

Dusk and Dawn Survey Results

Springfield Farm
Marford
Wrexham
LL12 8TD

National Grid Ref: SJ36025640



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Document Title	Dusk and Dawn Survey Results
Issue	1.0
Prepared for	Blueprint Architectural Ltd
Prepared by	Tyrer Ecological Consultants Ltd

Survey Team	Mr. S. Irwin, Mr. M. Pritchard, Mr. J. Prescod, Mr. B. Richards		
Author	Mr. H. Mulligan		
Dusk and Dawn Surveys	Dusk 1: 09/05/2022	Dusk 2: 23/05/2022	Dawn: 10/06/2022
Reviewed by	Mr J. Pescod Qualifying CIEEM		
Review date	29/06/2022		
Approved by	Mrs. K. Wilding CEnv MIEMA ACIEEM		
Date of Issue	29/06/2022		

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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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Tyrer Ecological Consultants Ltd (June 2021)

1.0 Background and Introduction

- 1.1 As part of a proposed planning application concerning Springfield Farm in Marford, Wrexham, (see Figures 5.1-5.3 for building layout), Tyrer Ecological Consultants Ltd conducted a daytime assessment in relation to bats and breeding birds during May 2021. As part of this survey a Preliminary Roost Assessment (PRA) was carried out, which concluded the following:

Based upon the abundance of Potential Roost Features (PRFs) identified along with the confirmed evidence of bat use by Whiskered/Brandt's bats as covered through sections 6.0-7.0 of the report and supported by Appendix I, whilst following best practice guidance, the barn at Springfield Farm holds 'High' bat roost suitability in accordance with the Bat Conservation Trust - Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016) (see Figure 8.1).

- 1.2 Tyrer Ecological Consultants Ltd were therefore re-commissioned by Blueprint Ecological Ltd to undertake the bat surveys in 2022; three surveys were undertaken within the months of May and June 2022 within the active season of bats (May-August); the surveys comprised two dusk emergence surveys and one dawn re-entry survey 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)

- 1.3 Proposals are understood to entail the conversion of the existing barn building for residential use, by removing the existing flat roofs and replacing them with pitched roofs and vaulted ceilings.
- 1.4 The surveys aimed to identify the presence or reasonably conclude the absence of bats at the application site. 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 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 All British bats and their ****roosts**¹ 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 and Species (Amendment) (EU Exit) Regulations 2019 (SI 2019/579). 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 (Mainly spring/summer months)

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.

Policy

2.3 Paragraph 180 of the National Policy Planning Framework (as revised in July 2021) states:

180. When determining planning applications, local planning authorities should apply the following principles:

a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons⁶³ and a suitable compensation strategy exists; and,

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be

¹ ******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.

integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

- 2.4 This is supported by Policy EC6 of the Wrexham Unitary Development Plan, which states:

“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 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 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 was in May and June during the typical breeding season of bats (May-August) and within the typically recommended survey window for structures categorised as ‘High’.

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.

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 at the site i.e. 'High' and requiring three surveyors to adequately monitor potential roost features (PRF's) at the building at any one time.
- 4.4 Surveyors were strategically positioned so that all elevations that were identified as exhibiting bat roost potential, as described in the daytime report, could be observed without limitations. The surveyors were aided with electronic bat detectors that enable the locating and recording of the high frequency calls that are emitted by bats; i.e. Anabat 2, Echo Touch Meter. All echolocation calls were subsequently analysed using Analook computer software or equivalent professional analysis software to verify field observations.

Survey limitations

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

5.0 Dusk Survey Results

5.1 Two dusk emergence surveys were respectively undertaken on the 9th of May and the 23rd of May 2022 and one dawn emergence survey on the 10th of June by a combination of three of the four surveyors below, with up to three operating at any one survey, as per Table 5.1 below. See Table 5.2 - 5.3 for raw data. Figures 5.1-5.3 documents the results of the dusk and dawn surveys, whilst Figure 5.4 provides emergence location visual aids.

