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Dusk Survey Results

September 2023

Hillside
Erbistock
Wrexham
LL13 0DW

National Grid Ref: SJ35114210



Hillside, Erbistock, Wrexham, LL13 0DW
Dusk Survey Results

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Appendix I: Inspection & Assessment in relation to Bats & Breeding Birds, Tyrer Ecological Consultants, August 2023

1.0 Background & Introduction

- 1.1 As part of an application for planning consent at Hillside in Erbistock, an Inspection & Assessment in relation to Bats & Breeding Birds was undertaken by Tyrer Ecological Consultants Ltd in July 2023. Proposals for the site are understood to involve the renovation of the existing buildings onsite.
- 1.2 As a part of this appraisal, a Preliminary Roost Assessment (PRA) of both the main dwelling and outbuilding, by way of investigating the building to look for evidence of use and / or suitability for bats. The results of the diurnal assessment are as follows:

Based upon the findings of the survey, covered through sections 6.0 – 7.0 of the report and supported by Appendix I, both the house and outbuilding at Hillside are determined to offer 'Moderate' bat roost suitability in accordance with Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016), warranting the requirement for further survey effort at the site before an impact assessment can be concluded. It is recommended that two dusk / dawn emergence / re-entry surveys are conducted at the site during the active season of bats (May – August, extending into September), in order to establish if / how the building is being used by bats, and if so, identify the species present, abundance, roost locations and flight lines around the site following emergence / re-entry. Four surveyors would likely be required to monitor the potential roost features described across the two buildings, and the surveys should be spaced at least two weeks apart in accordance with BCT guidelines.

- 1.3 Based on the recommendations of the diurnal assessment, Tyrer Ecological Consultants Ltd were recommissioned to carry out the recommended further surveys in August 2023, thus within the active season of bats (May – August); the surveys comprised of two dusk surveys and were carried out in accordance with the Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016) edition – see **Figure 1.1**.

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

Figure 1.1 – Extract from Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016)

- 1.4 The surveys aimed to identify the presence or reasonably conclude the absence of bats within the building. The results, conclusions and recommendations following the surveys, including any indicative mitigation to inform an application to Natural Resources Wales for a species development licence, where necessary, will be supplied within this report.
- 1.5 This report should be read, understood and presented to the local authority as an additional document to **Appendix I** (see Contents page).

2.0 Bats – Legislation and Policy

2.1 All British bats and their **roosts are afforded full protection under the Wildlife & Countryside Act (1981) (as amended) and are listed in Schedule 2 of the Conservation of Habitats and Species Regulations (2019) (EU Exit). When dealing with cases where a European Protected Species (EPS) (all UK bats) may be affected, a planning authority is a competent authority within the meaning of the Regulation 7 of the Regulations, that has a statutory duty, as the local authority, to have due regard to the provisions of the Regulations in the exercise of its functions.

2.2 Use of Buildings by Bats

- a) Summer breeding roost (May – August)
- b) Hibernation roost (October – March)
- c) Transitional or temporary roost (other months)

2.3 Roost selection is often closely correlated to suitable foraging habitat within a reasonable commuting distance from the roost and different sites are used depending upon insect densities and abundance; climatic conditions can also affect their ability to successfully forage. All British bats are insectivorous.

*** The term roost is generically referred to as a place that bat/s use for the any of the above reasons, however it should be noted that under the Conservation of Habitats and Species Regulations (2019) (EU Exit) (Regulation 43 (d) the term roost is not used but refers to “a breeding site or resting place of such an animal” and is afforded legal protection. The roost, breeding site or resting place of bats, which ever terminology is used, is legally protected whether or not bats are in occupation.*

Policy

2.4 Planning Policy Wales (PPW) 11th Edition (2021) sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy framework for Wales. PPW, the TANs, MTANs and policy clarification letters comprise national planning policy.

2.5 PPW and the National Development Framework (published as Future Wales – the National Plan 2040) set out how the planning system at a national, regional and local level can assist in delivering these requirements through Strategic Development Plans (SDPs) and Local Development Plans (LDPs).

2.6 PPW (2021) states:

“The presence of a species protected under European or UK legislation, or under Section 7 of the Environment (Wales) Act 2016 is a material consideration when a planning authority is considering a development proposal which, if carried out, would be likely to result in disturbance or harm to the species or its habitat and to ensure that the range and population of the species is sustained. Planning authorities should advise anyone submitting a planning application that they must conform with any statutory species protection provisions affecting the site, and potentially the surrounding area, concerned. An ecological survey to confirm whether a protected species is present and an assessment of the likely impact of the development on a protected species may be required in order to inform the development management process. It is considered best practice that screening to determine the presence of protected species should be carried out by a competent ecologist on the basis of data provided by the relevant Local Environmental Record Centre.”

- 2.7 Planning authorities must therefore follow a step-wise approach to maintain and enhance biodiversity and build resilient ecological networks by ensuring that any adverse environmental effects are firstly avoided, or minimized, or mitigated, and as a last resort compensated for; enhancement must be secured wherever possible.
- 2.8 The first priority for planning authorities is therefore to avoid damage to biodiversity and ecosystem functioning. Where there may be harmful environmental effects, planning authorities will need to be satisfied that any reasonable alternative sites that would result in less harm, no harm or pro-gain have been fully considered.
- 2.9 The Environment (Wales) Act 2016 (“the Act”) – requires local planning authorities to have regard to area statements in the development of Local Development Plans. The Act introduced an enhanced biodiversity and resilience of ecosystems duty (Section 6 Duty). This duty applies to public authorities in the exercise of their functions in relation to Wales and will help maximise contributions to achieving the well-being goals. The Nature Recovery Action Plan supports this legislative requirement to reverse the decline in biodiversity, address the underlying causes of biodiversity loss by putting nature at the heart of decision-making and increasing the resilience of ecosystems by taking specific action focused around objectives for habitats and species.

