

A Bat Survey Report

on behalf of

Mr. Ross Perriman
for
Standard Upholstery
Pontmorlais
Merthyr Tydfil
CF47 8UT



August 2023

Produced by: Little Wing Ecology CYF (A Not-for-profit Company Limited by Guarantee)
Company no: 13743223
Address: 24 Alma Street, Brynmawr, Blaenau Gwent, NP23 4DY
Email: nic@littlewingecology.cymru
Telephone: 07985 395251

Version: 01



Project Overview

Client	Mr. Ross Perriman
Site / Job	Standard Upholstery, Pontmorlais, Merthyr Tydfil, CF47 8UT
Report Type	Preliminary Roost Assessment and Bat Activity Survey
Report Reference	LT074-BAS
Grid Refence	SO 05007 06543
Survey Date	August 2023
Lead Surveyor(s)	Nic Aldridge

Versioning and Quality Assurance

Version	Status	Date	Author(s)	Reviewed by
1	Draft	14.08.2023	Nic Aldridge	Phil Morgan

Limitations

Little Wing Ecology (CYF) has prepared this Report for the sole use of the above-named Client or his Agents in accordance with our terms of business, under which our services were performed. No other warranty, expressed or implied, is made as to the professional advice included in this Report or any other services provided by us. This Report may not be relied upon by any other party without the prior and express written agreement of Little Wing Ecology (CYF).

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, 'Standard Upholstery, Pontmorlais, Merthyr Tydfil, CF47 8UT.' 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 structures will be referred to as, 'Building A – B.'
About the Site	Building A is a Victorian Warehouse, previously utilised as an upholstery factory. The structure occupies an urban plot of approximately $\approx 12\text{m} \times \approx 24\text{m}$ and the structure is a traditionally built three-storey stone building with a cement render to the front (north-east) elevation. Materials include a breathable roofing membrane, timber bargeboards, pressed steel guttering and lead flashing. Building A is located to the rear of properties which line the near-by service roads of Pontmorlais West and High Street, and so artificial lighting is limited. Habitat in the immediate vicinity of the structure is mixed, comprising other buildings, and made surfaces, such as roads and pavements. The structure is located directly adjacent to Nant Morlais (Morlais Brook) which bisects Merthyr Tydfil town centre before joining the Tâf Fawr ($\approx 450\text{m}$ south-west). Building A is accessed via a small single-track lane from a main service road (Pontmorlais West -A4102), $\approx 300\text{m}$ north of Merthyr Tydfil Town Centre and $\approx 1\text{km}$ east of the A470. The settlement of Merthyr Tydfil extends continuously $>1\text{km}$ around Building A.
Proposed Development	Planning permission is sought for the conversion of a Victorian warehouse into a residential unit, and the demolition/removal of a storeroom.
Results	A Preliminary Roost Assessment recorded evidence of bats within the interior of Buildings A. Droppings were scattered and lightly distributed. Building A has several potential roosting locations that could be used by bats due to their size shape, shelter, protection, conditions and surrounding habitat, but is unlikely to support a roost of a high conservation significance due to recent alterations. Locations of note include behind the barge board on all elevations, internally between the floor joists and the exterior wall (particularly along the eastern elevation), within cavities, above the secure store room, behind timber cladding and along the ridge board. The recent alteration to the interior of Building A and the presence of a breathable membrane to the roof has reduced the potential of this structure in supporting roost of high conservation significance. Taking a cautionary approach, the resultant categorisation based on best practice guidance was for Buildings A being a high-risk structure requiring a minimum of three presence/probable absence surveys during the summer months (May-September), to establish bat interest. In addition, three internal 14-day static surveys would collect additional evidence that would help identify the likely presence/absence of roosting bats, roost type and population size. (Collins, J. [Ed.] (2016). A cautionary approach was taken to Building B which in conjunction with building A was subject to three dusk surveys in addition to a 14-day static survey. Three dusk emergence surveys and three internal 14-day static survey returned a positive result for bats using Building A as a roost. X2 Soprano pipistrelles were recorded emerging from the northern gable during the third visit (two different locations). X2 Common pipistrelles recorded emerging from the western elevation during the first visit only. Recordings included common pipistrelle and soprano pipistrelle. These roosts have been classified as occasional days roost for these species. Three dusk emergence surveys and three internal 14-day static survey returned a negative result for bats using Building B as a roost. Bats are considered likely absent from this structure. Evidence collected during a 14-day static survey of Building A and B support the use of building A as a location for incidental foraging by common pipistrelles and soprano pipistrelles and use as an occasion roost (soprano pipistrelles - as supported by dusk emergence survey). No evidence of roosting was recorded at Building B. Extensive foraging was recorded along the southern and western elevations of Buildings A & B. Most records for foraging were either along the adjacent river or around mature trees on the western elevation. A cautionary approach is recommended when addressing lesser horseshoe which are recorded

