

Dusk Survey Results

October 2021

Barn at Mulsford Farm,
via Mulsford Lane,
Sarn,
Malpas,
SY14 7LP

National Grid Ref: SJ42834477



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This report aims to provide general advice on ecological constraints associated with any development of the site and includes recommendations for further survey; it is not intended that this report should be submitted with a planning application for development of the site, unless supported by the results of further surveys and a detailed assessment of the effects of the proposed development

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Table of Contents

1.0 Background and Introduction

2.0 Bats - Legislation & Policy

3.0 Bats in North Wales

4.0 Dusk Survey Results

5.0 Dusk Survey Conclusions & Recommendations

6.0 Indicative Mitigation

7.0 References

Appendix I: *'Inspection & Assessment in relation to Bats & Breeding Birds'* (October 2021)

1.0 Background and Introduction

- 1.1 As part of a proposed planning application for a barn at Mulsford Farm, via Mulsford Lane, Tyrer Ecological Consultants Ltd carried out two dusk surveys in August - September 2021. The surveys were commissioned by Nichola Gibson Architectural Design; proposals are for the conversion of an existing barn for residential use (see Figure 1.1). The dusk surveys followed up a daytime inspection and assessment in relation to bats and breeding birds which established that the barn pertains to offer 'Moderate' bat roost potential in line with current Bat Conservation Trust (BCT) guidelines.
- 1.2 See Appendix I for reference to the original diurnal assessment report.



Figure 1.1 – Photographs as Existing (©Nicola Gibson Architectural Design)

- 1.3 The results, conclusions and recommendations following the surveys, including any indicative mitigation to inform an application to Natural Resources Wales (NRW) for a European protected species mitigation licence (EPSML), where necessary, will be supplied within this report.
- 1.4 This report should be read, understood and presented to the local authority as an addendum to Appendix I (see Contents page).

2.0 Bats - Legislation & Policy

Bats

- 2.1 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 2019 (as amended). 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 2019 Regulations and therefore has a statutory duty to have due regard to the provisions of the Regulations in the exercise of its functions.
- 2.2 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.

2.3 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 the any of the above reasons, however it should be noted that under the Conservation of Habitats & Species Regulations 2019 (as amended) (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 Policy EC6 of the Wrexham Unitary Development Plan mirrors these statements within PPW and goes on to 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.”

and...

5.8 - This policy applies to, in order of importance: nature conservation sites of international importance comprising Special Protection Areas, Special Areas of Conservation, and Ramsar Sites; nationally important Sites of Special Scientific Interest; regionally important Geological Sites; locally important Wildlife Sites; and other protected species and their habitats. The Council will require a survey to be undertaken in order to evaluate the impact of development on the

intrinsic qualities of these sites. Local nature reserves comprising habitats of local significance can make a useful contribution both to nature conservation and to the opportunities for the public to see, learn about, and enjoy wildlife.

3.0 Protected Species in North Wales

- 3.1 Up to twelve bat species have been recorded in North Wales, most of which use built structures notably occupied residential properties for roosting. The most frequently encountered bat species is the Common Pipistrelle (*Pipistrellus pipistrellus*) and its abundant status in North Wales is reflected 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 professional judgement of an experienced ecologist. Where examples are used in the guidelines, they are descriptive rather than prescriptive.”

Survey Protocol

- 4.2 Relative to the above the survey methods and protocol adopted for this study were determined using the collective and long standing experience of Tyrer Ecological Consultants Ltd and knowledge of the specific nature of the site. 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 range of species known to an area geographically that can be anticipated as being present either at the building type, or in the locality, as well as how complex a building is relative to observations.
- 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 survey data and grant European Protected Species Mitigation licences (EPSML).
- 4.4 The timing of all surveys took place between August and September, at a time when bats are within their active season; a time when female colonies are dispersing from maternity roosts, bats are mating, and building up fatty stores when feeding ready for winter hibernation. Singular, or even small numbers of, bats can often be recorded at buildings, particularly colder structures; males of some species establish mating territories where they may fly or call specifically to attract females. Evidence/presence of bats is within a suitable survey window, as such, survey timing is not considered a constraint.
- 4.5 All surveys took place at a time the year when bats are in a highly social stage and bat activity is most apparent. Identification of bat roosts is best achieved by the undertaking of dusk and dawn surveys by persons who are familiar with how bats use buildings and in the use of bat detectors, and call analysis software.

