

A Bat Survey Report
on behalf of

Mr. Bernard Llewellyn
for
Penddeugae Fawr Farm
Treharris
Merthyr Tydfil
CF46 6UE



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Project Overview

Client	Mr. Bernard Llewellyn
Site / Job	Penddeugae Fawr Farm
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Lead Surveyor(s)	Nic Aldridge

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2	Final	11.10.23	Nic Aldridge	Sam Haycock

Limitations

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The assessments made assume that the site(s) and facilities will continue to be used for their current purpose without significant change. The conclusions and recommendations contained in this Report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested. Information obtained from third parties has not been independently verified by Little Wing Ecology (CYF).

Executive Summary

Summary	Little Wing Ecology (CYF) was commissioned to undertake a Preliminary Roost Assessment, and Activity Survey, of a site known as, 'Penddeugae Fawr Farm, Treharris, Merthyr Tydfil, CF46 6UE.' The survey was undertaken to inform the client of any constraints, and associated planning requirements with regards to protected species, and to inform a planning application. For the purposes of this report, the structure will be referred to as, 'Building A.'
About the Site	Building A is a derelict and detached, 18C former farmhouse, surrounded by managed pasture and open countryside. The main building and adjoining (former) barn are roofless. There is a single-storey extension along the norther elevation and a porch on the southern elevation. The structure occupies an exclusively rural plot of approximately ≈10m x ≈20m and is traditionally built with stone with modern additions.
Proposals	Planning permission is sought for the demolition of Building A and construction of a rural enterprise unit.
Results	Building A was categorised as being of moderate risk, requiring a dusk survey for bats on two occasions. Two dusk emergence surveys returned a positive result for Building A supporting a small day roost for common pipistrelles and soprano pipistrelle with both roosts being located within a single-story extension on the northern elevation of Building A. The features identified within the PRA are considered to offer a moderate risk at providing the hibernating conditions that bats prefer. A large inglenook chimney is present, open at the top providing access to an internal cavity of unknown proportions. In addition, as pipistrelle species are known to hibernate in buildings, this will need to be taken into consideration.
Other Considerations	As Building A supports several features that could be exploited by nesting birds, e.g., jackdaws, a cautionary approach is recommended.
Recommendations	<u>Recommendation 1 (EPS Licence)</u> Building A supports a day roost for common pipistrelle and soprano pipistrelle species. Bats and their breeding sites and resting places are protected under the Conservation of Habitats and Species Regulations 2019. Where these species are present and a development proposal is likely to contravene the legal protection they are afforded, the development may only proceed under licence issued by NRW, having satisfied the three requirements set out in the legislation. <u>Recommendation 2 (Lighting During Development)</u> If any development is to be conducted between March and September (inclusive), efforts must be made to avoid any adverse impacts on the commuting and foraging of bats near the site. External lighting must be restricted during the development period to that which is necessary for safety and security. This must be kept to a minimum. <u>Recommendation 3 (Post Development Lighting Scheme)</u> To prevent any adverse impact upon the potential roosting, commuting and foraging habitats for bats adjacent to Building A (post development), specifically at the identified commuting corridors (east-west, north-south) the lighting plan for the site must be functional and directional only and kept to a minimum servicing the public areas of the proposed development (as required for safety and security). <u>Recommendation 4 (Hibernation and Pipistrelles)</u> Building A has been identified as providing moderate risk of supporting hibernating animals, specifically within a sealed inglenook chimney flue. In addition, as pipistrelle species are known to hibernate in buildings, a precautionary approach will be followed. Any works with regards to the striping of roofing materials or exposing the wall plate, particularly on the northern aspects of the structure, during the winter months (October-April – inclusive), to be supervised by a suitably qualified and experienced bat ecologist under the direction of a method statement. Also, any work impacting the chimneys. This method statement will include a comprehensive search for hibernating animals. If at any point during works a hibernating animal is encountered, it is essential that all work is to cease, and an application made for an EPS licence. <u>Recommendation 5 (Nesting Birds)</u> If any features associated with nesting birds are required to be altered during the bird breeding season, then a further inspection by a suitably qualified ecologist is required no more than 24 hours before this process commences. If an active nest is found by a site inspection, an exclusion zone around the nest will be necessary to preserve this feature until the chicks have fledged the nest. <u>Recommendation 6 (Post Development Enhancements)</u> Bats: To encourage bat roosting activity and increase roosting opportunities post-development, it is recommended that four new roosting opportunities are provided at the nearby mature trees. This to take the form of four F2 Schwegler Bat Box (or similar). These roosts to be located by a suitably qualified ecologist. These features will be fixed to the south-western elevation of mature trees (on-site) (See enhancement features - appendix).

Birds: Two Schwegler 1SP Nest Boxes (or similar) to be fitted at a height of >3m on the eastern elevation of mature trees in close proximity to Building A (Appendix).

This Executive Summary is intended to provide an overview of the assessment of the proposed development site based on information received by Little Wing Ecology (CYF) at the time of production. This Executive Summary should be read in conjunction with the full report.



CONTENTS

	Page
Section One: Introduction	1
Section Two: The Survey Method	3
Section Three: Results	4
Section Four: Conclusions	7
Section Five: Recommendations & Enhancements	8
Section Six: Additional Information	11
References and Bibliography	12

List of Figures

Figure 1	Site Location	1
Figure 2	A Site Plan	2
Figure 3	Infrared Monitoring (Image Quality)	6

List of Tables

Table 3.1	Preliminary Roost Assessment	4
Table 3.2	Field Survey & Weather Conditions	6
Table 3.2	Summary of Evidence	7

Appendices

- A. Site Photographs
- B. Bats and the Law: Legislation in Wales
- C. Meet our Survey Team
- D. Biodiversity Enhancement Features
- E. Activity survey – Recordings (Raw Data)

