suitable for hibernating bats.
 - Prior to works being carried out, a toolbox talk will be given to all construction workers informing them of the species involved and specific working methods to adhere to. A log of participants will be kept.
 - The removal of the all the roof structure including ridge tiles, slates, and fascia’s; must be undertaken by hand and supervised (where areas cannot be inspected beforehand) by a licensed ecologist who is named on and authorised to act under the specific licence granted by NRW for this works. Areas that can be inspected, such as the holes in the walls and behind fascia’s, will be looked at with a torch and/or endoscope prior to works commencing by the licenced ecologist. If a bat is found and accessible it should be captured and placed in an appropriate bat box that will be made available onsite prior to works commencing (which will contribute to one of the proposed mitigation bat roosts – (see 6.1.4). If a bat is found and is not accessible works will start from the furthest point from the bat and continue in a directional manner to encourage the bat to leave of its own accord. If a hibernating bat is found, it will be captured and moved to a bat box suitable for hibernation.

- Should the replacement roof be lined with felt, it should be lined with non-breathable Bitumen 1F felt where possible. Breathable membranes can be fatal to bats when they get caught in the fibres and cannot escape. Further roof coverings such as vaulted ceilings or wooden cladding across the tiles are acceptable. If it is absolutely necessary to use a breathable membrane then the roof of the entire building needs to be completely sealed off from the bats.
- The replacement timber frame for the roof (and for the enhancements in the bat mitigation areas) will be untreated or pressure treated wood. If treatment is required, only timber treatments listed on Natural England Technical Information Note TIN092 will be used.
- Sufficient compensatory roosting opportunities and enhancements will be provided for bats within the site to contribute to biodiversity net gain (see 6.1.4). These will include bat boxes a purpose-built roosting area for BLE and other crevice dwelling bats in an adjacent building. A bat box suitable for summer roosting and hibernating bats will be erected onto the site to be available during the works period.
- All mitigation measures will be inspected by an ecologist to ensure compliance with measures detailed in the licence method statement. An Ecological Compliance Audit will be completed during and after the works to document and show evidence that the method statement has been followed. Monitoring of the roosts will be carried out during the first bat activity season (May-August) after completion of the works (Year 1); if the results are unfavourable then further monitoring surveys will be carried out in Year 3.

6.1.4 *Lighting*

The immediate surrounding habitats of the site are suitable for bats and the emergence survey showed bats using these areas to commute and forage. Therefore, any lighting associated with the building during and after the works has the potential to impact bats and nocturnal birds. To reduce the potential impact of any light spillage on commuting bats during the construction and post construction phases of the development, lighting design for the site (both during the works and of the completed building) should seek to minimise the levels of light along any areas used by bats. The following recommendations should be used when forming the lighting plan for the proposed development (Bat Conservation Trust (20018) and Stone, E.L. (2013)):

General Lighting Guidance

- There must be no lights focused on the trees to the south of the site during or after the works. There will be no illumination of the recommended bat mitigation and bird boxes (see below) once the works are complete. There should be dark buffer zone across the southern section of the garden where the designated bat area will be created (Figure 6.2).
- As the replacement building proposes sky lights to the eastern roof pitch, internal luminaires in all rooms should be designed to minimise light spill and glare via the windows and sky lights; either through being recessed, using dimmer switches, lamp shades, directed away from the windows and/or through the use of blinds and curtains during the summer months.
- Construction should start at least one hour after dawn and finish at least hour before dusk during the summer months (May – August) to prevent light and noise levels disturbing the bats using the site.
- Any external or security lighting should be limited to provide some dark periods during the night. The lighting should be motion activated, and not stay on longer than one minute, in order to provide maximum darkness when not needed as well as providing safe lighting conditions of residents when required.

The following luminaire specifications are provided by Bat Conservation Trust and Institute of Lighting Professionals (2018) and must be incorporated into the lighting plan for the proposed development.

- All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used.
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (ideally <2700Kelvin) should be adopted to reduce blue light component.
- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats
- Column heights should be carefully considered to minimise light spill.
- Only luminaires with an upward light ratio of 0% and with good optical control should be used.
- Luminaires should always be mounted on the horizontal, i.e. no upward tilt.
- Any external security lighting should be set on motion-sensors and short (1min) timers.
- As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed.