- 4.6 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 site or in the locality and how complex a building is relative to observations. In this case the bat roost potential that exists at the Barn presents no problems for dusk observations; if a building is complex, or observations were restricted, or species that are difficult to detect at dusk are suspected then dawn surveys would be conducted. At Mulsford Farm the identified PRFs are clearly visible from ground level and to date there is no evidence to suggest the presence of such species.
- 4.7 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” to a roost from foraging grounds.
- 4.8 The number of surveys and surveyors was adequate relative to the roost potential that was identified on attendance of the site i.e., ‘Moderate’, and requiring four surveyors to accurately monitor potential roost features (PRF’s) on the Barn at any one time.
- 4.9 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.
- 4.11 The dusk surveys were supported by the deployment of an Anabat Express, which was deployed in the centre of the mezzanine upper floor, left in-situ for two continual weeks recording activity of bats by night. A pre-dusk inspection was also carried out prior to the first dusk survey by KW - Mrs. K. Wilding CEnv MIEMA ACIEEM, a Principal level Ecologist and Director of Tyrer Ecological Consultants Ltd who holds a Natural Resources Wales License = S086297/1. Has a large portfolio of successful granted mitigation licences in England and Wales.

Survey limitations

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

Dusk Survey Results

- 4.13 Two dusk emergence surveys were undertaken on the 26th August and 9th September 2021 by a combination of seven surveyors, with four deployed per survey, as per Tables below.
- 4.14 See associated imagery overleaf for visual aid in respect of survey results.

Barn at Mulsford Farm, via Mulsford Lane, Sarn, Malpas, SY14 7LP
Dusk Survey Results

Table 4.1 - Surveyor Credentials

Name	Experience	Details
Dusk survey 1 - 26/08/2021		
KW - Mrs. K. Wilding CEnv MIEMA ACIEEM	15 years	Principal level Ecologist and Director of Tyrer Ecological Consultants Ltd who holds a Natural Resources Wales License = S086297/1. Has a large portfolio of successful granted mitigation licences in England and Wales.
MP - Mr. M. Pritchard ACIEEM	5 years	Senior Ecologist who holds a range of protected species licences, with extensive training and experience. Bats: (2020-5039-CLS-CLS) (Class 1) and accredited agent on the licence of Mrs. K. Wilding.
MMu - Mr. M. Mulholland	21 years	A seasonal surveyor with experience of undertaking professional bat surveys over many years.
MMo - Mr. M. Moss	1 year	A seasonal surveyor with experience of undertaking professional bat surveys.

Name	Experience	Details
Dusk survey 2 - 09/09/2021		
HG - Mr. H. Green	30+ years	Highly experienced bat surveyor who has professional surveying experience spanning many years with Tyrer Ecological Consultants Ltd.
MMu - Mr. M. Mulholland	21 years	A seasonal ecological consultant with experience of undertaking professional bat surveys.
DN - Mr. D. Ney	4 years	Seasonal ecological consultant with experience of undertaking professional bat surveys.
ET - Ms. E. Thomas	1 year	A seasonal surveyor with experience of undertaking professional bat surveys.

Barn at Mulsford Farm, via Mulsford Lane, Sarn, Malpas, SY14 7LP
Dusk Survey Results

Table 4.2 – Survey date, time and weather conditions

Times of Survey	Date	Weather Conditions
Dusk survey 1955 - 2145	26/08/2021	Sunset: 2015: Dry, Clear, Calm, 5% cloud cover Start temp: 18 ° C End temp: 16 ° C
Dusk survey 1923 - 2120	09/09/2021	Sunset: 1943: Dry, Clear, Light breeze, 90% cloud cover Start temp: 18.5 ° C End temp: 16.5 ° C

