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Dusk/Dawn Survey Results

ESP Hill Farm
Frog Lane
Holt
Wrexham
LL13 9SU

National Grid Ref: SJ40235399



ESP Hill Farm, Frog Lane, Holt, Wrexham, LL13 9SU
Dusk & Dawn Survey Results

Document Title	Dusk Survey Results
Prepared for	Blueprint Architectural Ltd
Prepared by	Tyrer Ecological Consultants Ltd

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Survey Dates	Dusk: 14/05/2021	Dusk: 08/06/2021	Dawn: 28/06/21
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1.0 Background and Introduction

- 1.1 As part of a proposed planning application regarding the ESP Hill Farm, Frog Lane Holt, Wrexham, LL13 9SU, Tyrer Ecological Consultants Ltd conducted a preliminary ecological appraisal which included a daytime inspection and assessment in relation to bats and breeding birds during April 2021. Tyrer Ecological Consultants Ltd conducted the recommended dawn and dusk surveys in May and June of the active bat season in 2021.
- 1.2 Proposals are understood to involve the conversion of the existing barn building for residential use as an extension of the existing adjacent farmhouse.
- 1.3 The results of the daytime survey concluded the following; (see Figure 1.1) whilst following best practice guidance, the storage barn at ESP Hill Farm holds 'High' bat roost suitability in accordance with the Bat Conservation Trust - Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016).

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 Summary of Appendix I

- 1.4 The results, conclusions and recommendations following the surveys, including any indicative mitigation to inform an application to Natural Resources Wales for a European protected species mitigation licence (EPSML), where necessary, will be supplied within this report.
- 1.5 This report should be read, understood and presented to the local authority as an addendum document to Appendix I (see Contents page).
- 1.6 In accordance with *Biodiversity Net Gain: Good practice principles for development* (CIEEM *et al*, 2019), measures have been recommended proportionate to anticipated impacts to ensure that the proposed development results in a biodiversity net gain.

2.0 Bats - Legislation & Policy

2.1 Planning Policy Wales, 11th Edition (2021) is the Welsh Government's policy document and it describes the land use context for using land sustainably. The document supports every strategy published by the Welsh Government and it is supplemented by a variety of Technical Advice Notes (TAN's) and any circulars.

2.2 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.

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.

2.3 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.

2.4 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.

2.5 Planning authorities should ensure that features and elements of biodiversity value are retained on site, and enhanced or created where ever possible, by adopting best practice site design and green infrastructure principles. The provision of up to date ecological survey information will assist in this process. Where necessary, planning authorities should seek to modify the development proposal through discussion with the applicant at the earliest possible stage. Biodiversity and green infrastructure modifications should draw on the issues and opportunities identified in a preliminary assessment. In some circumstances, it will be appropriate to attach planning conditions, obligations or advisory notes to a permission, to secure biodiversity outcomes.

2.6 When all other options have been exhausted, and where modifications, alternative sites, conditions or obligations are not sufficient to secure biodiversity outcomes, offsite compensation for unavoidable damage must be sought. This should normally take the form of habitat creation, or the provision of long-term management arrangements to enhance existing habitats and deliver a net benefit for biodiversity.

Where the adverse effect on the environment clearly outweighs other material considerations, the development should be refused.

2.7 The Environment (Wales) Act 2016 ("the Act") - requires local planning authorities to have regard to area statements in the development of Local Development Plans.

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.”

2.8 All British bats and their ****roosts** are afforded protection under Schedule 5 of the Wildlife & Countryside Act (1981) (as amended) and are listed in Schedule 2 of the Conservation of Habitats & Species Regulations 2017. When dealing with cases where a European Protected Species (all UK bats) may be affected, a planning authority is a competent authority within the meaning of the Regulation 7 of the 2017 Regulations and therefore has a statutory duty to have due regard to the provisions of the Regulations in the exercise of its functions.

2.9 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.

2.10 Use of Buildings by Bats

- a) Summer breeding roost
- b) Hibernation roost
- c) Transitional or temporary roost

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 any of the above reasons, however it should be noted that under the Conservation of Habitats & Species Regulations 2017 (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, whichever terminology is used is legally protected whether or not bats are in occupation.