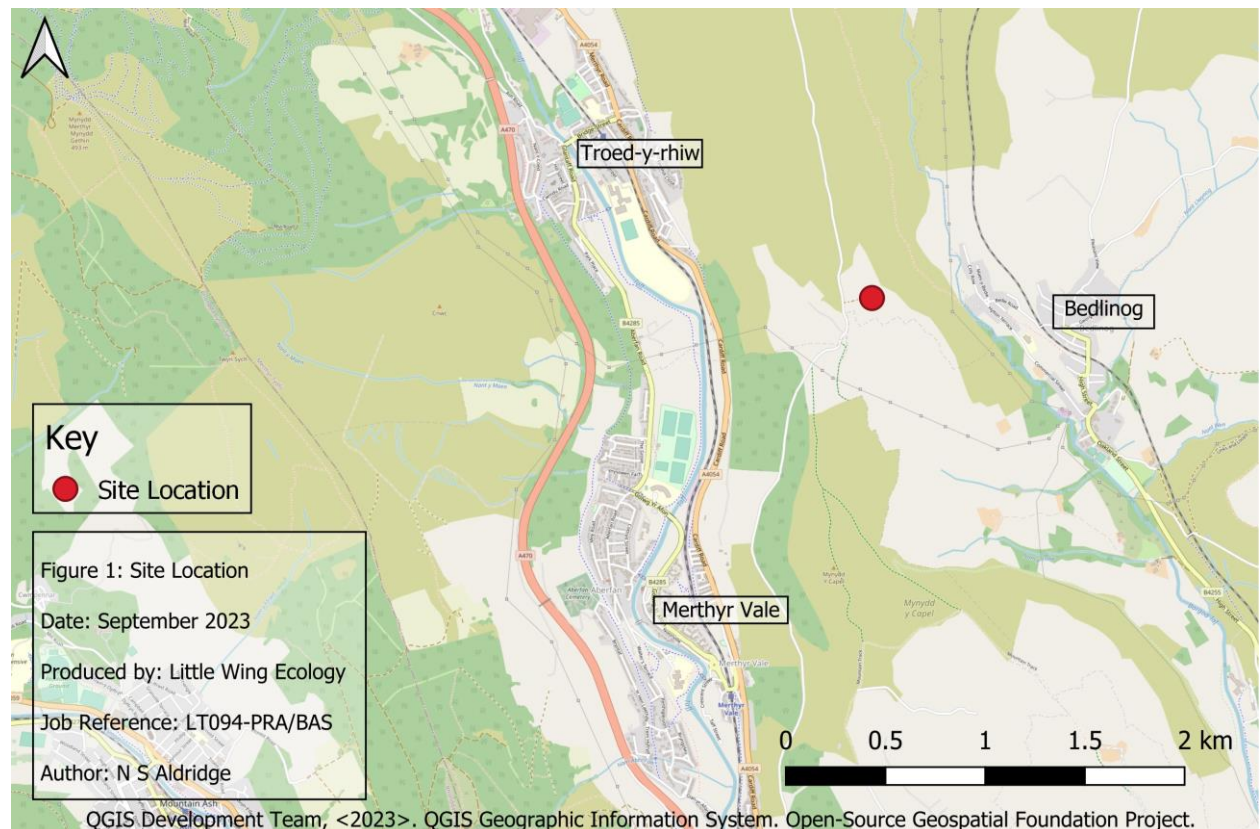
SECTION ONE: INTRODUCTION

1.1 Background

- 1.1.1 Little Wing Ecology (CYF) was commissioned to undertake a Preliminary Roost Assessment, and Activity Survey, of a site known as, 'Penddeugae Fawr Farm, Treharris, Merthyr Tydfil, CF46 6UE.' The survey was undertaken to inform the client of any constraints, and associated planning requirements with regards to protected species, and to inform a planning application. For the purposes of this report, the structure will be referred to as, 'Building A.' The property is located at grid reference SO 08409 01504.
- 1.1.2 This report contains the results from a preliminary roost inspection and two dusk activity surveys, conducted during the summer months. Surveys were carried out with the purpose of identifying the presence/likely absence of bat roosts at Building A. Following survey, an assessment of the likely impact that the proposed works will have on bat interest at the site was carried out. This report has been prepared with recommendations for enhancement features to improve opportunities for local species post-development.

1.2 Proposed Works

- 1.2.1 Planning permission is sought for the demolition of Building A and construction of a rural enterprise unit.



1.3 Site Description

- 1.3.1 Building A is a derelict and detached, 18C former farmhouse, surrounded by managed pasture and open countryside. The main building and adjoining (former) barn are roofless. There is a single-storey extension along the norther elevation and a porch on the southern elevation. The structure occupies an exclusively rural plot of approximately $\approx 10\text{m} \times \approx 20\text{m}$ and is traditionally built with stone with modern additions.
- 1.3.2 Building A is accessed via an undesignated single-track road to a minor service (Parish Road) at $\approx 150\text{m}$ from the structure. Parish Road provides access to a main service road, Cardiff Road (A4045), 3.5km to the south.

Habitat in the immediate vicinity of the structure is exclusively rural, comprising managed pasture and open countryside with an upland characteristic. Building A occupies an upland plot, near the ridge between the Tâf and Bargoed valleys. This is a dark site with no artificial street lighting. There is a small collection of agricultural buildings directly south-east of Building A. The settlement of Bedlinog is located ≈550m to the east, and Troed-y-rhiw ≈1.2km to the north-west.



1.4 Policy and Legislation

- 1.4.1 In Wales, all bat species and their roosts are legally protected, by both domestic and international legislation. This means you may be committing a criminal offence if you:
- Deliberately take, injure, or kill a wild bat.
 - Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats.
 - Damage or destroy a place used by bats for breeding or resting (roosts) (even if bats are not occupying the roost at the time).
 - Possess, advertise, sell, exchange a bat of a species found in the wild in the EU (dead or alive) or any part of a bat.
 - Intentionally or recklessly obstruct access to a bat roost.
- 1.4.2 The framework for this protection is provided within three pieces of legislation from the Government of Wales and the UK Government.
- 1.4.3 These are:
- The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019
 - The Environment (Wales) Act 2016.
 - The Wildlife and Countryside Act (1981) – as amended.
- 1.4.4 Additional information on the legal scope of these acts can be found in the Appendix and a link to the full documentation can be found in, 'References and Bibliography.'

1.5 Survey Aims & Objectives

- 1.5.1 Considering this legal framework and local planning requirements, the objectives of this survey were to:
- Determine the presence/likely absence of bat roost(s) at Building A.
 - Determine the species of bat present.
 - Determine the type of roost present (maternity, day roost etc).
 - Identify any bat foraging or commuting behaviour in relation to the location.
 - Consider if there will be impacts on bats from the proposed works.
 - Consider if nesting birds are present which might be affected by the development proposals.
 - Gather sufficient information to be able to make appropriate recommendations, inform mitigation and licencing.

SECTION TWO: THE SURVEY METHOD

2.1 Desktop Survey (Bats)

- 2.1.1 Available records for bats (2km) were collated from the from the local biological records centre (SEWBrEC - LERC Reference: 0234-489).