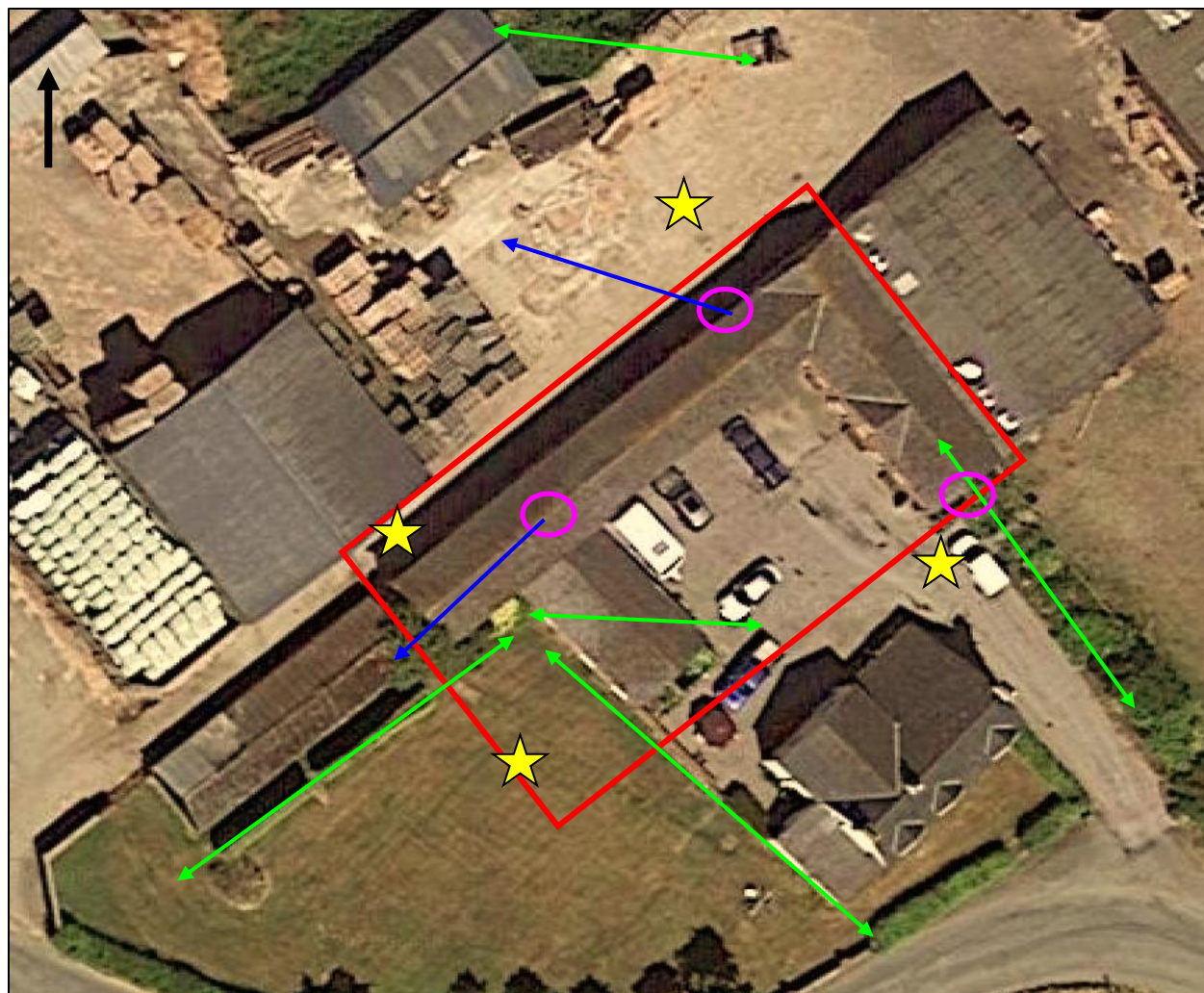
Table 4.3 – Raw data from the surveys

Dusk Survey	Time	Activity
26/08/2021 Dusk 1	1930 - 1950	Pre-dusk inspection: Prior to the start of this survey an updated internal investigation was carried out that identified x3 Brown long-eared (<i>Plecotus auritus</i>) to be roosting within the upper floor mezzanine; all three bats were huddled together at the ridge.
	1955 - 2145	Summary: Emergence of four Brown long-eared (<i>Plecotus auritus</i>) bats from the barn (the target building) and one Common Pipistrelle (<i>Pipistrellus pipistrellus</i>) emergence from a separate area of the barn (a non-target building on site). 2032 hrs: Emergence of one Common Pipistrelle bat at the gable elevation of a non-target building in the east of the site at end ridge. 2034 hrs: Emergence of two Brown long-eared bat via the central purpose-built open area facing north-west with access openings to the mezzanine. 20 36 hrs: Emergence of one Brown long-eared bat via the central purpose-built open area facing north-west with access openings to the mezzanine. 2038 hrs: Emergence of one Brown long-eared bat via a gap at the ridge where it has warped slightly, with commute to the nearby hedgerow headed west. 2042 - 2117: Foraging activity throughout this period by up to two Common Pipistrelle bats, with frequent forays over the barn and around it, feeding with occasional social calls. General activity comprised foraging by up to two Common Pipistrelle bats. No foraging on site by BLE bats.