3.0 Bats in Wrexham

3.1 Up to eleven 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 Methods

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

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professional judgement of an experienced ecologist. Where examples are used in the guidelines, they are descriptive rather than prescriptive.”

Relative to the above the survey protocol has been determined using the collective and long standing experience of Tyrer Ecological Consultants Ltd and knowledge of the specific nature of the site.

Survey Protocol

- 4.2 The timing of the surveys took place in May & June thus within the main active period of bats, at a time when maternity colonies have formed / returned to summer roosts and bats are in a highly active and social stage.

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 European Protected Species Mitigation licences (EPSML).

When considering survey protocol the decisions about whether dusk or dawn surveys are selected are based on the extensive experience of the 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 and how complex a building is relative to observations.

It should also be noted that at dawn temperatures are usually lower than at dusk as a result bat activity can, in some locations, be less frequent. Additionally, where singular/small numbers of bats are present and there are no survey constraints then dawn surveys are of no more value than dusk surveys; singular bats can and do return to a roost before dawn and as a result a dawn survey would not record them anyway. Dawn surveys are more productive when “back tracking” bats to a roost from foraging grounds.

Survey protocol should not be determined by parties who are 1) not familiar with the site 2) do not have a sufficient level or experience in relation to the undertaking of dusk/dawn bat surveys.

- 4.3 The number of surveys and surveyors was adequate relative to the roost potential that was identified i.e. ‘Moderate’ requiring three surveyors to accurately monitor potential roost features (PRF’s) across both buildings at any one time.
- 4.4 Surveyors were strategically positioned so that all elevations with bat roost potential, as described in the daytime report, could be observed without limitations. The surveys were aided with Anabat 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 computer software to verify field observations

5.0 Survey Results

Two dusk emergence and one dawn re-entry surveys were undertaken on the 14th May, 8th June and 28th June 2021 by a combination of three surveyors. Surveyor credentials have been given within Table 5.1. Tables 5.2 and 5.3, alongside Figure 5.1, 5.2 & 5.3 documents the results of the dusk surveys.

Table 5.1 - Surveyor Credentials

Name	Experience	Details
Dusk survey		
Mr. M. Smith	6 years	An experienced seasonal bat surveyor with Tyrer Ecological Consultants Ltd
Mr. H. Green	30+ years	Highly experienced bat surveyor whom has professional surveying experience spanning many years with Tyrer Ecological Consultants Ltd - Class 2 Natural England Bat Licence (CLS-03290).
Dr. T. Doherty-Bone	12 years	A highly experienced freelance Ecologist working as a sub-contractor for Tyrer Ecological Consultants Ltd.
Dusk survey		
Mr. M. Smith	6 years	An experienced seasonal bat surveyor with Tyrer Ecological Consultants Ltd
Mr. H. Green	30+ years	Highly experienced bat surveyor whom has professional surveying experience spanning many years with Tyrer Ecological Consultants Ltd - Class 2 Natural England Bat Licence (CLS-03290).
Ms. A Russell Qualifying CIEEM	5 years	A Consultant Ecologist with Tyrer Ecological Consultants Ltd and an accredited agent on the (Class 2) Natural England bat licence of Mrs. K. Wilding (CLS-14227).
Dawn Survey		
Mr. H. Green	30+ years	Highly experienced bat surveyor whom has professional surveying experience spanning many years with Tyrer Ecological Consultants Ltd - Class 2 Natural England Bat Licence (CLS-03290).
Mr. M. Mulholland	21 years	An experienced seasonal ecological consultant with experience of undertaking professional bat surveys
Mr. M. Smith	6 years	An experienced seasonal bat surveyor with Tyrer Ecological Consultants Ltd

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Table 5.2 - Survey dates, times and weather conditions

Times of Survey	Date	Weather Conditions
Dusk survey 2042 - 2230	14 th May 2021	Sunset: 2102: Light Rain and Light Air, 100% cloud cover Start temp: 13 ° C End temp: 11 ° C
Dusk survey 2115 - 2305	8 th June 2021	Sunset: 2135: Dry, Calm, 5% cloud cover Start temp: 18 ° C End temp: 15 ° C
Dawn survey 0318 - 0448	28 th June 2021	Sunrise: 0448: Dry, Calm, 100% cloud cover Start temp: 15 ° C End temp: 13 ° C