2.2 Desktop Survey (Habitat)

- 2.2.1 A review of aerial photography was undertaken to assess the provision of suitable foraging and commuting habitat within proximity to Building A. This information was used in combination with a review of statutory designated sites, via the MAGIC website, including Special Areas of Conservation (SAC) and Sites of Special Scientific Interest (SSSI) to help in confirming the presence of bat species locally.
- 2.2.2 Bats are considered cryptic species and therefore it can be difficult to confirm whether they are present or not. Although the provision of local biological records would provide a range of information, such records can only be relied upon as relative where they are reasonably recent and when supplied by an experienced bat surveyor. It was therefore considered necessary to undertake a detailed survey regardless of the data search results, as this is most likely to be beyond the acceptability of current data as defined in BS 42020:2013 Biodiversity: Code of practice for planning and development and will not be as effective as spending time examining and or monitoring the buildings for the presence of bats.

2.3 Preliminary Roost Assessment

- 2.3.1 A potential nest and roost assessment survey was carried out on the interior and exterior of Building A by a suitably experienced ecologist and Natural Resources Wales (NRW) licenced bat worker, on the 28th August 2023. The external fabric of the structure was methodically inspected using close-focusing binoculars and a high-powered torch for potential access points such as gaps in the fabric of the building, beneath lifted roof materials or other gaps in the roof. Loose flashing, smudge marks and droppings on walls directly below eaves and gables etc were also searched for. A description of the building, including construction material and current condition was recorded. Internally, the building was searched using a high-powered torch to identify possible links to exterior roost entrances and clear signs of presence via urine staining, feeding remains, odour, piles of droppings, live bats, and bat carcasses. The space was also examined in the dark to identify areas where the presence of light would identify potential entry points for birds and bats. The aim of this survey was to determine the actual or potential presence of bats and the need for further survey and/or mitigation. During the field survey, an assessment of the habitats on-site and beyond the site boundary was undertaken. The aim of this was to identify potential commuting and foraging corridors, and suitable foraging sites. This enabled the suitability of the location for bats to be determined.
- 2.3.2 Nesting birds were also considered at the time of the survey, with the surveyor looking for signs of bird activity, nests, nest building, feeding at nest sites, and evidence of collections of bird droppings, feathers, or any other indications of use by birds.

2.5 Additional Ecological Considerations

- 2.5.1 Whilst a full ecological appraisal was not undertaken at the site, a note was made of any additional ecological considerations identified during the survey. For ease of reference these have been included within this report (Section 3).

2.6 Limitations of the Survey Method

- 2.6.1 A record was made of any constraints that limited the results of this survey report (Section 3).

2.7 Activity Surveys

- 2.7.1 Following guidelines set out in, 'Bat Conservation Trusts Good Practice Guidelines (Collins, J. (Ed.) (2016 & 2023 - Transition),' Building A will be categorised for the level of risk of supporting bats and recommendations made as to the requirement (if any) for dusk activity surveys to determine the presence/likely absence of roosting bats, species identification, population size, roost type, and the requirement for any associated mitigation. If required, dusk survey(s) for bats will be conducted no less than 14 days apart. During any subsequent activity surveys, sufficient surveyors will be required to adequately cover all features identified during the PRA. Nocturnal bat surveys can be undertaken May–mid September, inclusive. Taking a precautionary approach, and dependent on the outcome of these surveys, additional survey work may be required, but only if higher than expected activity is recorded. Details of our surveyors and their experience is recorded in the Appendix.

2.8 Equipment (Activity Surveys)

- 2.8.1 The equipment used for dusk activity surveys provides high quality recordings of bat calls which are analysed using BatSound and AnalookW software. Recordings are annotated by the surveyors to provide contextual information on bat behaviour and flight patterns. At Little Wing Ecology (CYF) we use Pettersson D240x time expansion bat detector and Tascam DR-05X Portable Digital Recorder, Peersonic RPA3B full spectrum recorders and Anabat SD2 Frequency Division detectors. As a night vision aid (NVA) we use a MELCAM Video Camera Camcorder 1080P IR Night Vision Digital Camera. Audio for this is provided by an Anabat SD1. In addition, we use Audiomoth – a full-spectrum acoustic logger, based on the Gecko processor range from Silicon Labs.

SECTION THREE: RESULTS

3.1 Desktop Survey Results

- 3.1.1 The survey location was examined by consulting Magic Map. No part of the site contains, or is within, any statutory sites of nature conservation interest, such as a Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC), National Nature Reserves (NNRs) or Local Nature Reserves (LNRs). There are no statutory sites on or adjacent to Building A.
- 3.1.2 The nearest SSSIs are, 'Cwm Glo a Glyndyrys,' which is located ≈4.5km north-west, and, 'Cefn y Brithdir,' at 5km east of Building A. Also on interest is, 'Aberbargoed Grasslands / Glaswelltir Aberbargoed (SSSI, NNR, SAC),' which is located ≈7.8km east of Building A.

3.2 Preliminary Roost Assessment (PRA)

PRA	Evidence
Building A: A derelict former farmhouse (18C). The main structure has no roof and, taking into account the state of remaining materials, this has been the case for some time. To the interior of the main structure bare stone walls are exposed, the remains of joists are present and many joist pockets are open to the elements. The wall plate has deteriorated and is crumbling. A first storey fireplace opening is exposed at the eastern elevation, providing access to the chimney flue. An inglenook fireplace is	No evidence of bats identified. No evidence of nesting birds identified.

blocked up and half buried at the eastern elevation. This appears open at the top providing access to a large internal cavity. Debris covers the ground floor to a depth of ≈1m. Evidence of stone roofing tiles are present in this debris. A porch is present centrally on the southern elevation. This is a modern addition with plastered walls and a small roof void, above a plasterboard ceiling. A hole in the ceiling shows that a bitumen-based roof membrane is present and in good condition. The porch window is boarded up making the interior a relatively dark space. Along the northern elevation is a single storey extension with a shallow pitched asbestos roof. This structure is boarded-up to the exterior. The interior of this structure was inaccessible. The roof is damaged with several holes and gaps (missing sections of roof) providing access to the interior. There is a modern chimney at this structure which is open at the top. Bargeboards are missing and purlins exposed to the exterior. Large gaps are present between the chimney and the main structure. The remains of an open-sided stable/hayloft are present on the western elevation. Cavities are presented at all elevations of Building A.	
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Table 3.1: PRA

3.3 Results of Preliminary Roost Assessment

- 3.3.1 Following guidelines set out on Bat Conservation Trusts Good Practice Guidelines (Collins, J. (Ed.) (2016 & 2023 - Transition), Building A has been categorised as being of moderate risk, requiring a dusk survey for bats on two occasions. These surveys must be conducted no less than 14 days apart. These surveys represented the minimum recommended number of visits to give confidence in a negative result for structures.