Barn at Mulsford Farm, via Mulsford Lane, Sarn, Malpas, SY14 7LP
Dusk Survey Results

09/09/2021 Dusk 2	1923 - 2145	Summary: Emergence of four bats in total; three Brown long eared and one Soprano Pipistrelle. 1937 hrs: Common Pipistrelle observed commuting west in the west of the site. 1947 hrs: Emergence of one Soprano Pipistrelle bat from a ground floor opening 'stable' in the north-western aspect of the barn. 2001 - 2004 hrs: Emergence of three Brown long-eared bats via the central purpose-built open area facing north-west with access openings to the mezzanine. 2007 hrs: Up to two Pipistrelle bats observed entering and foraging inside the bar upper levels. 2010 - 2045 hrs: Foraging activity throughout this period by up to three Pipistrelle bats, with frequent forays inside, over the barn and around it, feeding with occasional social calls. General activity comprised foraging by one Soprano Pipistrelle and up to two Common Pipistrelle bats. No foraging on site by BLE bats.
Anabat Express Deployed	Times recording at night	Activity
26/08/2021 - 09/09/2021	2100 - 0700	The calls over this period determined regular presence of Brown long eared bats and Common Pipistrelle bats. Dusk observations proved roost by the former species, and internal foraging by the latter, small numbers of both.

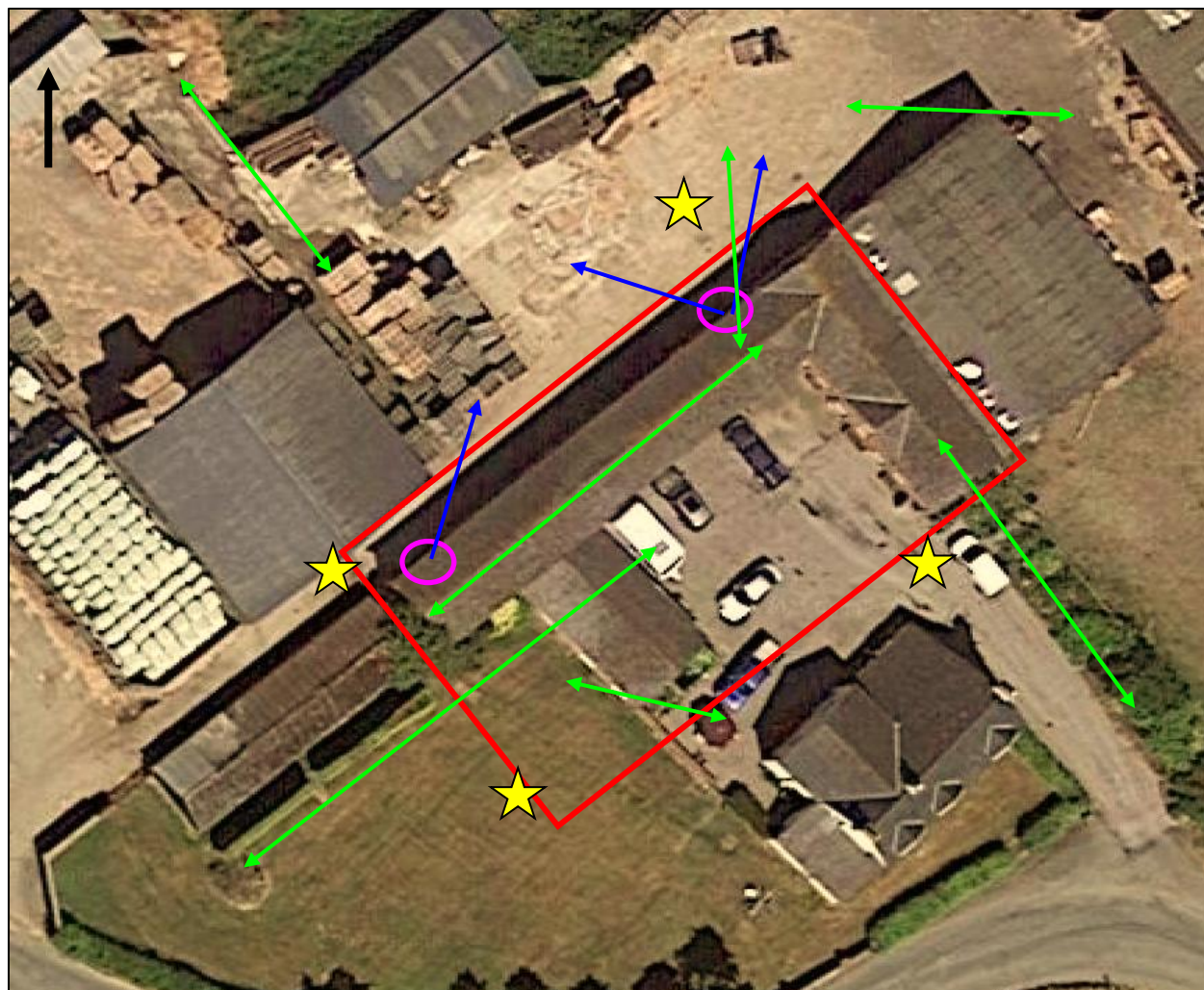
Barn at Mulsford Farm, via Mulsford Lane, Sarn, Malpas, SY14 7LP
Dusk Survey Results