Table 5.1 - Surveyor Credentials

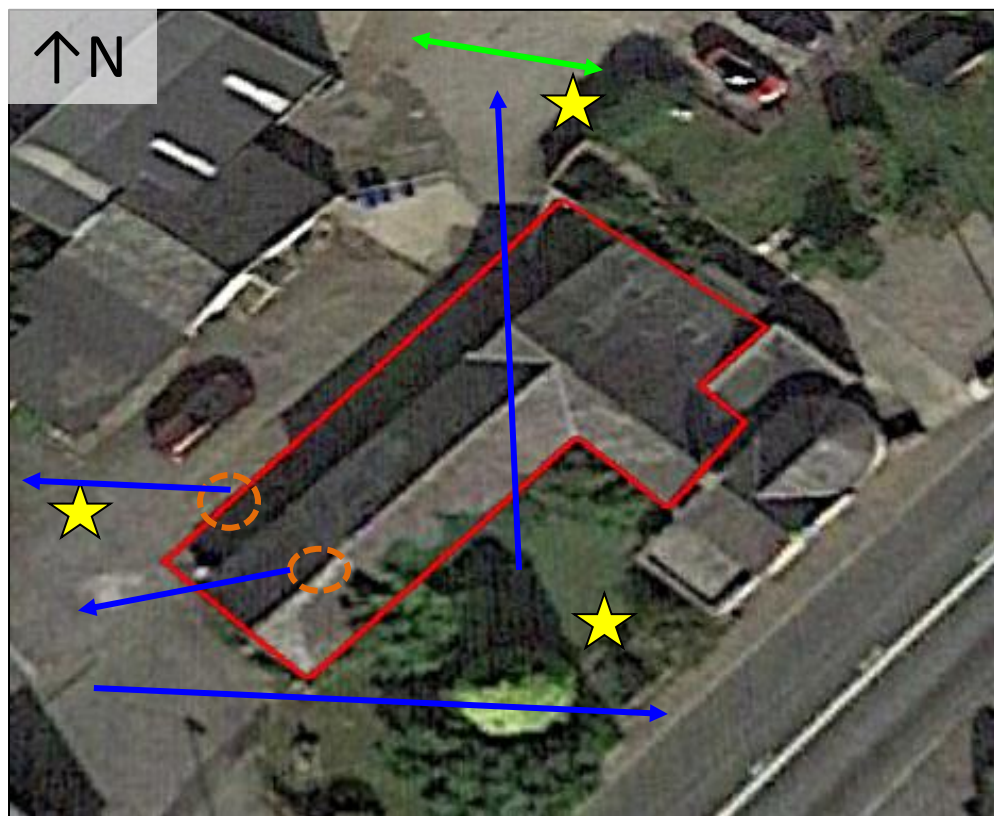
Name	Experience	Details
Mr. S. Irwin	30+ years	Highly experienced Bat Specialist with Natural Resources Wales bat licence (Licence no. 73156:OTH:CSAB:2016). Has provided a catalogue of bespoke mitigation schemes as part of successful granted mitigation licences in England and Wales.
Mr. M. Pritchard 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 (Class 2) Natural England bat licence of Mrs. K. Wilding (CLS-14227).
Mr. J. Pescod Qualifying CIEEM	5 years	Consultant Ecologist, with extensive training and experience. Accredited agent on the Class 2 Natural England bat license of Mrs K Wilding (CLS-14227)
Mr. B. Richards	1 year	Trainee Ecologist undergoing extensive training. MBiolSci in Biological Sciences (Zoology), QualCIEEM

Table 5.2 – Survey dates, times and weather conditions

Times of Survey	Date	Weather Conditions
Dusk survey 2033-2223	09/05/2022	Sunset: 2053: Dry, Moderate breeze, 90% cloud cover Start temp: 15 ° C End temp: 15 ° C
Dusk survey 2110-2300	23/05/2022	Sunset: 2130: Dry, clear, Light air, 60% cloud cover Start temp: 12 ° C End temp: 11 ° C
Dawn survey 0317-0447	10/06/2022	Sunrise: 0447: Dry, Light air, 5% cloud cover Start temp: 13 ° C End temp: 13 ° C