6.1.5 *Mitigation – compensation*

The proposed works will result in the loss of day roost for pipistrelle bats and a BLE night roost, as well as the loss of further roosting opportunities for crevice dwelling bats; this will need to be compensated for within the proposed works. In line with Planning Policy Wales, and following the Environment Wales Act (Section 6) and guidance provided in the recent letter by the Chief Planner in Wales, there is a requirement to ensure that a **net benefit for biodiversity** is also provided in all applications for planning in Wales; and that applications are to be refused if they cannot show a gain of biodiversity. The licence method statement will detail measures to be followed to mitigate for the loss of bat roosting areas; and to enhance the site for bats; and will include (but not be limited to):

- A section of the slate roofed shed in the garden (not included within the survey) can be designated and converted into a bat roost suitable for day roosting crevice dwelling bats and a BLE night roost/ feeding perch. An area should be sealed from the rest of the shed (with a stud wall for example). This area should be at least 1.5m long, and the width and height of the shed. The windows should be blocked with black paint and then bordered with plywood. The location of the proposed roost is shown in Figure 6.1 and Figure 6.2.
- Batons and timbers removed from the roof removal of the building proposed for works will be installed into the bat loft as additional ridge beams and perkins to provide recognisable and familiar roosting features. The bat loft will further be enhanced with a panel box that will be inserted onto the northern gable end within the bat loft. This will comprise a piece of plywood board fitted to 1inch x 1inch timbers with a gap on the underside only so bats can access the space from underneath.
- A rough sawn, untreated timber, double ridge beam should be installed, with rough timber planks placed along the ridge beam to provide roosting opportunities.
- The shed space should be left empty and not used as storage so as to allow free movement and flights of bats inside.
- Two bat access points will be created, these will be 100mm x 20mm slots cut as high as possible at the apex of the northern gable.
- An access hatch will be provided on the stud wall, at the opposite side to the panel box, measuring no more than 0.7m x 0.5m to allow access for **monitoring purposes by licenced persons only**.



FIGURE 6.1 – SHED TO BE MODIFIED TO PROVIDE ROOST



FIGURE 6.2 – LOCATION OF MITIGATION BAT ROOST (YELLOW) IN RELATION TO BUILDING FOR WORKS (RED) AND PROPOSED DARK BUFFER ZONE (BLUE).

- Two external bat boxes should be installed on to mature trees within or around the site. It is recommended that Woodstone or Woodcrete boxes are used as they last longer and require much less maintenance than wooden boxes. A range of bat boxes are available online and it is recommended that one each of the Greenwood Ecohabitat crevice and hollow boxes are installed to provide roosting opportunities for a range of species; the ecologist will approve the bat boxes used if different to those suggested.

6.2 *Nesting birds*

- 6.2.1 Swallows and other bird nests were found within the building. The destructive works should therefore be undertaken outside of the bird nesting season (which is March - September inclusive) to reduce the risk of disturbance to nesting birds. Should it be necessary to carry out works within the nesting bird season, a nesting bird check should be carried out by an ecologist immediately prior to (no more than 48hrs before) works commencing to ensure that no active nests will be affected. If active nests are found then all work in the vicinity of the nest **must be delayed** until all chicks have fledged.
- 6.2.2 To compensate for the loss of bird nesting habitat in the conversion works; and enhance the site for birds; bird nesting opportunities will be provided by including bird boxes around the site. A minimum of two boxes suitable for small birds need to be erected on site, - one suitable for *Passer domesticus* (house sparrows) with a 32 mm entrance and one for smaller birds (28 mm). Examples of suitable bird boxes are: Vivara pro woodstone house sparrow nest-box; Vivara pro seville 28mm Woodstone nest-box. Woodstone nest boxes are more durable and require less maintenance than wooden boxes. These boxes should be mounted onto the trees or retained buildings on the site.
- 6.2.3 To compensate for the loss of swallow nesting habitat, a shed or lean-to will be constructed as part of the proposed works (Figure 6.3); this could be utilized as a bin or log store. The store will be constructed of wood using timbers of untreated or pressure treated wood. If treatment is required, only timber treatments listed on Natural England Technical Information Note TIN092 will be used. The store will be open on only one elevation and will have a specially constructed roof to create nesting opportunities (see Figure 6.3 for an example).
- 6.2.4 The roof of the bin/log store will be pitched with a minimum height of 1m at the apex (preferably more), which will be available for swallows to use.
- 6.2.5 The eaves should be at a minimum height of 2 m and the depth of the structure should be at least 1.5m (if a single pitched lean-to). The eaves will be enclosed with wooden boards, however, to allow access by swallows at least two gaps of 50mm by 70mm must be provided, a minimum of one on each side of the building. Swallows can enter through this small gap, and do not require much light.