Key			
	Survey boundary		Foraging activity
	Surveyor Positions		Directional compass
	Emergence location		Commuting activity

Dusk Survey 1 Results

Barn at Mulsford Farm, via Mulsford Lane, Sarn, Malpas, SY14 7LP
Dusk Survey Results



Key			
	Survey boundary		Foraging activity
	Surveyor Positions		Directional compass
	Emergence location		Commuting activity

Dusk Survey 2 Results



Plate 1 - Emergence area - The central purpose-built open area facing north-west with access openings to the mezzanine. During dusk surveys 1 and 2.



Plate 2 - Emergence area - Emergence of one Brown long-eared bat via a gap at the ridge where it has warped slightly, with commute to the nearby hedgerow headed west. During dusk survey 1.



Plate 3 - Emergence area - Emergence of one Soprano Pipistrelle bat from a ground floor opening 'stable' in the north-western aspect of the barn. During dusk survey 2.

5.0 Dusk Survey Conclusions & Recommendations

- 5.1 From the dusk survey results, it can be concluded whilst using best practice survey methodology, emergence of bats was observed at the Barn at Mulsford Farm, and two bat roosts have been identified attributed to Brown long-eared bats and Soprano Pipistrelle.
- 5.2 Roost 1 - a Brown long-eared roost that was observed to support max count of four bats, is the upper mezzanine floor of the barn, all compartments, with bats physically observed roosting at the ridge and emerging at dusk. The bats were seen to emerge via two areas, the central purpose-built open area facing north-west with access openings to the mezzanine and a gap at the ridge via dislodged ridge tile. See Plates 1-2.
- 5.3 Roost 2 - a Soprano Pipistrelle roost that was observed to support max count of one bat, is a crevice within a ground floor opening 'stable' in the north-western aspect of the barn. See Plate 3.
- 5.4 Common Pipistrelle bats were also recorded foraging on site, including entry into the barn for this use during the dusk surveys, though no roost behaviour was confirmed for this species at the barn subject to proposals. A single Common Pipistrelle was observed roosting in a non-target building at Mulsford Farm.
- 5.5 In light of the above results, as proposals are understood to involve conversion of the building for residential use, impacts 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 European Protected Species Mitigation Licence (EPSML) will be required to legally destroy the roosts 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 including getting planning consent.
- 5.6 For the purposes of the required EPSML the roosts can be categorised as follows in accordance with the Bat Conservation Trust - Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016) edition (see Figure 6.1):
- Brown long-eared x4 bats - a Day roost, two access points.
 - Soprano Pipistrelle x1 bat - a Day roost, one access point.