Part 1 of the Act promotes sustainable management of natural resources, and in Part 1 section 6 states:

“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.”

- 2.10 This is supported by PPW (2021) which requires developments to achieve a Net Benefit for Biodiversity (NBB):

*“Planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. This means development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a **net benefit for biodiversity**. In doing so planning authorities must also take account of and promote the resilience of ecosystems, in particular the follow aspects:*

- *diversity between and within ecosystems;*
- *the connections between and within ecosystems;*
- *the scale of ecosystems;*
- *the condition of ecosystems including their structure and functioning; and*
- *the adaptability of ecosystems.”*

- 2.11 There are several plans, strategies and national, sub-regional and local policy statements which provide a framework for development in the Plan area. The Planning and Compulsory Purchase Act (2004) makes it a requirement for local planning authorities in Wales to prepare a Local Development Plan (LDP) for their areas.
- 2.12 Wrexham Borough Council prepared a plan namely the ‘Wrexham Unitary Development Plan (1996 – 2011)’, which was formally adopted in February 2005 and supersedes any previous development plans for the area. A new plan, the ‘Wrexham Local Development Plan 2 (2013 - 2028)’, which will replace the current adopted plan, is currently under review. Until this new plan is adopted, the Wrexham Unitary Development Plan remains in effect.

- 2.13 Policy EC6 of the Wrexham Unitary Development Plan mirrors these statements within PPW 2021 and goes onto state the following:

“Development either within or close to sites of biodiversity interest will only be permitted where it can be clearly demonstrated that the need for the development outweighs the need to safeguard the intrinsic nature conservation value of the site. Where such development is permitted, damage should be kept to a minimum, and compensatory measures should be provided. Measures to improve the biodiversity value of sites and enhance their natural conservation interest and landscape quality including the establishment of local nature reserves will be supported.”

3.0 Bats in Wrexham

- 3.1 Up to thirteen bat species have been recorded in Wrexham, many of which use built structures for roosting. A variety of building types and features are utilised by bat species at different times of year ranging from occupied residential dwellings to disused barns and bridges. The most frequently encountered species is the common pipistrelle bat (*Pipistrellus pipistrellus*); its abundant status in Wrexham is mirrored throughout the UK.

4.0 Survey Methodology

- 4.1 Bat Conservation Trust - Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016) edition states:

“The guidelines do not aim to either override or replace knowledge and experience. It is accepted that departures from the guidelines (e.g. either decreasing or increasing the number of surveys carried out or using alternative methods) are often appropriate. The guidance should be interpreted and adapted on a case-by-case basis according to site-specific factors and the professional judgement of an experienced ecologist. Where examples are used in the guidelines, they are descriptive rather than prescriptive.”

- 4.2 Relative to the above, the survey methods and protocol adopted were determined using the collective and long standing experience of Tyrer Ecological Consultants Ltd and knowledge of the specific nature of the site.

Survey Protocol

- 4.3 In accordance with Bat Conservation Trust - Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016), it is specified that: *“The bat active period is generally considered to be between April and October inclusive”*, though the period of **May – August** is the optimal most productive period that Natural Resources Wales accept bat surveys and grant species development licences in relation to bats.
- 4.4 The timing of the surveys took place in August, at a time when bats are within their active season and a period of the year when maternity colonies are typically formed at established bat roosts, following on from winter hibernation. The active season of bats is generally accepted as May – August across the industry.
- 4.5 Where bats are roosting, they are likely to be detected by the ecologists who are trained in the use of bat detector hardware and call analysis software, and specifically how to detect bats and to correctly identify / disseminate bat calls.
- 4.6 When considering survey protocol, the decisions about whether dusk or dawn surveys are selected are based on the extensive experience of Tyrer Ecological Consultants Ltd, the nature of the building and species that can be anticipated as being present either at the property or in the locality as well as any visual limitations at the survey site.
- 4.7 In this case, the bat roost potential at the structure and the lack of visual limitations present meant that a dawn survey was considered unnecessary as it would not provide any further information when compared to a dusk emergence survey. Furthermore, at dawn, temperatures are usually lower than at dusk, and as a result bat activity can be less frequent, in some locations.
- 4.8 BCT issued an Interim Guidance Note in May 2022 in advance of a 4th edition of bat survey guidelines to be published in Summer 2023, which supersedes existing guidelines and states in relation to dawn surveys that:

“Whilst dawn surveys can reward surveyors with displays of dawn swarming behaviour, there is a concern that bats that have returned earlier will be missed...”

The 4th edition of the survey guidelines will therefore transition away from the standard use of dawn surveys, particularly as a method for presence/absence surveys in favour of dusk surveys supported by NVAs. The use of NVAs has the potential to improve the quality of dusk surveys, providing clarity on exact emergence points and bat counts that might not otherwise be available because of the limitations of the human eye.”

- 4.9 Survey protocol should not be determined by parties who are 1) not familiar with the site, and 2) do not have a sufficient level of experience in relation to the undertaking of dusk/dawn bat surveys.
- 4.10 The number of surveys and surveyors was adequate relative to the roost potential that was identified during the daytime appraisal – i.e. **Moderate** potential. Four surveyors were required to accurately monitor potential roost features (PRF's) on the building at any one time.
- 4.11 Surveyors were strategically positioned so that all elevations with bat roost potential, as described in the daytime report, could be observed without limitation. The surveyors were aided with Anabat SD2, Batlogger M & M2, Echometer EM2, Peersonic RPA3, or equivalent electronic bat detectors that enable the locating and recording of the high frequency calls that are emitted by bats; echolocation calls were analysed the next day using Analook, Kaleidoscope, BatExplorer or equivalent computer software to verify field observations. Where deemed appropriate by the attending ecologists, elevations were also surveyed via the use of a Night Visual Aid (NVA) Camera (Panasonic HC-VXF990) – recordings would be subject to review the following day to identify emergences / flight lines and species / abundance.