3.4 Local Records for Bats

- 3.4.1 The local biodiversity records provided by SEWBReC returned 62 species records, including 42 records for bat species and 20 records for bird species locally. Some of these were too old to be considered viable. The closest (<1km) and most significant records are summarised here. There are no records for bats within 500m. There are three records within 1km, these are for a pipistrelle species (845m), a common pipistrelle (932m, and a noctule (953m). There are an additional four species recorded between 1-2km including soprano pipistrelle, myotis species, brown long-eared bat and Natterer's bat.
- 3.4.2 There are no roost records within 1km of Building A. The closest roost records are for common pipistrelle at 1,160m, and an unidentified bat at 1,363m (only droppings recorded).

3.5 Habitat and Satellite Imagery - Suitability for Commuting and Foraging Bats

- 3.5.1 The impact of artificial lighting on the interior of the site is negligible. The plot represents a dark site, surrounded by open countryside, with no impact from artificial street lighting. To the east and west of the site, drystone walls and the occasional mature trees provide a degree of connectivity, while to the south, a number of small managed fields (pasture) lined inconsistent with mature broadleaved trees provide connectivity, specifically to Cwm Bargoed. An (intermittent) broadleaved woodland is present <175m to the east. Building A has good connectivity to the wider landscape.

3.6 Suitability for Hibernating Bats

- 3.6.1 The features identified within the PRA are considered to offer a moderate risk at providing the hibernating conditions that bats prefer. A large inglenook chimney is present, open at the top providing access to a internal cavity of unknown proportions. In additional, pipistrelle species are known to hibernate in

buildings, this will need to be taken into consideration, particularly in the winter shaded areas on the north and west sides of structures.

3.7 Activity Survey Recordings

- 3.7.1 On 28.08.23, a total of 22 recordings were made of two species; common pipistrelle (12) and soprano pipistrelle (8), in addition to two bats (unidentified). During the survey two common pipistrelles and two soprano pipistrelles were recorded emerging from the single-story extension along the northern elevation. These emergences were from gaps in the damaged asbestos roof. Bat activity on-site was mixed with animals commuting east to west, north to south, and foraging of adjacent pasture.
- 3.7.2 On 13.09.23, a total of 37 recordings were made of three species; common pipistrelle (18) and soprano pipistrelle (2), and noctule (5), in addition to 12 bats (unidentified). Of these unidentified bats, some were silent when observed and some recorded by observation alone. During the survey one bat was recorded emerging from the single-story extension along the northern elevation. This was silent during the emergence but was recorded exiting the same part of the roof used by a common pipistrelle during the first visit. Bat activity on-site was once again mixed but with most animals recorded commuting and only limited foraging. Commuting was predominantly east to west and north to south.

3.8 Infrared Video Survey

- 3.8.1 In addition to active monitoring using bat detectors, an infrared camera was deployed on the dusk activity surveys.



Figure 3: Infrared Monitoring (Image quality)

3.9 Field Survey Details & Weather Conditions

Date	Timings (BST)		Notes, Sunset Times	Weather Conditions		
	Start	End		Variable	Start	End
28.08.23	19.55	21.25	Dusk Activity Survey Sunset 20.10	Temp (°C)	16.1	13.0
				Cloud Cover (Oktas)	8	8
				Precipitation	Nil	Nil
				Beaufort Scale	F1	F2
13.09.23	19.20	20.45	Dusk Activity Survey Sunset 19.34	Temp (°C)	16.5	11.7
				Cloud Cover (Oktas)	3	3
				Precipitation	Nil	Nil
				Beaufort Scale	F0	F0

Table 3.2: Field Survey Details and Weather Conditions

3.10 Additional Ecological Constraints (Results)

- 3.10.1 The interior and exterior of Building A was accessible, with the exception of a single-storey derelict extension along the northern elevation. The structure was in a dangerous state of repair resulting in some

parts of the interior being too dangerous to comprehensively search.

3.10.2 No additional limitations were recorded during the field survey.

3.11 A Summary of Evidence

Survey Location	Species (Recorded)	Notes
Building A	Common pipistrelle	Droppings: No droppings identified.
	Soprano pipistrelle	Feeding debris: None identified.
	Noctule	Live sightings: During two dusk observations, three species were identified foraging/commuting on or near the site: common pipistrelle, soprano pipistrelle and noctule bat. Roost Type: During two dusk observations, two common pipistrelles and two soprano pipistrelles were recorded emerging from a single-storey extension along the northern elevation. Roost entrances were at damaged sections of an asbestos roof.

Table 3.3: Summary of Evidence

3.12 Impact Assessment

3.12.1 When the nature conservation significance of the site is considered against recognised criteria (Bat Mitigation Guidelines 2004 and Good Practice Guide: NRW Approach to Bats and Planning October 2015 and IUCN Red List of Threatened Species), the nature conservation status of the structure is assessed to be low, due to the presence of a day roost for a small number of a common species – common pipistrelle and soprano pipistrelle. If unmitigated, the scale of this development is considered to affect the local bat population, with a low risk of detrimental impacts to the conservation status at a local level. Three species were recorded commuting/foraging near Building A: common pipistrelle, soprano pipistrelle and noctule bat (Least Concern – IUCN Red List). A cautionary approach will be recommended to mitigate impacts on commuting and foraging bats: at all elevations.

SECTION FOUR: CONCLUSIONS

- 4.1 There are no statutory sites, such as SSSIs, SAC or NNR, on or adjacent to the proposed development site. There is currently little impact from artificial lighting on the site and building A has good connectivity to the wider landscape east to west and north to south. Provision must89-p be made in the lighting plans to avoid any potential impacts on this dark site.
- 4.2 Following guidelines set out on Bat Conservation Trusts Good Practice Guidelines (Collins, J. (Ed.) (2016-2023-Transition), Building A was categorised as being of moderate risk, requiring a dusk survey for bats on two occasions. Two dusk emergence surveys returned a positive result for Building A supporting a small day roost for common pipistrelles and soprano pipistrelle with both roosts being located within a single-story extension on the northern elevation of Building A. All bat species and their places of rest are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), and the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. The legal protection for bats concerns impacts from disturbance, loss of roost locations, modifications to roosts and loss of access or obstruction to roost locations. As the proposal would result in the disturbance/destruction of the identified roost, a European Protected Species (EPS) licence will be required from Natural Resources Wales (NRW) before any work commences.

- 4.1 The features identified within the PRA are considered to offer a moderate risk at providing the hibernating conditions that bats prefer. A large inglenook chimney is present, open at the top providing access to an internal cavity of unknown proportions. In addition, as pipistrelle species are known to hibernate in buildings, this will need to be taken into consideration, particularly in the winter shaded areas on the north and west sides of structures. Provision for this hibernation potential to be included in a method statement for any works undertaken on these features during the winter months (October-April).
- 4.1 As Building A supports several features that could be exploited by nesting birds, e.g., jackdaws, a cautionary approach is recommended.