Day roost	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.
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Figure 6.1 - Extract from BCT Guidelines

- 5.7 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.
- 5.8 New installation of overly harsh artificial lighting as part of any development that exceeds current levels may have a negative impact upon bats in the landscape, particularly if increased light spillage occurs in areas of that are currently free from illumination. A bat-sensitive lighting plan is therefore recommended to avoid potential impacts to bats that may use the surrounding treelines. Several options to consider have been listed below, though the reader is referred to the Bat Conservation Lighting Guidelines for further information.

Type of lamp (light source): The impact on bats can be minimized by the use of low pressure sodium lamps or high pressure sodium instead of mercury or metal halide lamps where glass glazing is preferred due to its UV filtration characteristics.

Lighting should be directed to where it is needed and light spillage avoided. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only. Planting can also be used as a barrier or manmade features that are required within the build can be positioned so as to form a barrier.

Predicting where the light cone and light spill will occur: There are lighting design computer programs that are widely in use which produce an image of the site in question, showing how the area will be affected by light spill when all the factors of the lighting components listed above are taken into consideration. This should be a useful tool to inform the mitigation process.

Light levels: The light should be as low as guidelines permit. If lighting is not needed in any particular area, do not light. Numerous software programmes are currently available which can be used inform lighting plans, demonstrating how lighting decisions will illuminate a site.

Please refer to the 'Landscape and urban design for bats and biodiversity' (*Gunnell et. al.*, 2012, Bat Conservation Trust) for further information.

6.0 Indicative Mitigation

- 6.1 From the evidence gained during the surveys the use of the site is considered to be of 'Low' level significance relatable to Brown long-eared and Soprano Pipistrelle bats and their current conservation status (Reference: EPS mitigation licencing guidance in Wales); 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.
- 6.2 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.
- 6.3 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.

6.4 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 NRW 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 high.

6.5 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 (NRW).

Summary of Indicative Mitigation

6.6 Conversion of the Barn at Mulsford Farm for residential use is a key component of the applicant's plans for the site; all roosts are likely to be lost or damaged; however, it is acknowledged that the presence of roosting bats needs to be addressed from both a legal and conservation perspective.

6.7 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.

6.8 No habitat loss is anticipated as part of the proposals with local treelines retained. No temporary or permanent impacts are anticipated in relation to foraging or commuting habitat.