	roosting locally. No evidence of the buildings being used by lesser horseshoe bats was recorded during 14-day internal surveys and no lesser horseshoe bats were recorded during dusk activity surveys. However, evidence of potential feeding debris was recorded during the PRA. Taking a cautionary approach, it will be recommended that as an enhancement, a small night roost be constructed near the southern elevation (adjacent to the stream). This enhancement would help protect the local lesser horseshoe population from future development in the area.
Other Ecological Considerations	Five bat roosts are recorded within 85m of Building A. A day roost for common pipistrelle, brown long-eared and lesser horseshoe bats are located within 46m, a second day roost for common pipistrelle at 85 m and a night roost for brown long-eared at 85m. Several scattered and fragmented broadleaved woodlands are located within the settlement of Merthyr Tydfil. The most significant of which in relation to Building A are the adjacent woodland that follows the Nant Morlais south-west where this joins the Afon Tâf (≈430m distant). The Afon Tâf forms a significant feature in the landscape providing connectivity north and south. In addition, a larger broadleaved woodland is located ≈180m east of the Building A. Collectively these features provide significant roosting and foraging opportunities for bats. Two jackdaws were recorded at the entrance to the chimney actively building a nest. Evidence of inactive jackdaw nest was recorded within the roof space and on the second storey. Gaps behind the timber barge boards proffer potential for some bird species such as house sparrow. A cautionary approach is recommended.
Recommendations	Recommendation 1 (EPS License) Applying for an EPS License: Building A supports three occasional day roosts for a low number of common pipistrelles, and soprano pipistrelle. Bats and their breeding sites and resting places are protected under the Conservation of Habitats and Species Regulations 2017. 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. Recommendation 2 (Lighting During Development) If the 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 on the identified wildlife corridor (river/stream) 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). Recommendation 4 (Hibernation and Pipistrelles) 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 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. 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.

	Recommendation 6 (Post Development Enhancements) Bats: 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. The two locations will be positioned to allow bats to moderate temperature variations in the summer months (in conjunction with the replacement roosts). These features will be situated behind bargeboards on the southern elevation of the proposed structure. This will enable the new roosts to maximise solar gain (Appendix F). In addition, a purpose-built night roost to be constructed for Lesser horseshoe bats. The ECoW will advise on the location and design of a replacement roost of Lesser horseshoe bats. Following advice from Natural Resources Wales the new day roost must support the following features: Birds: One section of RSPB approved sparrow terrace to be fitted on the proposed eastern elevation at a height >3m, ideally below the gutter (Appendix F).
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