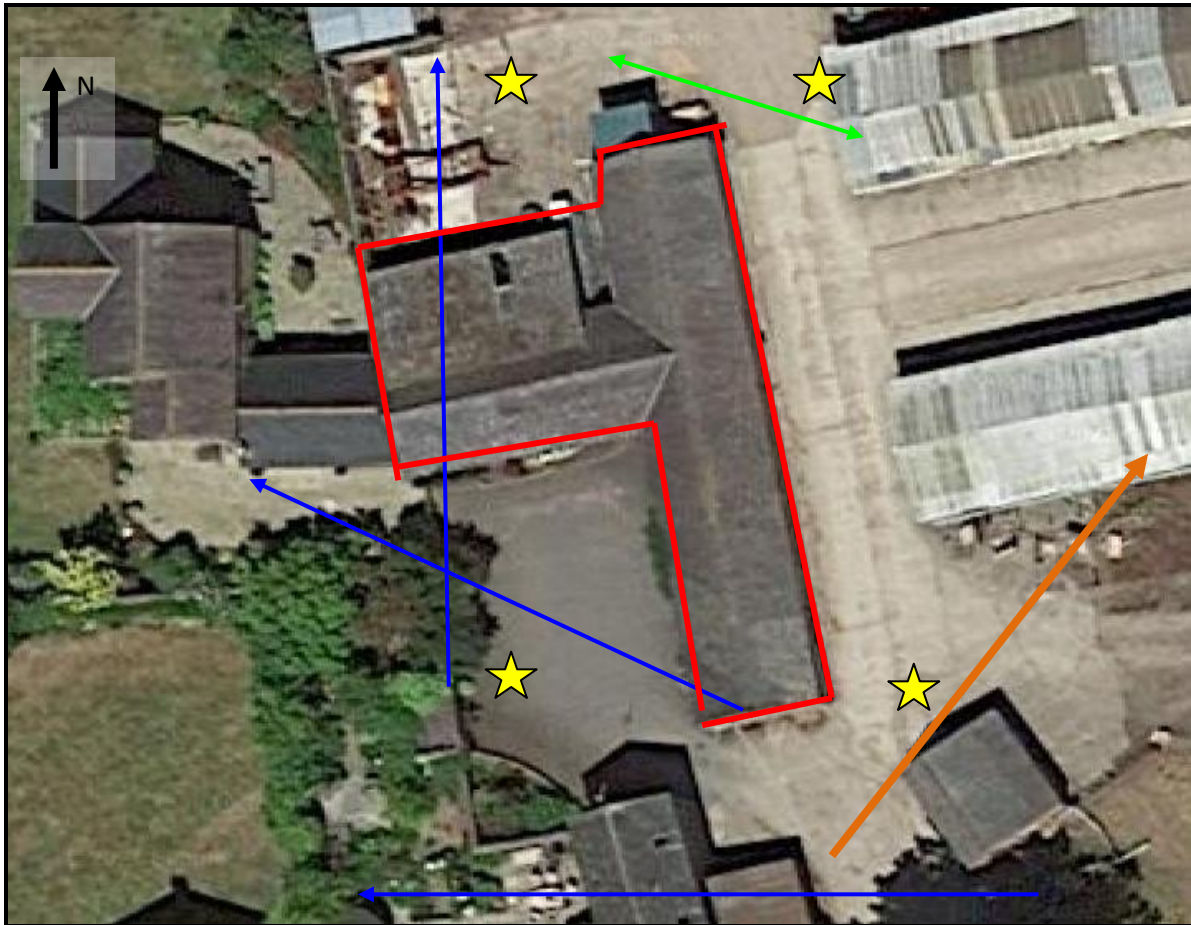
Table 5.3 – Dusk Survey Results

Dusk Survey	Time	Activity
14/05/2021	2042 - 2230	Summary: No bat emergence for the duration of the survey. 2118 hrs: Noctule passing over the car park to the east. 2124 hrs: Brown Long-eared bat passed without a visual. 2126 hrs: Pipistrelle Species commuting to the south of the farm with no visual. 2135 hrs: Common Pipistrelle commuting south to west across the site. 2140 hrs: Soprano Pipistrelle circling the north of the site. Activity comprised of occasional commuting by Noctule, Brown-long eared, Soprano and Common Pipistrelle bats.
08/06/2021	2115 - 2305	Summary: No bat emergence for the duration of the survey. 2211 hrs: Soprano Pipistrelle passed over the driveway south to north. 2217 hrs: Feeding by common Pipistrelle in the adjacent barn. 2219 hrs: Soprano Pipistrelle passed over the driveway north to south. 2220 hrs Constant foraging to the end of the survey in car park and in the adjacent open plan barns by a Soprano Pipistrelle. 2240 hrs: Feeding in the barn adjacent to the survey building by a