Survey Limitations

- 4.12 Following the completion of the further surveys, having carefully considered the results and conclusions derived from all surveys to date, no significant constraints were experienced that might hinder the gathering of ecological data on which to base sound conclusions and recommendations.

5.0 Survey Results

5.1 Two dusk emergence surveys were conducted at the site on 8th and 22nd August 2023 by four surveyors at a time. See **Table 5.1** below for surveyor credentials, **Table 5.2 – 5.3** for detailed survey results and **Figures 5.1 – 5.5** for visual aids to further assist in the understanding of survey results.

Table 5.1 – Surveyor names and credentials

Name	Experience	Surveyor Credentials
Mr. J. Pescod Qualifying CIEEM	5 years	- MRes Advanced Biological Sciences, BSc (Hons) Senior Ecologist, with extensive training and experience, - Accredited agent on the Natural Resources Wales Bat License of Mrs. K. Wilding (S086297/1).
Mr. M. Pritchard ACIEEM	6 years	- Senior Ecologist with extensive cross-species training and experience, - Accredited agent on the Natural Resources Wales Bat License of Mrs. K. Wilding (S086297/1).
Mr. B. Richards Qualifying CIEEM	2 years	- Junior Ecologist with a range of training and experience, - MBiolSci in Biological Sciences (Zoology), - Accredited agent on the Natural Resources Wales Bat License of Mrs. K. Wilding (S086297/1).
Dr. T. Doherty-Bone BSc MSc DIC PhD ACIEEM	8 years	A highly experienced bat surveyor with several years' experience with Tyrer Ecological Consultants Ltd.
Miss. L. Wilde	1 year	A seasonal ecological consultant with experience of undertaking professional bat surveys.

Table 5.2 – Survey dates, times and weather conditions

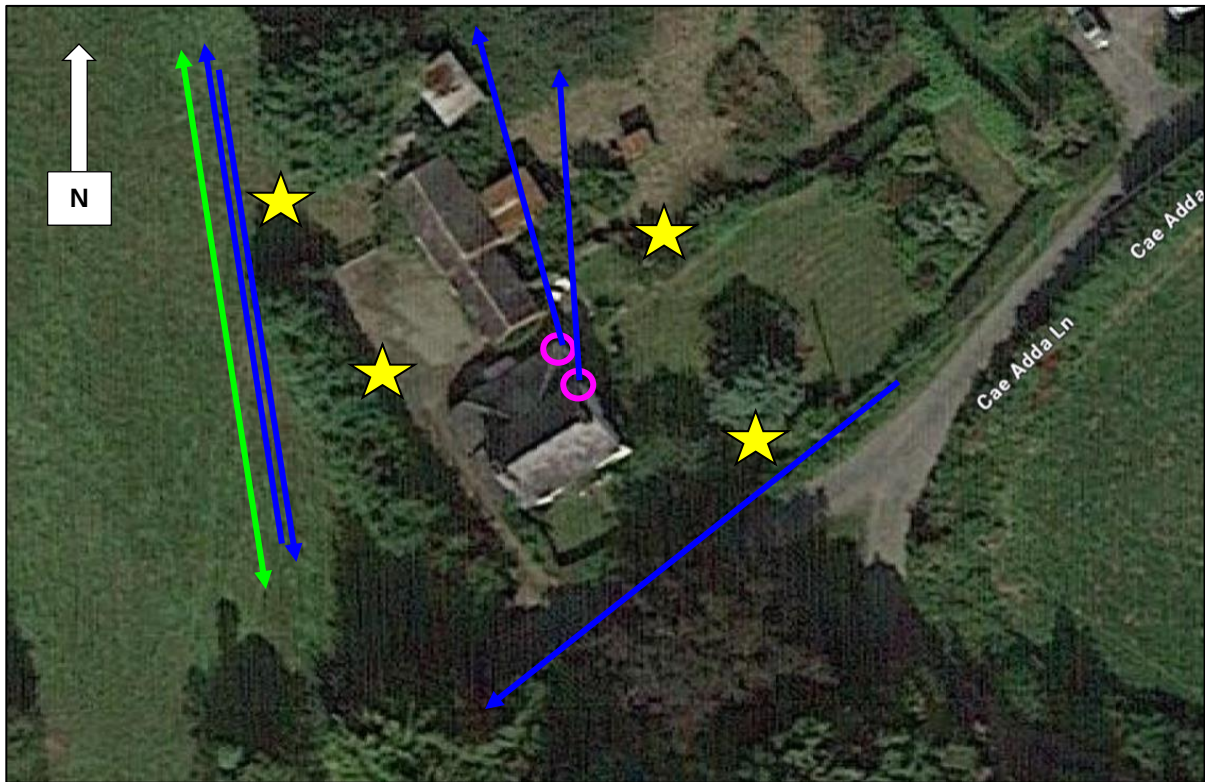
Times of Survey	Date	Weather Conditions
Dusk survey 1 2035 – 2225	08/08/2023	Sunset: 2055: Dry, Calm, 10% cloud cover Start temp: 15 ° C End temp: 12 ° C
Dusk survey 2 2003 – 2215	22/08/2023	Sunset: 2023: Dry, Calm, 10% cloud cover Start temp: 22 ° C End temp: 17 ° C