SECTION FIVE: RECOMMENDATIONS & ENHANCEMENTS

Based on the results of this report, it is recommended that the following conditions be included in the plans. These recommendations include enhancement features. These enhancement features are designed to support 'net gain' for biodiversity onsite, or off-site (if the proposed development cannot accommodate such requirements *in-situ*).

Recommendation 1 (EPS Licence)

A. Applying for an EPS Licence

Building A supports a day roost for common pipistrelle and soprano pipistrelle species. Bats and their breeding sites and resting places are protected under the Conservation of Habitats and Species Regulations 2019. Where these species are present and a development proposal is likely to contravene the legal protection they are afforded, the development may only proceed under licence issued by NRW, having satisfied the three requirements set out in the legislation. A licence may only be authorised if:

- a. The development works to be authorised are for the purpose of preserving public health or safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment;
- b. There is no satisfactory alternative; and,
- c. The action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in its natural range.

Subject to planning consent being granted by the local planning authority, an EPS licence will be required to facilitate the proposals. The EPS licence is issued under Regulation 55 of the Habitats Regulations by NRW. Once the planning application has been approved the applicant must appoint a suitably qualified ecologist, known as the Ecological Clerk of Works (ECOW), to prepare;

1. European Protected Species Licence - Application form
2. European Protected Species Licence - Method Statement
3. The application form and method statement are prepared to detail how the requirements of the Habitats Regulations will be met for managing the effects on bats during the renovation works. In addition, the applicant is also required to collate and pass on to the appointed ecologist the following documents:
 - A copy of the 'Local Planning Authority Decision Notice.'
 - A copy of either the Delegated Decision report or committee meeting minutes (whichever format was used to approve the planning application).
 - Local Planning Authority Consultation Form.
 - Architects' drawings containing the location of the bat mitigation measures (detailed below), any proposed external lighting and any proposed changes to the landscaping around the development.

Once the planning application has been approved it is advised that the ecologist is engaged as early as possible as there can be a waiting time of approximately 40 working days / 8 calendar weeks for NRW to process the application, in addition to the time it takes to prepare and collate the documents. NRW now charge for issuing an EPS licence, but the exact charge is assessed on a case-by-case basis. It is not possible at this time to indicate what any likely charge might be.

B. Further Survey

No further survey is recommended at this time. If works do not start within one year (i.e., September 2024) further survey may be necessary to qualify the roost status and recommended adaptations (if required) to the mitigation measure detailed below.

C. Timing of Works

The day roosts identified at Building A are considered to be of low conservation significance (Mitchell-Jones 2004) with breeding bats, not a concern. Thus, works will not be restricted by time of year. The main concern is absolute harm to the bats themselves, which will be mitigated by the presence of a licenced Ecological Clerk of Works (ECoW) and the provision of temporary roosting opportunities.

D. Order of Works

Appropriate works for the development at Building A will include:

1. The provision of a temporary roosting location prior to works commencing.
2. The capture/exclusion of bats at the start of works.
3. The modification/replacement of existing roosts (Building A - during the winter months November-March).
4. The creation of a new roost.
5. Provision of appropriate external lighting.

E. Capture/Exclusion of Bats & the Start of Works

An Ecological Clerk of Works (ECoW) will need to be appointed to advise the best location for a new bat roost, the temporary bat boxes and features of mitigation.

The ECoW will also provide a toolbox talk to the building contractor on the specific requirements relating to bats and will remain on-site during specific works such as the erection of scaffolding, if applicable, and stripping of bat roost features. They will also be on-site when the roosts are to be modified, creation of new roosting features and prior to the strike of scaffolding, to inspect the placement and suitability of new roosting features.

Once scaffolding has been erected or a cherry-picker/telehandler is on-site, the ECoW will attend the site to apply exclusion devices (if required) to the known roosting locations, in the form of a one-way gate using acetate sheets, bubble wrap or other effective material. Works may commence the day after, following a toolbox talk given to all site workers by the ECoW about bats and bat behaviour. Due to the complexity of the site and numerous roosting locations available the ECoW will need to be present during removal of materials from significant areas of the building including roofing materials at the wall plate and the stripping of or removal of flashing.

At the same time that the exclusion devices are affixed, one, 'Rocket Bat Box' (The Nestbox Company – or similar) is to be installed at or near the southern corner of the plot. Boxes to remain unaffected by artificial light. The ECoW will advise on the suitable locations for this feature box.

Works may start with the stripping of the barge boards and roofing materials (northern extension), to expose the roosts and to discourage further roosting activity by bats. The activity must be undertaken with a sympathetic approach where all roof coverings, barge boards will be removed carefully, by hand, i.e., lifting vertically to prevent scraping.

When all roosting features and the roof has been removed, works may proceed without supervision by the ECoW. In the unlikely event that a bat is discovered during a time when the ECoW is not present on-site, all works must cease and the ECoW contacted for advice before proceeding.

F. The Modification / Replacement of Existing Roosts

As a day roost for common pipistrelle and soprano pipistrelle will be impacted and/or destroyed during works, a total of two new roosting opportunities must be installed on the proposed new structure (or provision made nearby). If the replacement roof is incorporated within a new or existing roof structure, access to be provided behind a replacement timber bargeboard at the southern elevation. If provision is made on or within an replacement structure, access to roosting location are to be consummate with the existing access points. These access points to provide access to an area between F1 bitumen felt (roof membrane) and a slate-type roofing material.

New or replacement timbers for the roof frame and fascia boards must be checked to ensure there is no use of chemicals harmful to bats. Ideally, new facias must not be made of uPVC.

The location of access points must reflect the existing roost location as far as possible.

G. The Creation of a New Roost

Pipistrelle Roost: To encourage bat roosting activity and increase roosting opportunities on-site post-development, it is recommended that new roosting opportunities are provided as part of the development. Two additional roosting locations will be positioned to allow bats to moderate temperature variations in the summer months. These features will be provided in-situ, if the replacement structure is suitable, or off-site (in close proximity)(See enhancement features below).

Recommendation 2 (Lighting During Development)

As a European Protected Species, disturbance of bats during foraging/commuting, even if accidental, is to be avoided. It is therefore recommended that the use of artificial lighting during the development of the site is avoided. External lighting must be restricted during the development period to that which is necessary for safety and security. This must be kept to a minimum.

If any development is to be conducted between March and September (inclusive), efforts must be made to avoid any adverse impacts on the commuting and foraging of bats near the site. External lighting must be restricted during the development period to that which is necessary for safety and security. This must be kept to a minimum.