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		Common Pipistrelle Activity compromised of constant feeding and commuting by Common and Soprano Pipistrelle bats.
28/06/2021	0318 - 0448	Summary: No bat emergence for the duration of the survey. 0308 hrs: Common Pipistrelle passed over the driveway. 0406 hrs: Common Pipistrelle foraging in the carpark. 0406 – 0413 hrs: Soprano Pipistrelle foraging in the carpark. 0413 hrs: a Soprano Pipistrelle re-entered the garage of the occupied dwelling to the south of the site. Activity comprised minimal foraging and commuting by Common and Soprano Pipistrelle bats.

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Dusk Survey 1 – 13/05/2021

Key			
	Site Boundary		Circling activity
	Surveyor Positions		Commuting activity
	Directional compass		Noctule pass

Figure 5.1 - Visual Aid - Dusk Survey 1 Results with Key



Dusk Survey 2 – 08/06/2021

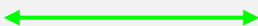
Key			
	Site Boundary		Foraging activity
	Surveyor Positions		Commuting activity
	Directional compass		

Figure 5.2 - Visual Aid - Dusk Survey 2 Results with Key

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Dawn Survey 1 – 28/06/2021

Key			
	Site Boundary		Foraging activity
	Surveyor Positions		Commuting activity
	Directional compass		

Figure 5.3 - Visual Aid - Dusk Survey 2 Results with Key

6.0 Dusk Survey Conclusions & Recommendations

6.1 From the two dusk surveys and one dawn survey results, it can be concluded that whilst using best practice survey methodology, emergence of bats was absent at ESP Hill Farm; use of the open plan barns to the north-east for foraging and the occupied dwelling to the south for roosting was observed, though these buildings do not form a part of the proposed works. Activity comprised of passes and foraging activity by Common (*Pipistrellus pipistrellus*) and Soprano (*Pipistrellus pygmaeus*) Pipistrelle, Noctule (*Nyctalus noctula*) and Brown-long eared (*Plecotus auritus*) bats. Based on the abundant Brown Long-eared droppings and feeding remains and the scattered *Pipistrellus sp.* droppings recorded during the initial daytime assessment, but taking into account the absence of roosting behaviour at the target building across three surveys by any bat species, it is concluded that the barn hosts 'Transitional' roosts for Brown Long-eared and *Pipistrellus sp.* bats.

6.2 Bat Conservation Trust - Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016) describes a 'Day roost' as a place:

"Used by a few individuals or occasionally small groups for generally short periods of time on waking from hibernation or in the period prior to hibernation".

6.3 The permanent destruction of a bat roost(s) will therefore need to be addressed from both a conservation and legal perspective along with the application of appropriate mitigation before any works can take place that will impact the identified areas.

A European Protected Species Mitigation Licence (EPSML) will be required to legally destroy/damage/obstruct/modify/disturb a place that is 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.

6.4 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.

6.5 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 free from illumination such as illumination of boundary features. 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 strategic information if applicable.

7.0 Indicative Mitigation

7.1 From the evidence gained during the dusk surveys, the use of the barn at ESP Hill Farm by bats is considered to be of 'low' level significance relatable to both *Pipistrellus sp.* and Brown Long-eared bats and their current status (as according to EPS licencing applications); the proposed mitigation is proportionate to that use. However, if at any time that assessment is revised to a higher level, then the mitigation will also be accordingly revised.

- 7.2 The following procedures and mitigation recommendations are designed to allow the Local Planning Authority (LPA), in association with their ecological advisers, 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.

- 7.3 The LPA need to consider the mitigation in relation to the potential success of a Natural Resources Wales (NRW) licence application and/or 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 in accordance with this ecological report.

If the LPA consider that the mitigation is over and above 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 deems the proposed new roost creation as appropriate and not over and above what is required.