- 6.2.6 Within the enclosed roof space, nesting platforms consisting of a wooden shelf 100mm wide and sloping slightly forwards (at an angle of no more than 30°) will be installed on the inside of each roof pitch (depending on whether the store is a single pitched lean-to or has a double pitched roof), attached to a purlin. This ledge should be at least 80cm from the apex of the roof, preferably more and the ledges should be approximately 1.5m away from each other to encourage multiple nesting sites.
- 6.2.7 In addition, at least two swallow nest cups must be fitted within the swallow loft. These should be attached to purlins or each gable end with at least 6cm between the top of the nest and the ceiling. Examples are available online from several suppliers, and suitable models include the eco swallow nest.
- 6.2.8 There should be rough sawn beams attached to the underside of the ceiling so bats can also use the store as a night roost.



FIGURE 6.3 – EXAMPLE OF A SINGLE PITCH STORE WITH SPECIALLY CONSTRUCTED ROOF FOR SWALLOWS

7.0 Legislation

7.1 *Bats*

The Wildlife and Countryside Act (WCA) 1981 (as amended) forms the key legislation protecting habitats and species in the UK. All UK bat species are fully protected under the 1981 Act through inclusion on Schedule 5. All bats are also listed under Schedule 2 of the Conservation of Habitats and Species Regulations (2017) which transcribes the EC Habitats Directive into UK law. In combination, this legislation makes it an offence to:

- Deliberately or recklessly take, injure or kill a bat;
- Deliberately or recklessly damage or destroy a place or structure used by bats for shelter or protection;
- Deliberately or recklessly obstruct access to a bat roost; or
- Deliberately or recklessly disturb bats while occupying a roost.

Bat roosts are protected under these laws whether the animals are present at the time of survey or not. Under both laws the Welsh Government and D.E.F.R.A. are empowered to issue licences to carry out work to bat roosts for reasons of overriding public interest. It is not illegal to tend to a disabled bat pending recovery.

7.2 *Birds*

In addition, under the Wildlife and Countryside Act, 1981 (as amended) and the Countryside and Rights of Way, 2000, all wild birds, their nests and eggs are protected during the breeding season (typically March to August inclusive). This makes it an offence to:

- Intentionally kill, injury or take any wild bird.
- Take, damage or destroy the nest of a wild bird included in Schedule ZA1.
- Take, damage or destroy the nest of any wild bird while that nest is in use or being built.
- Take or destroy an egg of any wild bird.

7.3 *Biodiversity Net Gain – Relevant sections of legislation*

- Section 6 of the Environment (Wales) Act 2016:

Biodiversity and resilience of ecosystems duty

(1) A public authority must seek to maintain and enhance biodiversity in the exercise of functions in relation to Wales, and in so doing promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions.

(2) In complying with subsection (1), a public authority must take account of the resilience of ecosystems, in particular the following aspects—

- (a) diversity between and within ecosystems;
- (b) the connections between and within ecosystems;
- (c) the scale of ecosystems;
- (d) the condition of ecosystems (including their structure and functioning);
- (e) the adaptability of ecosystems.

.... (5) In complying with subsection (1), a public authority other than a Minister of the Crown or government department must have regard to—

- (a) the list published under section 7;..
- Section 7 of the Environment (Wales) Act 2016:

Biodiversity lists and duty to take steps to maintain and enhance biodiversity

(1) The Welsh Ministers must prepare and publish a list of the living organisms and types of habitat which in their opinion are of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales.

(2) Before publishing a list under this section the Welsh Ministers must consult the Natural Resources Body for Wales (“NRW”) as to the living organisms or types of habitat to be included in the list.

(3) Without prejudice to section 6, the Welsh Ministers must—

- (a) take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section, and
- (b) encourage others to take such steps

8.0 References and Information Sources

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

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