Section One: Introduction		Page
1.1	Background	1
1.2	Proposed Works	1
1.3	Site Description	1
1.4	Policy and Legislation	1
1.5	Survey Aims and Objectives	2
Section Two: The Survey Method		3
2.1	Desktop Survey (Bats)	3
2.2	Desktop Survey (Habitat)	3
2.3	Preliminary Roost Assessment	3
2.4	Nesting Birds	4
2.5	Additional Ecological Considerations	4
2.6	Limitations of the Survey Method	4
2.7	Activity Surveys	4
2.8	Survey Equipment	4
2.10	Meet Our Survey Team	5
Section Three: Results		5
3.1	Desktop Survey Results	5
3.2	Species Records	5
3.3	Local Roost Records	6
3.4	Habitat and Satellite Imagery	6
3.5	Preliminary Roost Assessment	7
3.6	Suitability for Commuting and Foraging Bats	9
3.7	Suitability for Hibernating Bats	9
3.8	Evidence of Nesting Birds	9
3.9	Survey Effort	9
3.10	Field Survey Details and Weather Conditions	9
3.11	Activity Survey Results	9
3.12	Infra-red Video Survey	10
3.13	Passive Survey Results	10
3.14	Additional Ecological Constraints (Results)	11
3.15	Summary of Evidence	11
3.16	Impact Assessment	12
Section Four: Conclusions		12
Section Five: Recommendations & Enhancements		14
Section Six: Additional Information		18
6.1	Limitations & Liabilities	18
6.2	Encountering a Protected Species During Works	18
6.3	Expiration of this Report	18
References and Bibliography		19



List of Figures		Page
Figure 1	Site Location	2
Figure 2	A Site Plan	3

List of Tables		Page
Table 3.1	Statutory Sites (10km)	5
Table 3.2	Local Records for Bat Species within 1km of the Site	5
Table 3.3	Local Roost Records	5
Table 3.4	Local Habitat Features within 1km of the Site	5
Table 3.5	Preliminary Roost Assessment	7
Table 3.6	Summary of Infra-red Monitoring	10
Table 3.7	Summary of Evidence	11

Appendix	
A.	Site Photographs
B.	Bats and the Law: Legislation in Wales
C.	Meet our Survey Team
D.	Field Survey & Weather Conditions
E.	Survey Equipment
F.	Biodiversity Enhancement Features
G.	Activity Survey – Recordings (Raw data)
H.	Static Survey Results (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, 'Standard Upholstery, Pontmorlais, Merthyr Tydfil, CF47 8UT.' 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 structures will be referred to as, 'Building A – B.'
- 1.1.2 This report contains the results from three dusk activity surveys, and four 14-day internal passive surveys, conducted during the summer months. Surveys were carried out with the purpose of identifying the presence/likely absence of bat roosts at Buildings A – B. 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

- 1.1.1 Planning permission is sought for the conversion of a Victorian warehouse into a residential unit, and the demolition/removal of a storeroom.
- 1.1.2 Site Plan: See Figure 2.

1.3 Site Description

- 1.2.1 Building A is a Victorian warehouse, previously utilised as an upholstery factory. The structure occupies an urban plot of approximately ≈12m x ≈24m and the structure is a traditionally built three-storey stone building with a cement render to the front (north-east) elevation. Materials include a breathable roofing membrane, timber bargeboards, pressed steel guttering and lead flashing.
- 1.2.2 Building A is located to the rear of properties which line the near-by service roads of Pontmorlais West and High Street, and so artificial lighting is limited. Habitat in the immediate vicinity of the structure is mixed, comprising other buildings, and made surfaces, such as roads and pavements. The structure is located directly adjacent to Nant Morlais (Morlais Brook) which bisects Merthyr Tydfil town centre before joining the Tâf Fawr (≈450m south-west).
- 1.2.3 Building A is accessed via a small single-track lane from a main service road (Pontmorlais West - A4102), ≈300m north of Merthyr Tydfil town centre and ≈1km east of the A470. The settlement of Merthyr Tydfil extends continuously >1km around Building A.
- 1.2.4 The Bannau Brycheiniog National Park is located ≈2.1km north of Building A and dominates the landscape to the north.