- 7.4 **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.

- 7.5 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

- 7.6 The conversion of the existing barn for residential use is the key component of the applicant's plans for the site, though final proposals are unconfirmed at the time of issue; however, it is acknowledged that the presence of roosting bats needs to be addressed from both a legal and conservation perspective.

The mitigation proposals outlined in this report are seen to be the most productive way forward that will retain long term roosting opportunities for bats.

- 7.7 No foraging habitat will be lost as a result of the proposals. Existing foraging habitat in the form of nearby trees and hedgerows will mean all proposed new roost(s) will not be at any further distance from valuable foraging areas of the site.

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- 7.8 To ensure that bats are not left without a roost while the work takes place one Schwegler 2F bat box and one Schwegler 2FN bat box (or suitable equivalents) will be erected on suitable trees in proximity to the survey area; if this is not possible, pole-mounted boxes will be required. The boxes will act as receptors should bats have to be captured and relocated during the work schedule (see Figure 7.1).

The receptor bat boxes will act as receiver boxes should bats have to be captured by hand and relocated to it by the ecologist during the work schedule; they will be retained permanently post-development to provide long term roost opportunities for bats.

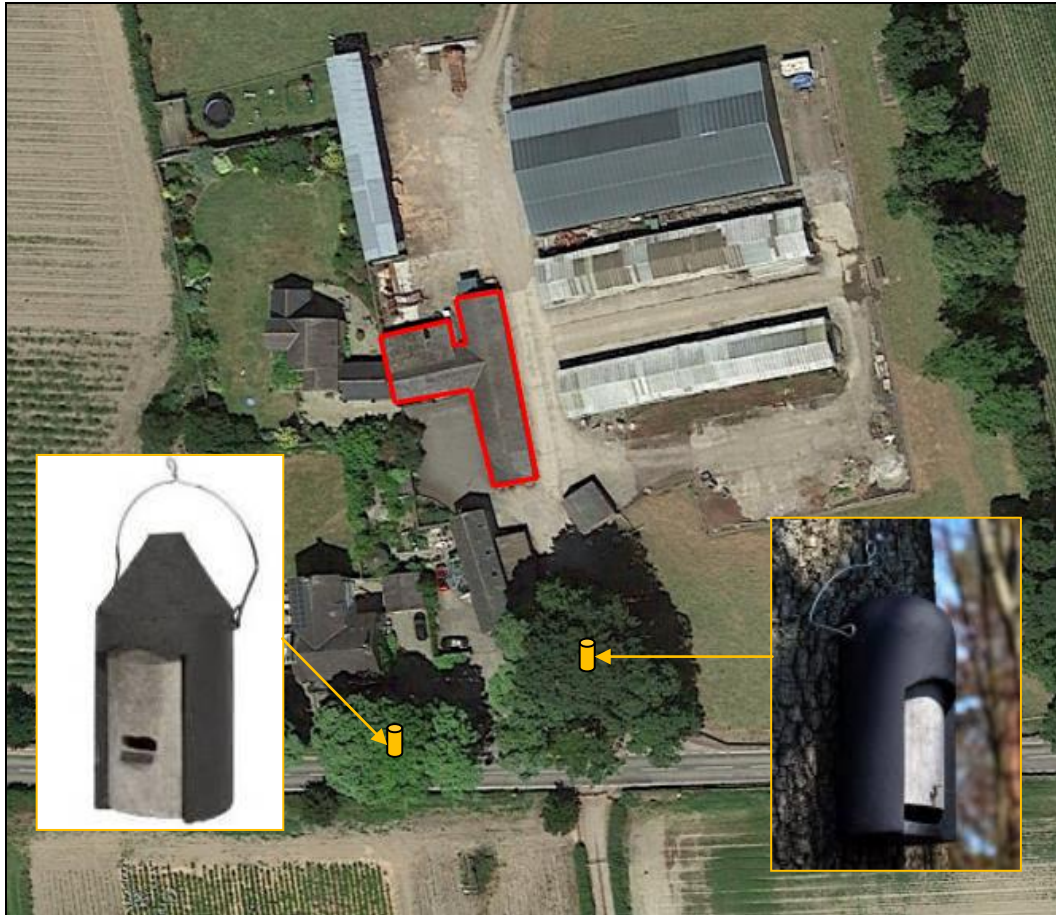


Figure 7.1 - Proposed location of receptor roosts [] (Google Earth, 2018), and 2F/2FN Schwegler Bat boxes (overlaid)