Table 5.3 – Raw data from the surveys

Survey	Time	Activity
Dusk survey 1 08/08/2023	2035 – 2225	Summary: Emergence of one soprano pipistrelle from a gap at the roof verge/wall-plate on the north-eastern corner (EP1) of the single-storey section of the house and emergence of a soprano pipistrelle from a gap at the roof verge/wall-plate on the north-eastern corner (EP2) of the two-storey section of the house. 2104 hrs: a soprano pipistrelle (SP) emerged from the north-eastern single-storey corner of the house at wall-plate level and commuted north (EP1) 2110 hrs: a Noctule (Noc) was recorded but not observed 2110 hrs: an SP emerged from the north-eastern two-storey corner of the dwelling at wall-plate level and commuted north (EP2) 2112-2119 hrs: a common pipistrelle (CP) commuted and foraged south to north and back to the west of the site 2124-2146 hrs: an SP commuted and foraged south to north and back to the west of the site 2143-2215 hrs: a Daubenton's bat commuted east to south over the site, and activity was recorded over the south of the site by an SP, CP, brown long-eared (BLE) and a single serotine pass General activity comprised regular foraging and commuting by a maximum of two soprano pipistrelles, one noctule, one common pipistrelle, one Daubenton's and a serotine bat.
Dusk survey 2 22/08/2023	2003 – 2215	Summary: Emergence of a soprano pipistrelle from a gap at the roof verge/wall-plate on the north-eastern corner (EP2) of the two-storey section of the house, and of a soprano pipistrelle from beneath a lifted ridge tile on the dwelling. 2036 hrs: an SP emerged from the north-eastern two-storey corner of the dwelling at wall-plate level and commuted south-east (EP2) 2038 hrs: an SP emerged from beneath a lifted ridge tile on the dwelling and commuted west (EP3) 2038-2056 hrs: an SP commuted south to north and back past the east of the house 2044-21:06 hrs: an SP foraged to the north-west of the dwelling frequently 2101 hrs: a Daubenton's bat commuted west to east across the south of the site 2103 hrs: a Noc was recorded but not observed

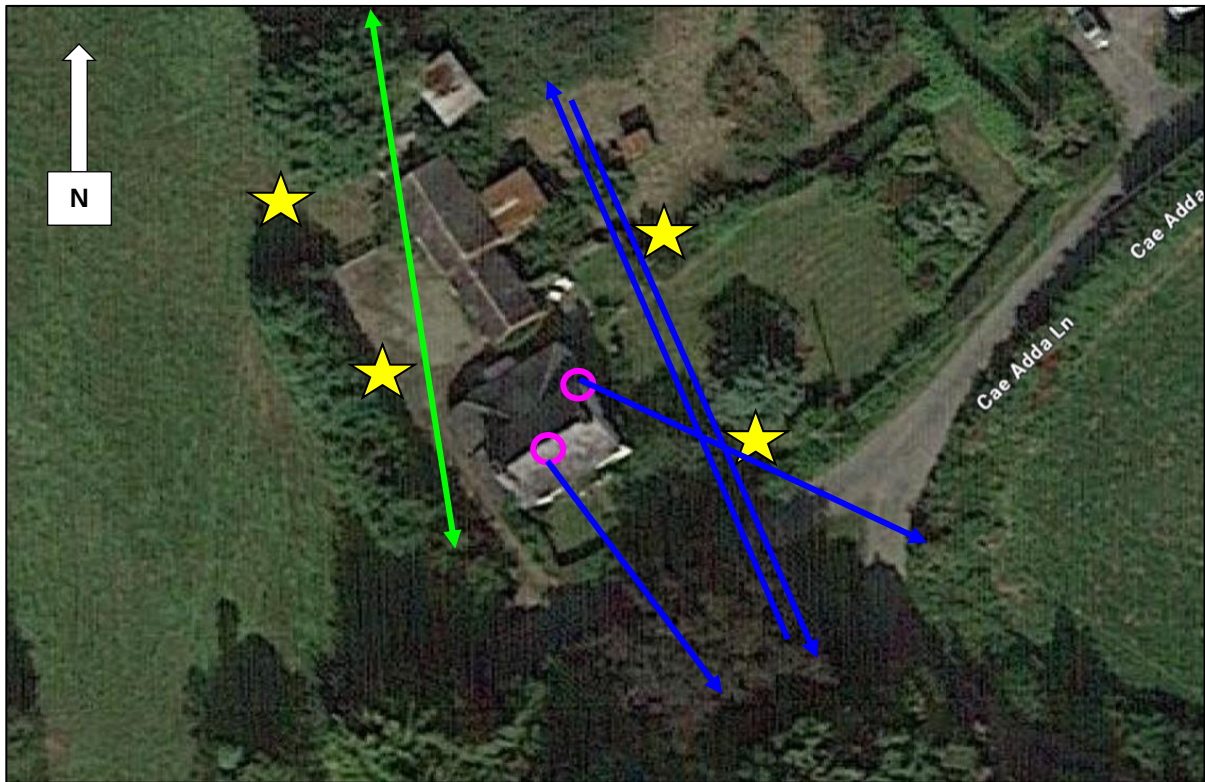
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		2106 hrs: a Natterer's bat was recorded but not observed 2122 hrs: a CP was recorded but not observed 2112 hrs: a Daubenton's bat was recorded but not observed General activity comprised of frequent commuting by up to two soprano pipistrelle, one common pipistrelle, one noctule, one Daubenton's and one Natterer's bat at a time.
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	Survey boundary		Foraging activity
	Surveyor positions		Commuting activity
	Directional compass		Bat emergence point

Figure 5.1 – Dusk survey 1 results (adapted over Google Earth 2022/23)



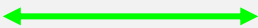
	Survey boundary		Foraging activity
	Surveyor positions		Commuting activity
	Directional compass		Bat emergence point

Figure 5.2 – Dusk survey 2 results (adapted over Google Earth 2022/23)