1.4 Policy and Legislation

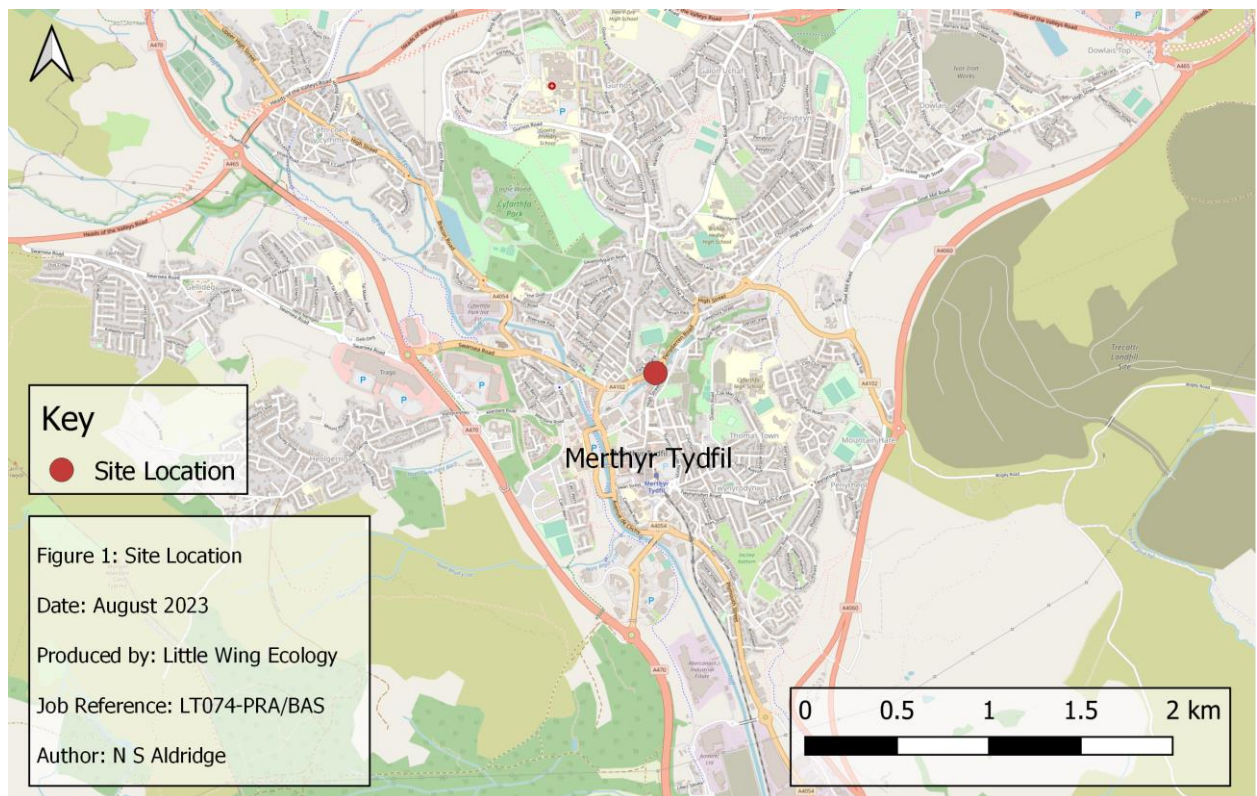
In Wales, all bat species and their roosts are legally protected, by both domestic and international legislation. This means you may be committing a criminal offence if you:

- 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 Buildings A & B.
 - 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.



QGIS Development Team, <2022>. QGIS Geographic Information System. Open-Source Geospatial Foundation Project.



QGIS Development Team, <2022>. QGIS Geographic Information System. Open-Source Geospatial Foundation Project.

SECTION TWO: THE SURVEY METHOD

2.1 Desktop Survey (Bats)

- 2.1.1 Available records for bats (2km) and nesting birds (150m) were collated from the local biological records centre, the along with any statutory sites known to support bat species, within a 10 km radius of the site.

2.2 Desktop Survey (Habitat)

- 2.1.2 A review of aerial photography was undertaken to assess the provision of suitable foraging and commuting habitat within proximity to Building A & B. This information was used in combination with a review of statutory designated sites, via the MAGIC website, including Special Areas of Conservation (SACs) and SSSIs to help in confirming the presence of bat species locally.
- 2.1.3 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 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 A potential nest and roost assessment survey was carried out on the interior and exterior of Buildings A&B by a suitably experienced ecologist and Natural Resources Wales (NRW) licenced bat worker (Appendix C).
- 2.3.3 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.
- 2.3.4 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.
- 2.3.5 Weather conditions at the time of survey were assessed including the use of the Beaufort wind force scale and the Okta scale of cloud cover (see the Appendix D for details, timings, and weather conditions at the time of the survey).