Assigned Ecological Clerk of Works - EcOW

- 7.9 At the pre-commencement stage a suitably qualified Ecologist is to undertake induction 'toolbox talk' on possible bat presence and present/discuss document features taken from the 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 bats as far as is possible will be established by undertaking detailed investigation of the areas at which bats have been observed using the building; typically within internal crevices inside the barn. The ecologist will supervise careful dismantling of all places that will be removed as part of the proposed work which have

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been identified as offering roost access or roost potential at the ecologist discretion. In addition wherever opportunities for bats exist in other parts of the building the supervised dismantling will extend to these areas with strategies for safely removing bat(s), as long as a maternity colony is considered not to have taken up occupancy of the building.

All dismantling of roost features will be undertaken during favourable weather conditions and outside of the active season of bats (May-October inclusive).

No increase in external lighting is expected during the conversion; should additional lighting be installed it must be directed away from any bat roost access points, flight paths and foraging areas.

No post-development monitoring is required for the roosts, as stated following current guidance concerning transitional roosts/low significance roosts.

All mitigation proposed is subject to the approval of the Natural Resources Wales EPS team who may influence the terms of this mitigation; all proposed roost provisions outlined hereafter will be dedicated for bats and permanent.

7.10 Work undertaken by the Ecologist

Capture/Exclusion: Once an EPSML licence is in place the contractor will provide a safe means of access to allow the ecologist to investigate the confirmed roost area for bat presence at ESP Hill Farm

In addition wherever opportunities for bats exist in other parts of the building the supervised dismantling will extend to these areas at the discretion of the ecologist in attendance. In the event of bat(s) being present, it/they will be removed, placed in a secure box with soft tissue and immediately transferred into the receptor roosts that will have previously been instated at nearby trees as detailed above. Once it has been established by the ecologist that bat(s) are absent the building works will continue to completion.

In the unlikely event that bats are found outside of supervision time, then as legal requirement and conditions of the granted licence work will immediately cease and the ecologist contacted for further advice; contractors must not touch, handle or in any way cause bats to move.