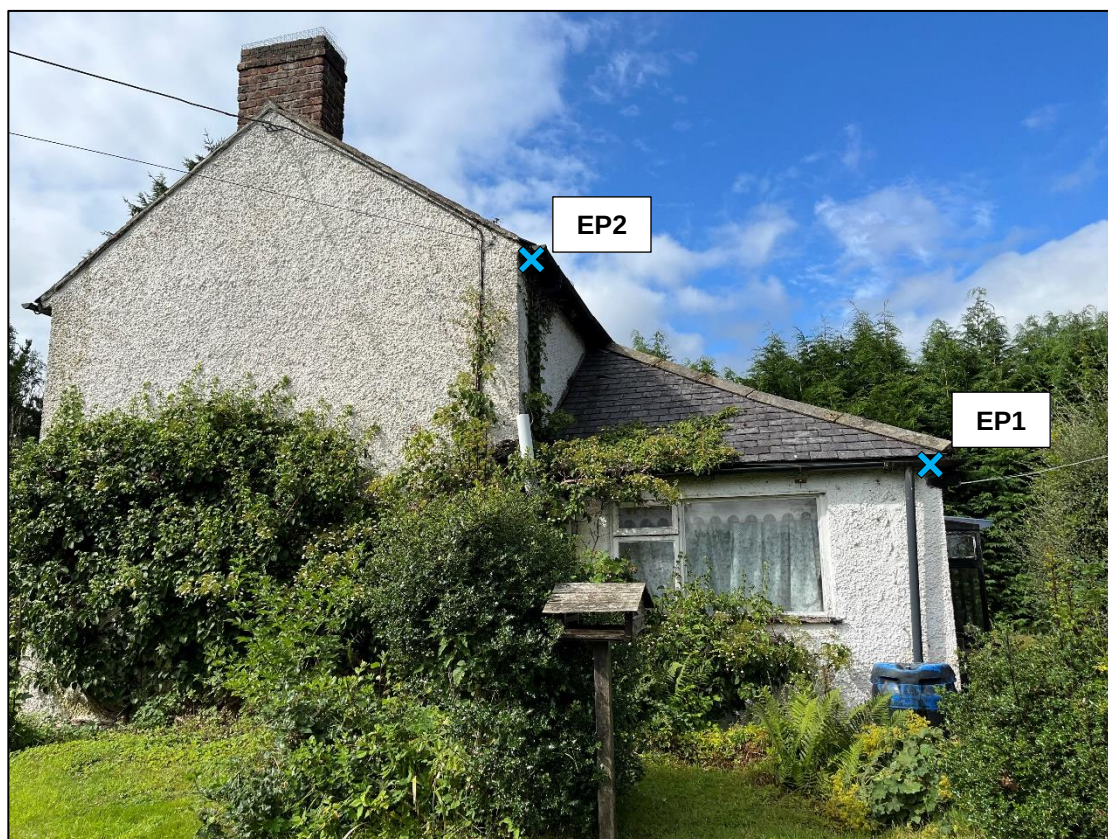


Figure 5.3 – Location of emergence points 1 and 2 from which singular soprano pipistrelles emerged



Figure 5.4 – Emergence points 3 from beneath lifted ridge tiles

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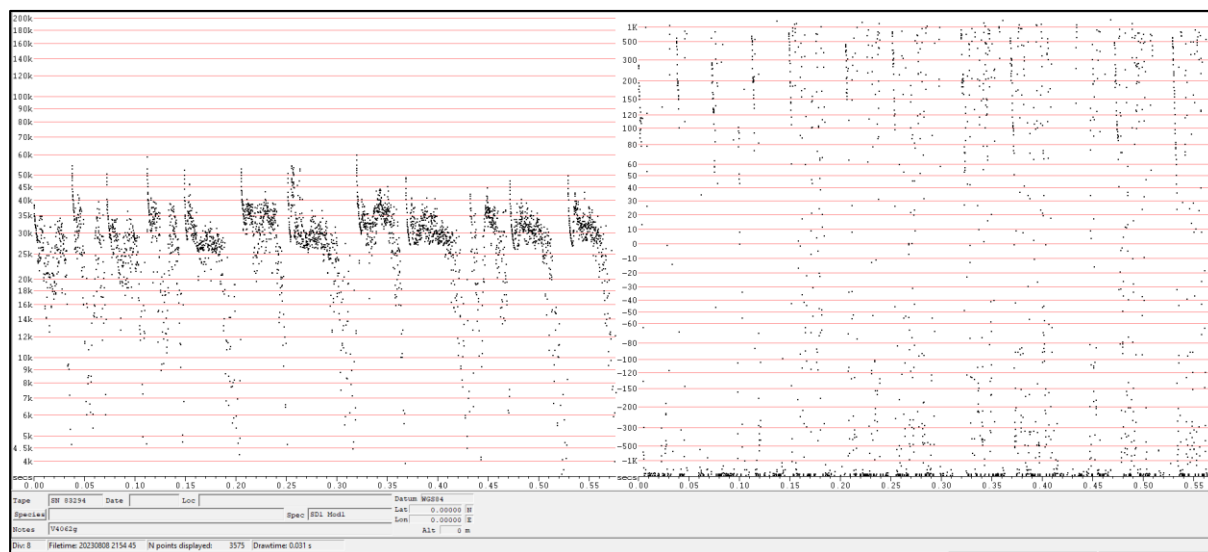


Figure 5.5 – Recording of serotine (*Eptesicus serotinus*) pass viewed in Analook bat call analysis software