Recommendation 3 (Post Development Lighting Scheme)

To prevent any adverse impact upon the potential roosting, commuting and foraging habitats for bats adjacent to Building A (post development), specifically at the identified commuting corridors (east-west, north-south) the lighting plan for the site must be functional and directional only and kept to a minimum servicing the public areas of the proposed development (as required for safety and security). It must be achieved using baffles and screens, if necessary, to ensure no light spill on any retained or planted vegetated (including off-site vegetation - e.g., there is a potential to impact animals using the nearby habitat features).

- A sensitive lighting scheme is recommended and must be created. The sensitive lighting scheme must follow advice details in 'Bats and Artificial Lighting in the UK: Technical Guidance Note 08/23' (2023) and comprise of:
- Light fixtures, filaments, light spill and artificial light must be directed away from bat roost entrances, both existing and those to be created as part of the mitigation.
- Luminaries are to be LED only, due to their sharp cut-off, lower intensity, good colour rendition and dimming capability Luminaires must have a warm white spectrum (ideally <2700 Kelvins), reducing the blue light component and increasing the red-light component.
- Luminaries must feature peak wavelengths high the 550nm to avoid the component of light most disturbing to bats.
- Heights of fixtures must be carefully considered to minimise light spill. Only luminaries with an upward light ratio of 0% and with good optical control must be used.
- Luminaries must always be mounted on the horizontal, i.e., no upward tilt.
- Any external security lighting must be set on motion sensors and short (15 second) timers.
- As a last resort, accessories such as baffles, hoods or louvres must also be used, and directed away from any

natural features and must not encroach outside the Site boundaries, particularly the surrounding trees, hedgerows, and other vegetation in the landscape.

Recommendation 4 (Hibernation and Pipistrelles)

Building A has been identified as providing moderate risk of supporting hibernating animals, specifically within a sealed inglenook chimney flue. In addition, as pipistrelle species are known to hibernate in buildings, a precautionary approach will be followed. Any works with regards to the stripping of roofing materials or exposing the wall plate, particularly on the northern aspects of the structure, during the winter months (October-April – inclusive), to be supervised by a suitably qualified and experienced bat ecologist under the direction of a method statement. Also, any work impacting the chimneys. This method statement will include a comprehensive search for hibernating animals. If at any point during works a hibernating animal is encountered, it is essential that all work is to cease, and an application made for an EPS licence.

Recommendation 5 (Nesting Birds)

All nesting birds, their chicks' eggs and active nests are protected under the Wildlife and Countryside Act 1981 (as amended). If a nest is discovered during works and is active, it must be left undisturbed until all the chicks have fledged. If any features associated with nesting birds are required to be altered during the bird breeding season, then a further inspection by a suitably qualified ecologist is required no more than 24 hours before this process commences. If an active nest is found by a site inspection, an exclusion zone around the nest will be necessary to preserve this feature until the chicks have fledged the nest.

These measures will allow the development to conform to current protective legislation as laid out in the Wildlife and Countryside Act 1981 (plus amendments).

Recommendation 6 (Post Development Enhancements)

Under the Environment (Wales) Act 2016, public authorities (including local councils and the National Parks), '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.' This replaces the section 40 duty in the Natural Environment and Rural Communities Act 2006 (NERC Act 2006), in relation to Wales, which states that; 'All public authorities have a statutory duty to conserve biodiversity in all of their functions.'

Local authorities are legally required to make efforts to protect and enhance wildlife and its habitat and this is executed, in part, through the requirement of an ecological assessment for planned development sites and therefore, we recommend the following principles of design must be followed:

Bats: To encourage bat roosting activity and increase roosting opportunities post-development, it is recommended that four new roosting opportunities are provided at the nearby mature trees. This to take the form of four F2 Schwegler Bat Box (or similar). These roosts to be located by a suitably qualified ecologist. These features will be fixed to the south-western elevation of mature trees (on-site) (See enhancement features - appendix).

Birds: Two Schwegler 1SP Nest Boxes (or similar) to be fitted at a height of >3m on the eastern elevation of mature trees in close proximity to Building A (Appendix).

SECTION SIX: ADDITIONAL INFORMATION

6.1 ENCOUNTERING A PROTECTED SPECIES DURING WORKS

- 6.1.1 If at any point during works a protected species is encountered on-site, it is essential that all work is to cease and that a suitably experienced ecologist is contacted for advice.

6.2 EXPIRATION OF THIS REPORT

- 6.2.1 This report is valid for one year. In the event that works do not start within one year (i.e., September 2024) further survey and assessment will be necessary to qualify the results of this report and its recommendations.

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A. Site Photographs

Building A





B. Bats and The Law: Legislation in Wales

Policy	Description
The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019	Bats are specifically protected by (The Habitat Regulations). The Habitat Regulations are the way in which EU legislation is transposed into UK law. All species protected via this legislation are defined as 'European Protected Species.' The Habitat Regulations make it an offence to deliberately capture, kill, disturb, or trade in European Protected Species (i.e., those listed on Schedule 2), of which all UK bats are included. However, these actions can be made lawful through the granting of a license by Natural Resources Wales (NRW). Licenses may be granted for a number of purposes but only after the LPA and NRW is satisfied that there are no satisfactory alternatives and that such actions will have no detrimental effect on the wild populations of bats.
The Environment (Wales) Act 2016	Section 7 of the Environment (Wales) Act 2016 requires all statutory authorities including Local Planning Authorities (LPA) to have due regard for living organisms and types of habitats that are of key significance to sustain and improve biodiversity in relation to Wales. Furthermore, the LPA have a duty under the Act to take all reasonable steps to maintain and enhance the living organisms and types of habitats included on any list published under Section 7 and to encourage others to take such steps.
Wildlife and Countryside Act 1981 (as amended)	The Wildlife and Countryside Act 1981 (as amended) (The WCA 1981) is the principal legislation by which most species are protected in Wales. Bats are protected under Schedule 5 of the WCA 1981, which makes it an offence to damage or destroy a bat roost; intentionally or recklessly disturb a bat or a roost, or intentionally or recklessly obstruct access to a roost. The interpretation of a bat roost is "any structure or place which any wild [bat]...uses for shelter or protection". Because bats tend to reuse the same roosts, the legal opinion is that the roost is protected whether or not the bats are present at the time. In relation to birds, the WCA 1981 makes it an offence to intentionally kill, injure or take any wild bird; take, damage, or destroy the nest of any wild bird while that nest is in use or being built. Schedule 1 of the WCA Act 1981 includes bird species for which addition the additional offence of disturbing these species at their nests or their dependent young.