Table 5.3 – Raw data from the surveys

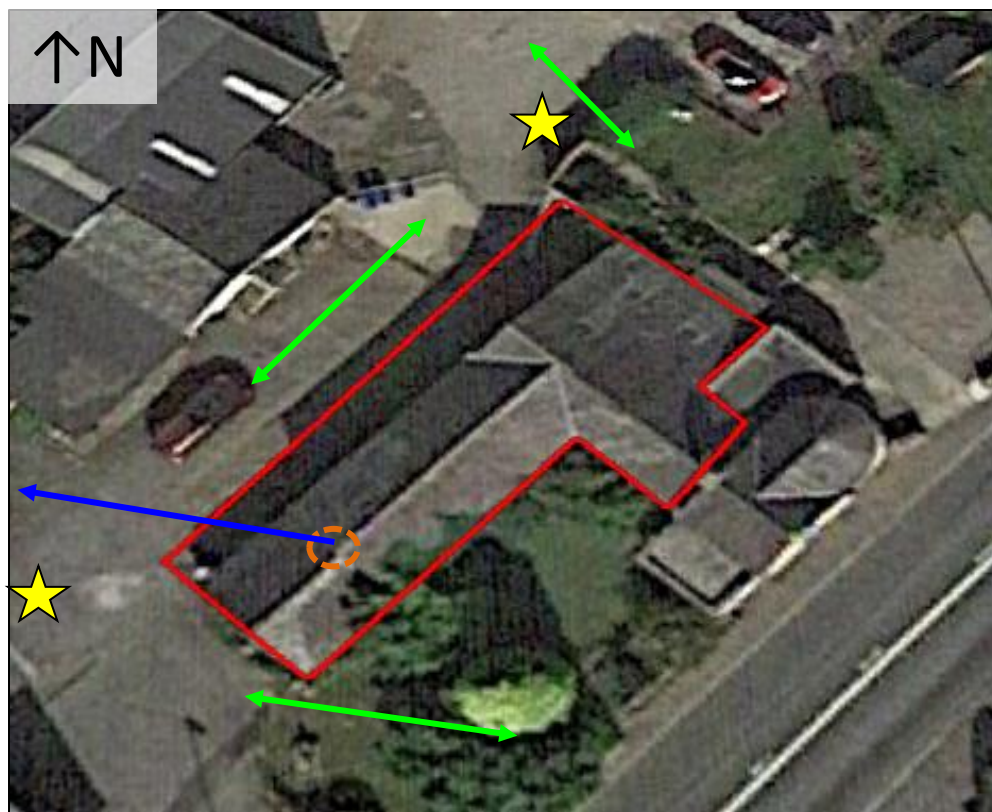
Dusk Survey	Time	Activity
09/05/2022 Dusk 1	2033-2223	Summary: Emergence of two Brown Long-eared bats from under a roof slate/ridge tile on the south-western elevation of the garage and from the garage door respectively. 2121 hrs: Soprano Pipistrelle (SP) commuting north to south over building 2123 hrs: SP foraging over courtyard north of building 2123 hrs: Noctule (Noc) commuting, heard but not seen 2124 hrs: Emergence of Brown Long-Eared (BLE) from under roof slate on south-western elevation of garage (E1), before commuting west 2128 hrs: Emergence of BLE from garage door (E2) commuting west 2132 hrs: BLE commuting, heard but not seen 2133-2151 hrs: Common Pipistrelle (CP) sporadic commuting west to east, south of building General activity comprised of foraging and commuting by one Soprano Pipistrelle, two Brown Long-eared bats and one Common Pipistrelle.
23/05/2022 Dusk 2	2110 - 2300	Summary: Emergence of one Brown Long-eared bat from under a roof slate/ridge tile on the south-western elevation of the garage 2135-2220 hrs: Several passes by Noc commuting over site, heard but not seen 2146-2211 hrs: Up to three CP foraging around site boundaries and passing through courtyard 2158 hrs: BLE emerged (E1) from under roof slate on south-western elevation of garage, before commuting west General activity comprised of foraging and commuting by up to three Common Pipistrelle, one Brown Long-eared and one Common Pipistrelle.
10/06/2022 Dawn	0317-0447	Summary: No emergence observed throughout the survey by any bat species 0356 hrs: CP heard but not seen 0408 hrs: Noc heard but not seen 0419 hrs: Noc heard but not seen Activity was limited to sporadic movement of one Common Pipistrelle and one noctule