6.0 Survey Conclusions & Recommendations

- 6.1 Based on the results gathered during the August dusk surveys, the structure is ascertained to be host to a number of separate roosts, namely three separate soprano pipistrelle (*Pipistrellus pygmaeus*) day roosts, each used by a singular bat. General activity across the site included commuting and foraging by noctule (*Nyctalus noctula*), serotine, Daubenton's (*Myotis daubentonii*), Natterer's (*Myotis nattereri*), and common pipistrelle bats.
- 6.2 Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016), describes a 'Day roost' as:
- "A place where individual bats, or small groups of males, rest or shelter in the day but are rarely found by night in the summer."*
- 6.3 The proposals involve the renovation of the house and outbuilding to bring them into modern living standards; the full extent of the works are not yet known. It is, however, acknowledged that works may occur to the roof, and as such impacts to a protected species will need to be addressed from both a conservation and legal perspective, along with the application of appropriate mitigation before any works can take place. A protected species development licence from Natural Resources Wales may therefore be required to legally affect roosts / places that are "actively used for breeding, rest or shelter (roost)" by bats, **however, before a licence can be applied for all planning issues need to be resolved.**
- 6.5 In order that the LPA can implement its obligations under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (SI 2019/579), appropriate and proportionate mitigation will need to accompany the planning application which will demonstrate that the "*favourable conservation*" of the species concerned can be maintained.
- 6.6 Additionally, it should be noted that installation of new lighting as part of a development scheme that exceeds current levels may have a negative impact upon foraging / commuting bats confirmed as present in the vicinity, particularly if increased light spillage occurs in areas currently valued and relatively free from illumination. There are several measures that can be used to offset impacts upon bats, where lighting is unavoidable; these include, however are not limited to: the light source used and luminaire design, and accessories to direct light at its intended target. Numerous software programmes are currently available which can be used inform lighting plans, demonstrating how lighting decisions will illuminate a site. Refer to the Bat Conservation Lighting Guidelines for further information.

7.0 Indicative Mitigation

- 7.1 From the evidence gathered during the 2023 dusk surveys, the use of the house at Hillside is adjudged to be of 'Low' level significance for soprano pipistrelle bats.
- 7.2 The above has been considered in accordance with the observed species' current conservation status (as according to current EPS mitigation licencing); the proposed mitigation is considered proportionate to that use. If, however, at any time that assessment is revised to a higher level, then the mitigation will also be accordingly revised.
- 7.3 The following procedures and mitigation recommendations are designed to allow the Local Planning Authority (LPA), in association with their ecological advisors, to determine a Planning Application where a European Protected Species has been identified and will be affected by the work for which the Planning Application seeks consent.

In addition, Local Planning Authorities, in accordance with the obligations placed upon them by way of their duties under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (SI 2019/579), have to take into consideration the presence of a European Protected species (EPS) before determination of an application where it/they have been identified.

- 7.4 The LPA will consider the mitigation in relation to the potential success of a Natural Resources Wales (NRW) licence application and if, in their opinion, the mitigation is considered as being appropriate, or if it is over and above what is required; if they determine that the mitigation is appropriate, then a Planning Condition should be attached, requiring the roost provision to be implemented. If the LPA consider that the mitigation is over what is necessary but require "enhancement" as part of their Local Biodiversity / Net-Gain Planning Policies, this should be included in the terms of Consent. The acting bat ecologist, in this case, deems the proposed new roost creation as appropriate and not over and above what is required.
- 7.5 Notwithstanding that Planning Consent is granted, or equally if the work is undertaken outside of the planning system, whereby projects that do not require planning consent may affect bats or their roost (including disturbance), it does not absolve the applicant, site owner, developer or any other party involved with the work from ensuring that an application is made for a Natural Resources Wales Development Licence to legally undertake work that will affect bat(s) or their roost(s). If work is undertaken without a licence and bat(s) or their roost(s) is/are affected, then a breach of current wildlife legislation will occur, for which penalties are severe.
- 7.6 Under Regulation 53(1) and 56(3)(a) of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (SI 2019/579), a licence is required prior to disturbing bats or destroying/damaging or obstructing any place that is used by bats as a resting place or breeding site. The licence is issued by the EPS Licensing Team of Natural Resources Wales.

Summary of Mitigation

- 7.7 Proposals entail the conversion of the structure from its current usage to a habitable space. It is therefore acknowledged that the presence of roosting bats needs to be addressed from both a legal and conservation perspective, and the applicant is keen to maintain the favourable conservation status of the species present. For the purpose of this report, it is considered that all three of the roosts will be subject to destruction, and as such there is a necessity to pursue an alternative solution.
- 7.8 The mitigation proposals outlined in this report are seen to form the most productive way forward that will retain long term roosting opportunities for bats and minimise disturbance whilst also enabling the client to undertake the proposed works to the property.

- 7.9 No habitat loss is anticipated as part of the proposals with local treelines and hedgerows understood to be retained.
- 7.10 To ensure that the favourable conservation status of the species present can be maintained, the following roost creation procedures will be implemented:
- The erection of x1 building suitable bat box (for example the 'Schwegler 2F', 'General Purpose Bat Box' or equivalent box if these models are not available) on a suitable retained tree on site to act as a receptor in the instance that any soprano pipistrelle bats are located during pre-commencement checks. The bat box will be retained post works to serve as a permanent roost provision following the works. See **Figure 7.1** for specification and **Figure 7.2** for location.
 - Receptor roosts serve as a receiver unit for if bats must be captured and translocated to it by the licenced ecologist during the works schedule.