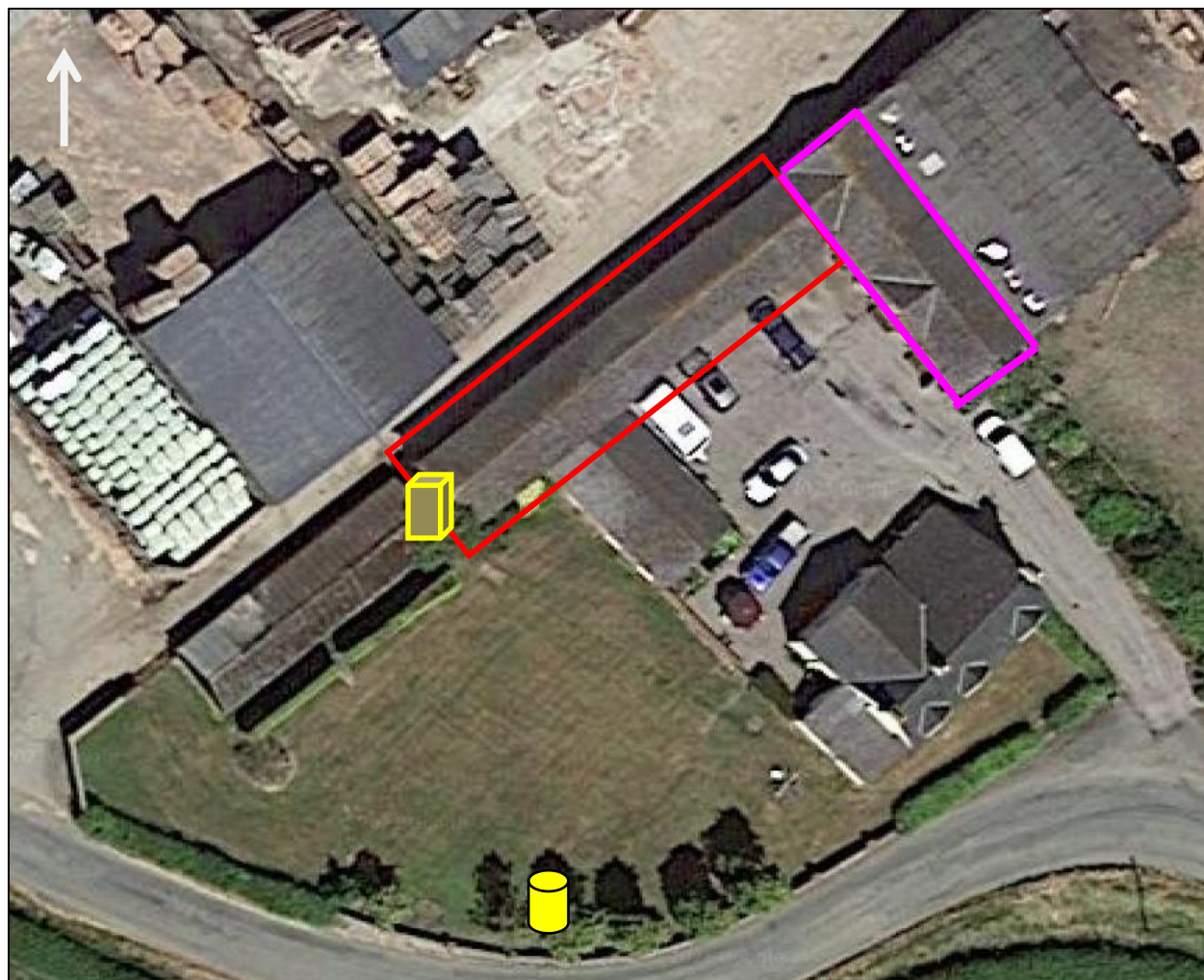
6.9 External lighting on site post-development is likely to be slightly greater than what currently exists; however, where new lighting is to be installed it will be directed away from any new bat roost access points, flight paths and foraging/commuting areas.

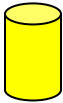
6.10 To ensure that bats are not left without a roost while works take place that could displace bats from their roost(s) at the building, one receptor bat roost is recommended to be installed on a suitable tree in the gardens. The bat box to be used should be a Schwegler 2F bat box (or equivalent tree box if this model is not available). Receptor roosts serve as a receiver area for if bats have to be captured and translocated to them by the licenced ecologist during the works schedule. Any receptor roost should be installed and be in place prior to any conversion works and be within a reasonable distance of the roost site. They can be retained or removed following the works.

6.11 To ensure that the "*favourable conservation of the species concerned*" can be maintained the following indicative mitigation procedures are proposed.

- Conversion of the adjacent barn loft space into a new dedicated bat roost, to mitigate for Roost 1 destruction. See
- External bat box fitted to the newly converted barn south-west facing gable elevation, to mitigate for Roost 2 destruction.

6.12 See Figure 6.1 for visual aid.



Key			
	Location of proposed receptor box as described		Proposed new external bat box
	Proposed works area		Proposed new dedicated bat loft



- use Schwegler 2F bat box (or suitable alternative if not available)

Figure 6.1 - Receptor roosts location proposed (adapted over Google imagery)

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

- 6.13 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 bats as far as is possible will be established by undertaking a thorough detailed investigation of all areas at which bats have been observed using the site, typically within the upper floor of the barn (Roost 1) and lower-level ground floor opening 'stable' in the north-western aspect of the barn (Roost 2). This work would involve potential disturbance providing a thorough inspection of these areas using torches and endoscopes where necessary and may involve a soft strip at the local areas of interest around slates/tiles, as necessary, involving the careful lifting, inspecting and removal of roof components.

The Ecologist will supervise the careful dismantling of these places of interest, where/if they are to be removed or cavities infilled. 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.

All dismantling/infilling of potential roost features will be undertaken during favourable weather conditions (above 9°C) during April to September, outside of the hibernation season of bats (broadly October - March).

Where crevices are found to be extensive in the brickwork, or it cannot be conclusively ascertained that bats are absent from a crevice/hole/deep crack etc, exclusion may be fitted for a period of 3 days and 3 nights - this is where material/device is placed over the entrance area allowing bats a means of escape whilst preventing them from re-accessing it. This method will only be adopted if necessary, and exclusion fitted cavities will only be filled in following this process.