Dusk Survey 1 – 09/05/2022

	Survey boundary		Foraging activity
	Surveyor Positions		Commuting activity
	Directional compass		Bat Emergence point

Figure 5.1 - Dusk Survey 1 Results with Key



Dusk Survey 2 – 23/05/2022

	Survey boundary		Foraging activity
	Surveyor Positions		Commuting activity
	Directional compass		Bat Emergence point

Figure 5.2 - Dusk Survey 2 Results with Key



Dawn Survey – 10/06/2022

	Survey boundary		Directional compass
	Surveyor Positions		

Figure 5.3 – Dawn Survey Results with Key



Figure 5.4 - Emergence points 1 and 2 on the south-western elevation of barn, under a roof slate and at the garage door respectively

6.0 Dusk Survey Conclusions & Recommendations

6.1 The survey results gathered by Tyrer Ecological Consultants Ltd conclude that the dwelling Springfield Farm is being used by up to two Brown Long-eared (*Plecotus auritus*) bats for roosting purposes. Based upon the evidence, the building is host to two 'Day roosts' for the named species in low numbers, with one Brown Long-eared emerging from beneath a roof slate on the south-western aspect of the garage roof and a second Brown long-eared emerging from the garage door.

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 are for the existing flat roofs of the barn to be replaced with pitched roofs and vaulted ceiling and the incorporation of the existing garage building into the structure.

- 6.4 Close study of the formal drawings provided by Blueprint Architectural Ltd to be submitted to the LPA as part of the planning application, and, from direct liaison with Blueprint Architectural Ltd about the nature, scale of operations and timings of the proposals to be carried out, strongly suggests that the bat roosts can be retained, not destroyed, damaged, or modified, which would effectively maintain the status-quo for bats at site level, and, maintain the favourable conservation status of bats long term.
- 6.5 Furthermore, if reasonable avoidance measures were applied that crucially included timing certain noise and vibration works to avoid the sensitive active season of bats (May-September), then no disturbance would take place to bat(s), as bats are likely to be absent from day roosts in the hibernation months of October-April.
- 6.6 Therefore, based on survey information, the experience of a Class 2 licenced Ecologist with 15 years of experience, and specialist knowledge of the species concerned, on balance the proposals are reasonably unlikely to result in any offence being committed. As such a European Protected Species Mitigation Licence (EPSML) is not required at this time.
- 6.7 If at any point proposals change to include works to additional areas of the property, that may affect bats, specifically any areas at/around the roof, section of loft or the apex of an acute triangle gable elevation to the north-east facing aspect, a Natural Resources Wales Mitigation licence will be required to legally continue with the work.
- 6.8 As a reasonable precaution following the surveys timings are recommended to avoid the active season of bats (May-September) in as much as possible, with works that are likely to generate the loudest noise carried out within the period of October 1st to April 30th.
- 6.9 It should be borne in mind that whilst the recommendations have been based on sound scientific evidence, Bats are a highly transient species and can often have multiple roosts in a locale, and can use buildings that offer potential roost features at any time of the year, therefore, it should be stated that if bats, or evidence of bats (see Figure 6.1) is discovered at any stage during the works to the other areas of Springfield Farm, then as a legal requirement the work at the site should immediately cease and a Bat licenced ecologist should be contacted for further advice.



Figure 6.1 - Indicative evidence of bats - Bat droppings (left) and pipistrelle bat (right)

7.0 References

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Consultants Ltd (June 2021)