7.11 Work undertaken by the Contractor

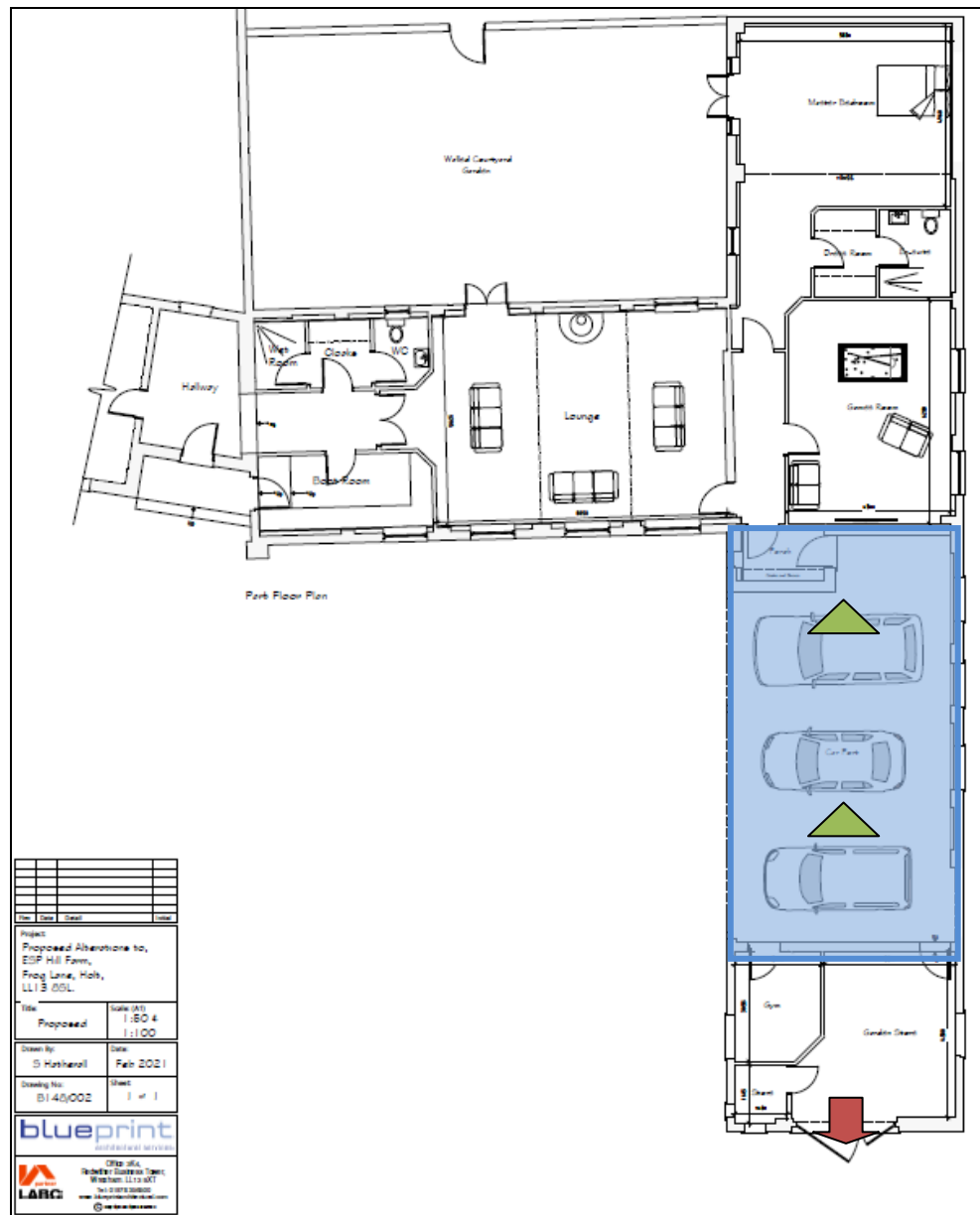
- New roost provision will be re-created in the form of one new bat box to be integrated at the southern gable elevation; this will take the form of one Habibat Bat Box mounted at 3-6m above ground level,
- Further roosting provision will be provided in the form of additional access points at the ridge tiles; this will take the form of two ridge tiles places with ends on top of the adjacent tiles to create a small gap either side,
- As part of this roost creation process 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. Where bitumen 1F felt is not the chosen roof lining for the building, an area of the felt may be instated in a 1m² area around the

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access points; however, this must be separated from the rest of the roof space using timber roofing batons to prevent bats moving out of this area.

- *As a biodiversity enhancement measure, it is proposed that a new dedicated loft space for Brown Long-eared bats might be incorporated into the creation of the new garage; this would take the form of a space to the dimensions of approximately 10m length x 7.5m width x 1.5m height (at ridge); in this instance rough-cut, untreated timbers would be used internally along with traditional bitumen 1F underfelt as the chosen underlining for the roof, and access provided for bats via the aforementioned lifted ridge tiles or alternatively new bat slates.*

See Figures below for mitigation design and locations



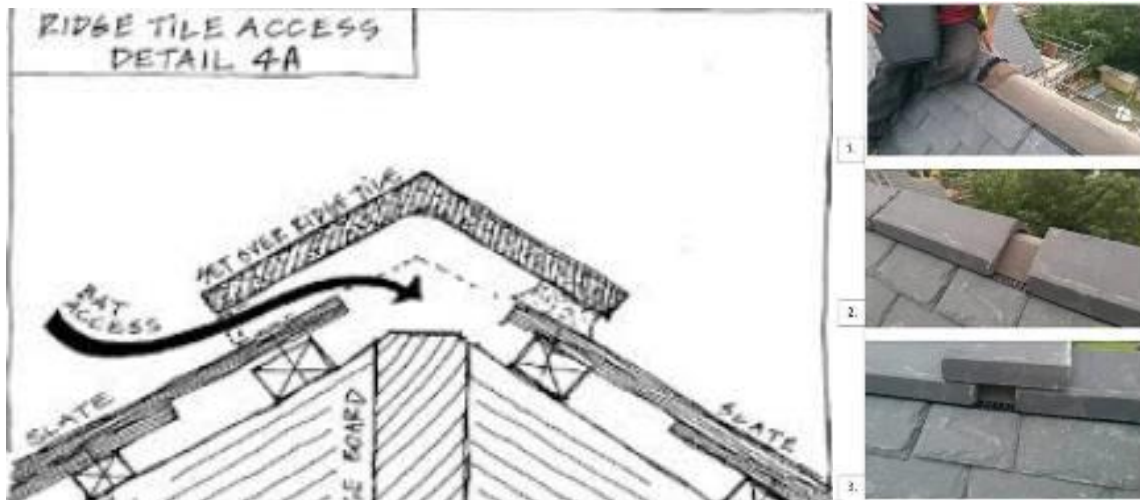
Location of proposed new bat box (red arrow), ridge access (green triangle), and biodiversity enhancement loft (blue area).