Figure 7.1 – Typical building-mounted boxes, to be erected prior to any works at Hillside



Figure 7.2 – Location of proposed tree-mounted receptor roost [] in reference to the surveyed structure (© Google Earth Pro 2022/23)

Pre-works - assigned Ecological Clerk of Works (ECoW)

- 7.11 Once an EPSML licence is in place, at the pre-commencement stage a suitably qualified Ecologist is to undertake a site induction 'Toolbox talk' to the Licensee and all contractors on possible bat presence and discuss document features taken from the EPSM license, i.e. License, Method Statement, Mitigation Figures and Work Schedule to be kept on site for the duration of the work. Prior to any work being undertaken the presence/absence of bats, as far as is possible, will be established by undertaking a thorough investigation of local areas at which bats have been observed using the site. This will involve a thorough inspection of areas of interest during dismantling using endoscopes and/or narrow-beam torch, as necessary, and will involve a soft roof strip at the local areas of interest around crevices/slates/tiles, as necessary, which is the careful lifting, inspecting and removal of roof components.
- 7.12 The Ecologist will supervise careful dismantling of all places of interest. In addition, at the Ecologist's/ECoWs discretion, wherever opportunities for bats exist in other areas of the building, supervised dismantling/inspections will extend to these areas with strategies for safely removing bat(s) applied, as long as a maternity colony is not considered to have taken up occupancy of the building.
- 7.13 All dismantling of potential roost features will be undertaken during favourable weather conditions (above 9°C).
- 7.14 Where crevices are extensive, or where it cannot be conclusively ascertained that bats are absent from a crevice, exclusion devices may be fitted for a period of 3 days and 3 nights, or longer, at the Ecologists discretion - this is where material is placed over the entrance area(s) of a roost allowing bats a means of escape whilst preventing them from re-accessing. This method will only be adopted if necessary, and exclusion fitted cavities will only be filled in following this process.
- 7.15 This mitigation proposed is subject to the approval of the NRW EPS team who may influence the terms of this mitigation; all proposed roost provisions outlined hereafter will be dedicated for bats and permanent.

Work to be undertaken by the Ecologist

- 7.16 **Capture/Exclusion:** Once an EPSM licence is in place the Licensee/assigned contractors should ensure that a safe means of access such as scaffolding or vertical lifting platform/cherry picker is in place, to allow the named Ecologist to investigate the confirmed roost areas. In addition, wherever opportunities for bats exist in other parts of the buildings, the supervised dismantling will extend to these areas at the discretion of the ecologist in attendance as covered above.
- 7.17 In the event of bat(s) being present, it/they will be removed, placed in a secure box with soft tissue and transferred into the receptor bat box that will have previously been erected nearby. Only once it has been conclusively established by the named Ecologist that bat(s) are absent can works continue to completion. In the unlikely event that bats are found outside of supervision time, then as legal requirement and conditions of the licence, work will immediately cease and the named Ecologist will be contacted for further advice; contractors must not touch, handle or in any way cause bats to move without ecological supervision.

Work to be undertaken by the Contractor

- 7.18 **New roost provision:** To provide like-for-like crevice roost conditions to effectively replicate the roost being lost at Hillside the following mitigation will be provided:

- Two like-for-like access point for bats, respectively located at the roof verge/wall-plate in the north-eastern corner of both the single-storey and two-storey sections of the house, which will permit ingress to underfelt to be instated beneath the roof cover for bats,
- One like-for-like access point beneath a newly created, lifted ridge tile located at the centre of the roof ridge, on the renovated house.

The gaps at wall-plate/roof verge will be a minimum of 50mm wide x 30mm deep to allow bat ingress/egress; to create the gaps plastic pipes can be used initially, as illustrated below, then removed once the verge/wall-plate has been rendered and roofing slates or tiles fitted. The access points can be covered over with eaves or fascia/barge boards if necessary, though it must be ensured that bats can freely access the gaps through the incorporation of 15 -18mm battens affixed beneath the covering.

The ridge access point will be created through placing two ridge tiles with a gap of approximately 50mm between and laying a third ridge tile on top to create a small gap.

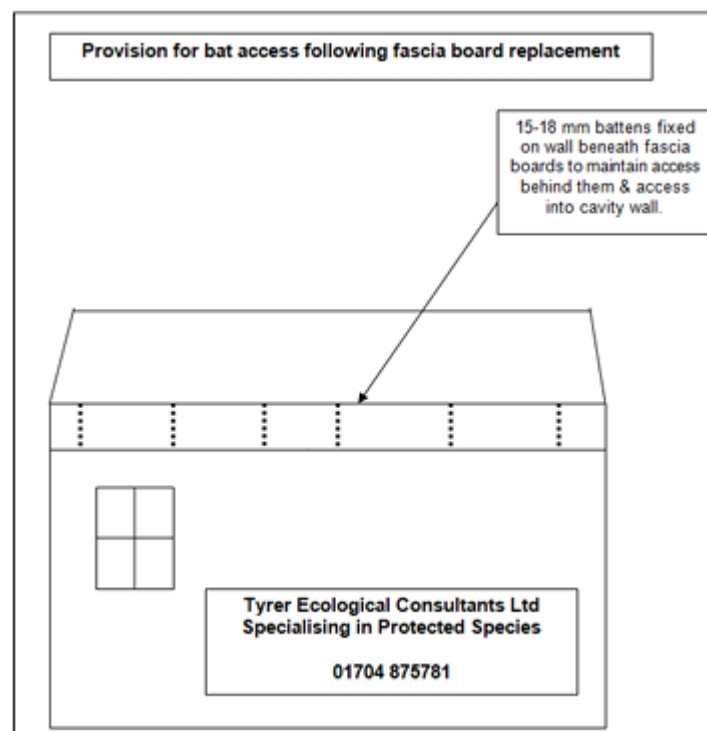
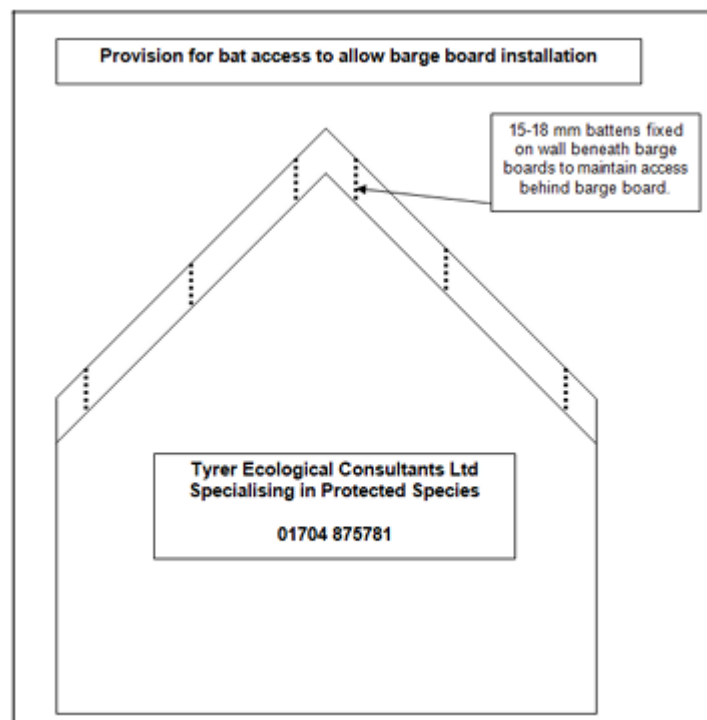
It is imperative that traditional bitumen 1F roofing felt will be used as the chosen local underfelt / roof lining as opposed to any breathable roofing membrane (BRM). Modern breathable roofing membranes (BRM) entrap bats through wear and tear in the synthetic polymers used to protect the breathable membrane causing bats harm, injury and death. Alternatively, [one modern roof lining](#) has been approved by the BCT for use in roosts.