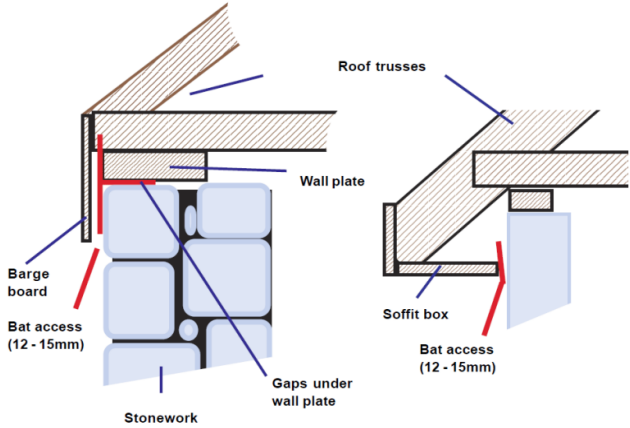
C. Meet our Survey Team

Nic Aldridge (NA) is an ecologist with Little Wing Ecology and the author of this report. He is a licensed bat worker with over 20 years' experience in education and conservation and over five years' experience surveying built-structures, open habitats, and woodlands for bats. Following a degree in Botany and Zoology, Nic completed an MSc in Wildlife Management, Conservation and Control, at the University of Reading. He has practical experience in field-based research with a focus on invertebrate and vegetation diversity and producing phase 1 habitat surveys and habitat management plans. He has carried out the ringing of Daubenton's bats as part of a multi-year project on the species and has undertaken monitoring work on several important lesser horseshoe bat roosts. He has attended courses with the Bat Conservation Trust to improve his knowledge and skills and has led voluntary projects to develop habitats and collect species data. Nic founded Little Wing Ecology in 2021 as a social enterprise, to use the skills and expertise of an ecological consultancy to work with the local community, support local conservation projects and provide training and education for the next generation of ecologists and conservationists.
Elizabeth Winstanley (LW) is a Nature Recovery Officer with the large Conservation Organisation and a wildlife surveyor with Little Wing Ecology. She has over seven years' experience working in practical conservation. Following a degree in Outdoor Education, Liz volunteered with a Wildlife Trust before taking on her current responsibilities. She has held her current position since 2015. During this time, Liz has undertaken numerous surveys and monitoring projects, including work on butterfly transects, phase 1 habitat surveys, reptile and amphibian surveys, upland monitoring, BTO bird box round, dormouse training and recording, bumblebee conservation – bee walks and many more. Currently Liz is responsible for the management of seven Nature Reserves including four SSSI 's. Liz has also attended several training sessions to develop her knowledge, understanding and practical skills in bat monitoring and bat ecology.
Tracey Cotterell (TC) is a Learning Coach with Blaenau Gwent Learning Zone (Coleg Gwent) and a wildlife surveyor with Little Wing Ecology. Tracey has a lifelong love of nature and enjoys spending her spare time volunteering with organisations such as The Welsh Wildlife Trusts, Blaenavon Heritage and Coleg Gwent Equine department. She enjoys being outdoors, whether in a working capacity or for personal interest such as running, riding, or surfing. She has volunteered throughout her life in roles as varied as an NHS First Responder, to working for the Wildlife Trust. During this time, she has gained skills in volunteering with environmental conservation matters, and through being a signaller in a search and rescue team. Tracey enjoys the responsibility of conserving the surrounding environment, learning, and helping to regulate human activities to minimise direct and indirect negative impacts on both flora and fauna. Tracey has also attended several training sessions to develop her knowledge, understanding and practical skills in bat monitoring and bat ecology.
Yvette Amos (YA) is a civil servant with Companies House and a wildlife surveyor with Little Wing Ecology. She has a lifelong love of nature and enjoys spending her spare time and vacations centred around nature and wildlife focused destinations. Yvette enjoys being outdoors, where she expresses her love of photography along with her interest in the natural world. She is experienced in data collection at a high level, having formerly worked for Cardiff University, School of Social Sciences and Computer Science. Yvette has attended several training sessions to develop her knowledge, understanding and practical skills in bat monitoring and bat ecology and is dedicated to gaining experience in nature conservation, wildlife management and ecology.
Richard Farr (RF) is a Grounds Maintenance Operative with the Monmouthshire County Council and a wildlife surveyor with Little Wing Ecology. He has previously worked as a trainee for the Gwent wildlife Trust and currently in his second year of a bachelor's degree in ecology. Richard has a life-long love of nature during his time with the Gwent Wildlife Trust, he has gained a wide set of practical skills and experiences which have developed his knowledge and understanding of ecology and conservation at a range of the Trust's Local Nature Reserves. Richard is studying ecology and conservation science at UWE (University of West England) and is learning a wide range of skills including; field skills, habitat identification, species identification/classification, various ways in which data is collected/interpreted and the use of R Studio regarding wildlife.
Libby Cotterell (LC) is a full-time student and a wildlife surveyor with Little Wing Ecology. She has a lifelong love of nature and the outdoors and enjoys learning new skills and engaging in practical work, in order to have a positive impact on local conservation issues. Libby has attended several training sessions with Little Wing Ecology to develop her knowledge, understanding and practical skills in bat monitoring and bat ecology.
Elise Winstanley (ELW) is a full-time student and a wildlife surveyor with Little Wing Ecology. She runs a college newspaper and is committed to community engagement. Elise is currently studying law, psychology and criminology at A Levels, and has a keen interest in nature and habitat preservation. Libby has attended several training sessions with Little Wing Ecology to develop her knowledge, understanding and practical skills in bat monitoring and bat ecology.
George Harley (GH) is a full-time student and a wildlife surveyor with Little Wing Ecology. He has a love of the outdoors and enjoys learning new skills and engaging in practical work. George has attended several training sessions with Little Wing Ecology to develop his knowledge, understanding and practical skills in bat monitoring and bat ecology.

Reviewer(s)

Phil Morgan (PM) has over 40 years' experience of undertaking building, tree and cave surveys for all bat species (S091084/1; expiry April 2024). In addition, he has undertaken foraging and flight line surveys using heterodyne and other echo-location equipment, and in 1991 made a significant contribution to a Bristol University run project, which established the methodology used in the National Bat Monitoring Programme. Phil has also undertaken numerous radio tracking exercises on both lesser horseshoe and Daubenton's bats. He holds Natural Resources Wales licence for other protected species including dormice, otter, and great crested newt. Phil was the previously the Conservation Officer with Dŵr Cymru Welsh Water, with an all-Wales remit, before leaving to start the Just Mammals Consultancy, where he was Principal Ecologist for 21 years. Phil is a Chartered Environmentalist, with the Society for the Environment (CEnv), and a full Member of the Chartered Institute for Ecology and Environmental Management (MCIEEM).
Sam Haycock (SH) is a founding director of Little Wing Ecology and a commercial assurance executive with a national company. Sam has over 20 years' experience in the education sector and four years' experience managing two rural enterprise companies, of which she was a director for three years. She brings a broad range of interdisciplinary skills to her role at Little Wing Ecology where she has responsibility for editing, reviewing, data management and finances. In 2021, Sam became a founding director of Little Wing Ecology, as a social enterprise, that aims to use the skills and expertise of an ecological consultancy, to work with the local community, support local conservation projects and provide training and education for the next generation of ecologists and conservationists.