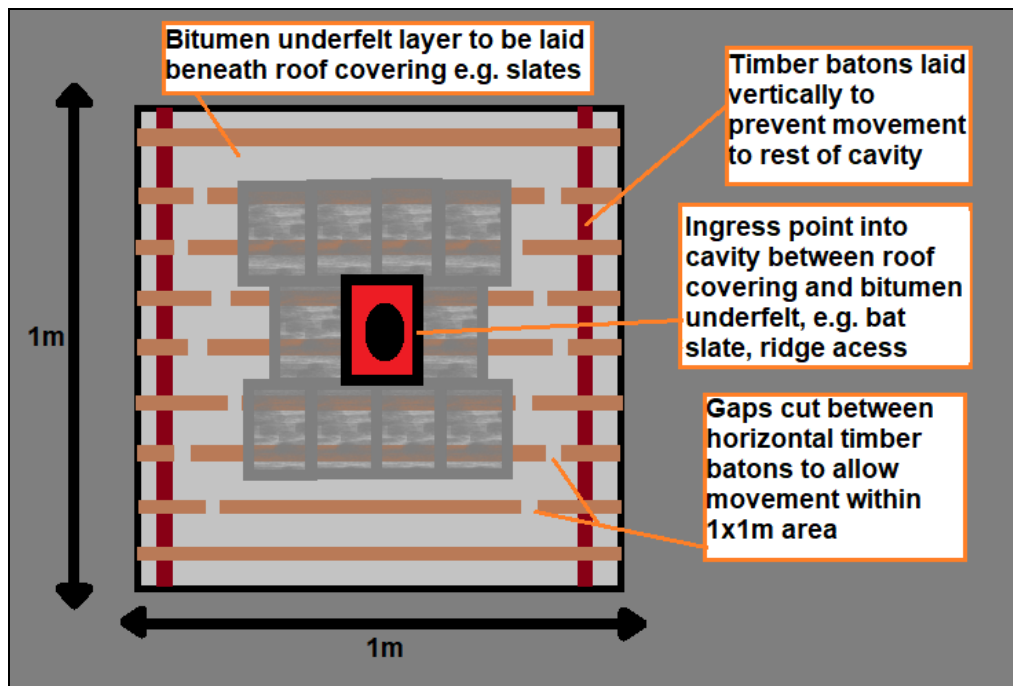
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The Habibat Bat Box is a solid box made of insulating concrete with internal roosting space. The box blends seamlessly into brick-built properties and may be incorporated into the fabric of buildings, being best placed on gable elevations.



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.





Breathable Roofing Membranes (BRMs) can trap the feet of bats, resulting in death or injury. It is therefore essential that any ingress points lead to areas lined with traditional bitumen 1F underfelt which is bat safe. It is also essential that there is no access to areas lined with BRM from the ingress point; therefore sections of timber baton must be laid vertically between the horizontal roofing batons, effectively preventing movement between areas.

This area of Bitumen 1F underfelt should be incorporated during the roofing of the dwelling, directly beneath the lifted ridge tile access points.



7.0 References

- **Bat Conservation Trust (BCT)**, 2018. *Bats and artificial lighting in the UK: Bats and the Built Environment series*. Available from: <https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/>
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ESP Hill Farm, Frog Lane, Holt, Wrexham, LL13 9SU
Dusk & Dawn Survey Results

Appendix I: *Preliminary Ecological Appraisal*; ESP Hill Farm, Frog Lane, Holt, Wrexham, LL13 9SU (Tyrer Ecological Consultants Ltd, April 2021).