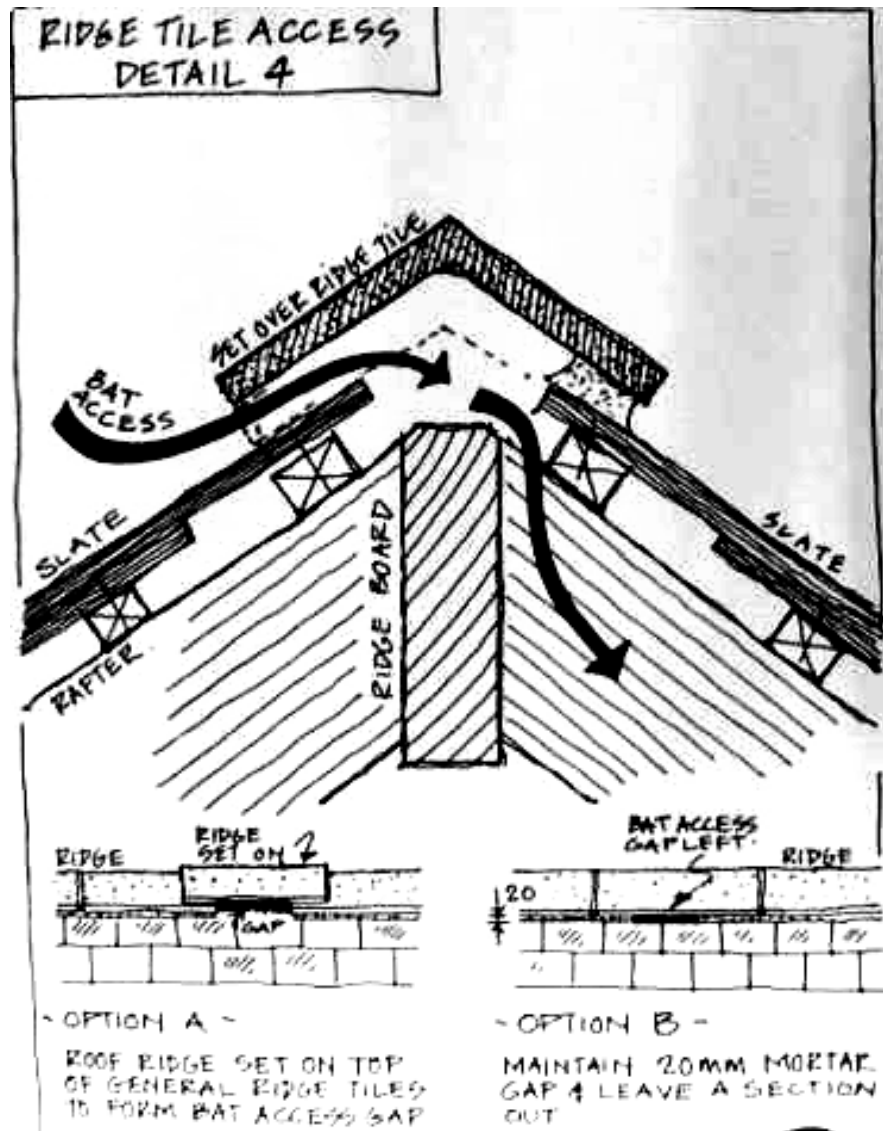
Should the use of a bitumen 1F or other safe lining not be feasible for any reason, alternative mitigation measures will be required. However, the applicant should be aware that alternative mitigation will be less likely to meet the 'like-for-like' roost replacement requirements of NRW, and pose greater risk of the EPSML application being refused.

All proposed mitigation is subject to finalisation during the EPSML application process.

- 7.19 The new roost provision proposed will be permanent and dedicated for bats to ensure future favourable conservation status is maintained; it cannot be used for any other purpose.
- 7.20 Management or maintenance requirements for the roost are considered not applicable though it will be the Licensee's responsibility to ensure all new roost access points and building condition remains in favourable working order post-development.
- 7.21 For safeguarding the Ecologist will carry out a suitable check mid-development to ensure the mitigation has been delivered.







Ridge tile access should be made with the incorporation of traditional Bitumen 1F underfelt immediately beneath ridge tiles. Breathable BRM membrane can cause significant problems where bats are in contact with it, whereby their fine claws become entangled within the fibres of the membrane, entrapping and killing bats.

8.0 Bibliography

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Appendix I: Inspection & Assessment in relation to Bats & Breeding Birds, Tyrer Ecological
Consultants, August 2023