No post-development monitoring is required for the roosts given they are 'Day roosts', as stated following current guidance (Bat Mitigation Guidelines) concerning Day 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.

Work to be undertaken by the Ecologist

- 6.14 **Capture/Exclusion:** Once an EPSML 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, 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.

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 as indicated in Figure 6.1. 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

- 6.15 **New roost provision:** To provide like-for-like roost conditions to effectively replicate the roosts being impacted at the site and to ensure that the “*favourable conservation of the species concerned*” can be maintained the following mitigation procedures are proposed.
- Conversion of the adjacent barn loft space into a new dedicated bat roost, to mitigate for Roost 1 destruction.
 - External bat box fitted to the newly converted barn south-west facing gable elevation, to mitigate for Roost 2 destruction.

For visual aid see Figure 6.1.

- 6.16 The newly created bat roost(s) would be intended to be permanent and dedicated for bats.
- 6.17 Management requirements for the roost(s) are considered to be absent, though it would be the Licensee responsibility to ensure all new roost access points and building condition remains in favourable working order post-development.
- 6.18 No post-development monitoring is typically required for the roosts given they are ‘Day roosts’, as stated following current guidance (Bat Mitigation Guidelines) and conservation status concerning Brown long-eared/Soprano Pipistrelle ‘Day roosts’/low significance roosts. However, post-development monitoring is being progressively introduced to all licensing schemes for statutory protected species to help ensure the favorable conservation status of the species concerned post-development by allowing mitigation to be adjusted based on further survey information.
- 6.19 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.

Dedicated loft space for Brown long-eared (Plecotus auritus) - design spec

- Breeding colonies of Brown long-eared bats show a preference for loft spaces that allow a high degree of space that allows free flight and places to hang and seek shelter by way of crevice situations within the loft; additionally, the thermal qualities of the roost need to be such that a relatively warm consistent temperature can be achieved.
- The new bat loft would be constructed and completed prior to the existing loft roost at Mulsford Farm being converted; during that time all dismantling of bat roost features at the barn, as specified earlier, will be completed to avoid disturbance to the roost during the hibernation season of bats (i.e. October to March). During this time any bat droppings present in the loft will be collected and placed into the new loft roost to encourage the bats to utilise this section.

- Indicative internal roost dimensions will be 18.25 x 5.40 x 60 metres (length x width x height), though not confirmed at this stage.
- Bat access to the loft will be permitted via a combination of opening(s), or discrete ingress opportunities/gaps/crevices, though not confirmed at this stage.
- The new loft roost will be dedicated for bat use and as such will not be used for any other purposes (i.e. storage), nor will it be accessed by person(s) who do not hold a current Natural Resources Wales bat class licence to disturb.
- For monitoring purposes a 500 x 500mm loft hatch will be installed into the loft floor or wall to allow access to only those who are identified as named licenced Ecologist or named agents on a subsequent EPSML. A notice will be fixed on to the loft hatch/wall that identifies the presence of a bat roost inside and that only bat licensed person(s) should enter. Future occupiers of the building (if different from the owner) are to be informed by the site agent/contractor that the loft should not to be entered, or used for any storage purposes.

External Bat box - design spec

THREE CREVICE BAT BOX



£66

Individually Handmade - Specifications are in CM and approximate.

External: 43 high x 21.5 wide x 13.5 deep.

Internal: 41 x 16.5 x 1.8 crevices @ 3.

Made with larger colonies of smaller crevice dwelling bat species in mind, such as pipistrelles. Approx. 7.75kg

- See <https://www.greenwoodsecohabitats.co.uk/shop>

7.0 References

- **CIEEM et al**, 2019. *Biodiversity Net Gain: Good practice principles for development*. Available from: www.cieem.net/data/files/Publications/Biodiversity_Net_Gain_Principles.pdf
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- **Mitchell-Jones, A.J. and McLeish, A.P.** (Eds) (2004). *Bat Workers' Manual*, Joint Nature Conservation Committee, Peterborough.

Appendix I: *Inspection & Assessment in relation to Bats & Breeding Birds'* (October 2021)