D. Biodiversity Enhancement Features

Enhancement / Supporting Features	Information
 Diagram illustrating bat access points in a building structure. The diagram shows a cross-section of a roof and wall. Key features labeled include: Roof trusses, Wall plate, Barge board, Bat access (12 - 15mm), Gaps under wall plate, Soffit box, and Stonework. Red arrows indicate the locations of bat access points.	<u>Replacement Roosting opportunities</u> Gaps behind soffit, fascia, or barge boards. Access points should measure 15mm x 200mm (approximately). This gap must be against the wall. Gaps should not be placed directly above windows or doors. The apex and corners are suitable locations.
	<u>F2 Schwegler Bat Box</u> NHBS Accessed 29/03/2023. Available at: www.nhbs.com N.B. this is given as an example only. Many other suitable products are available.
	<u>B1 Schwegler Nest Box</u> NHBS Accessed 12/10/2022. Available at: www.nhbs.com N.B. this is given as an example only. Many other suitable products are available.

E. Activity Survey – Recordings (Raw data)

DATE	Time (start)	Time (end)	SPECIES (COMMON)	No	Surveyor's Position	OBSERVER'S NAME	COMMENT	CLASS OF SITE
28.08.23	20.35	20.35	Bat	1	North	Yvette Amos	Emergence	Day roost
28.08.23	20.35	20.35	Soprano pipistrelle	2	South	Nic Aldridge	Emergence	Day roost
28.08.23	20.35	20.35	Soprano pipistrelle	1	North	Yvette Amos	Emergence	Day roost
28.08.23	20.40	20.42	Common pipistrelle	2	South	Nic Aldridge	Emergence	Day roost
28.08.23	20.41	21.09	Common pipistrelle	5	North	Yvette Amos	Heard-not-seen	
28.08.23	20.42	20.42	Bat	1	North	Yvette Amos	Commuting	Commuting
28.08.23	20.47	20.47	Soprano pipistrelle	1	South	Nic Aldridge	Commuting	Commuting
28.08.23	20.48	20.54	Common pipistrelle	2	South	Nic Aldridge	Foraging	Foraging
28.08.23	20.5	20.5	Soprano pipistrelle	1	South	Nic Aldridge	Heard-not-seen	
28.08.23	20.53	21.03	Common pipistrelle	2	North	Yvette Amos	Commuting	Commuting
28.08.23	20.58	21.04	Soprano pipistrelle	2	North	Yvette Amos	Foraging	Foraging
28.08.23	20.58	20.58	Soprano pipistrelle	1	North	Yvette Amos	Heard-not-seen	
28.08.23	21.04	21.04	Common pipistrelle	1	South	Nic Aldridge	Heard-not-seen	
13.09.23	19.41	20.13	Bat	4	East	Elise Winstanley	Heard-not-seen	
13.09.23	19.52	19.52	Noctule	1	East	Elise Winstanley	Commuting	Commuting
13.09.23	19.53	19.53	Noctule	1	Inside Building A	Nic Aldridge	Commuting	Commuting
13.09.23	19.54	19.54	Noctule	1	West	Elizabeth Winstanley	Commuting	Commuting
13.09.23	19.55	19.55	Noctule	1	South	Richard Farr	Commuting	Commuting
13.09.23	20.01	20.01	Bat	1	Inside Building A	Nic Aldridge	Commuting	Commuting
13.09.23	20.02	20.02	Bat	1	West	Elizabeth Winstanley	Emergence	Day roost
13.09.23	20.09	20.12	Common pipistrelle	3	East	Elise Winstanley	Commuting	Commuting
13.09.23	20.09	20.09	Common pipistrelle	1	West	Elizabeth Winstanley	Commuting	Commuting
13.09.23	20.10	20.15	Common pipistrelle	4	South	Nic Aldridge	Foraging	Foraging
13.09.23	20.10	20.27	Common pipistrelle	7	West	Elizabeth Winstanley	Foraging	Foraging
13.09.23	20.12	20.12	Bat	1	South	Richard Farr	Commuting	Commuting
13.09.23	20.13	20.13	Bat	2	East	Elise Winstanley	Foraging	Foraging
13.09.23	20.15	20.15	Soprano pipistrelle	1	West	Elizabeth Winstanley	Foraging	Foraging
13.09.23	20.16	20.22	Bat	2	South	Richard Farr	Foraging	Foraging
13.09.23	20.32	20.32	Bat	1	South	Richard Farr	Heard-not-seen	
13.09.23	20.39	20.42	Common pipistrelle	3	West	Elizabeth Winstanley	Heard-not-seen	
13.09.23	20.40	20.40	Soprano pipistrelle	1	West	Elizabeth Winstanley	Heard-not-seen	
13.09.23	20.42	20.42	Noctule	1	West	Elizabeth Winstanley	Heard-not-seen	



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About Us

Little Wing Ecology is a not-for-profit ecological consultancy based in the South Wales Valleys. Specializing in bat surveys for housing developments, but providing a wide range of ecological services, it provides appropriate expertise on behalf of a range of clients.

We are a small ecological consultancy dedicated to providing an easy-to-use and jargon-free service. We produce the following products:

- Preliminary Ecological Appraisal
- Preliminary Roost Assessment
- Bat Surveys
- Mitigation Planning
- European Protected Species License Applications
- On-site Services to Support Planning Applications and Development

As a Consultancy, we use our experience, expertise, and love of wildlife to provide an easy to access and pragmatic service that upholds the highest standards of conservation.

As a Not-for-Profit Social Enterprise, we reinvest our profits. We work with valleys communities, conservation groups, local authorities, and other groups to support these three key areas:

A. Helping Nature

Developing and supporting habitat gain in the valleys through:

- Habitat improvement.
- Developing the built environment for the benefit of wildlife.
- Long-term monitoring projects for wildlife populations in the valleys.

B. Working with People

- Providing employment, training and voluntary opportunities for the local community and young people to help them build their skills, develop a stronger relationship with nature and build confidence in themselves.

C. Supporting Communities

- Reinvesting in nature and people, locally.
- Supporting education within communities to promote a positive relationship between people and wildlife.
- Providing pro-bono surveys for worthwhile causes.

Adroddiad Arolwg gan



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