2.4 Nesting Birds

- 2.4.1 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 3.14).

2.7 Activity Surveys

- 3.6.1 Following guidelines set out on Bat Conservation Trusts Good Practice Guidelines (Collins, J. (Ed.) (2016), Buildings A & B 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.

2.8 Survey Equipment

- 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.
- 2.8.2 Details of the equipment and analysis software used in this survey in recorded in Appendix E.

2.9 Meet Our Survey Team

2.9.1 Details of our surveyors and their experience is recorded in Appendix C.

SECTION THREE: RESULTS

3.1 Desktop Survey Results

3.1.1 No statutory sites including sites designated for bats fall on or directly adjacent to Buildings A & B.

Designation	Number of Records			Nearest Distance from Site (m)	Connectivity
	On-site	<1km	<10		
Site of Importance for Nature Conservation (SINC) – Non-statutory	0	0	0	-	-
Site of Special Scientific Interest (Bats) -International Statutory	0	0	0	-	-
Special Area of Conservation (Bats) – National Statutory	0	0	0	-	-
Site of Special Scientific Interest (Bats) – National Statutory	0	0	0	-	-
Site of Special Scientific Interest – National Statutory	0	0	0	-	-

Table 3.1: Statutory Sites (10km)

3.1.1 Due to the nature and proximity of Buildings A & B to local habitat features, care was taken to identify foraging and commuting potential and identify connectivity with the surrounding habitat.

3.1.2 There are no SSSIs on or adjacent to Building A. The nearest SSSIs are, 'Cwm Glo a Glyndyrys,' which is located ≈1.1km west of Building A and the, 'Cwm Tâf Fechan,' ≈1.7km to the north-west.

3.1.3 There are no non-statutory sites, such as Site important for Nature Conservation (SINC), on the proposed development site, however, an adjacent stream is a tributary of the nearby SINC, 'Afon Tâf,' which is located ≈430m west of Building A. This tributary is fragmented but locally supports some high-quality habitat to support bats including roosting and foraging sites. Collectively these waterways form a significant feature in the landscape providing connectivity east to west and north to south.

3.2 Species Records

3.2.1 The local biodiversity records provided by SEWBReC (0234-033) returned 253 species records including 223 records for bat species and 30 records for bird species locally. Some of these were too old to be considered viable. The closest (<1km) and most significant records are summarised below. There are 32 records for bat species within 500m of Building A.

3.2.2

Species Group	Species / Notes	Number of Records			Nearest Distance from Site (m)	Connectivity
		On-site	<500m	0.5-1km		
Bats	Chiroptera (Bat - unidentified) CAT1	0	3	4	143	High
	Myotis (Myotis bat species) CAT1	0	0	4	821	Low
	Nyctalus noctula (noctule bat) CAT1	0	2	2	246	High
	Pipistrellus (pipistrelle species) CAT1	0	3	6	240	High
	Pipistrellus pipistrellus (common pipistrelle) CAT1	0	18	18	46	High
	Pipistrellus pygmaeus (soprano pipistrelle) CAT1	0	6	2	46	High
	Plecotus auritus (brown long-eared bat) CAT1	0	3	4	46	High
	Rhinolophus hipposideros (lesser horseshoe bat) CAT1	0	1	4	46	High
Birds	CAT1	0	8	2	456	Moderate
	CAT2	0	3	3	456	Moderate
	CAT3	0	9	4	121	High

Table 3.2: Local Records for Bat and Bird Species within 1km of the Site

3.3 Local Roost Records

Species	Roost Type	Nearest Distance to Site (m)	Connectivity
Pipistrellus pipistrellus (common pipistrelle) CAT1	Day roost	46	High
Plecotus auritus (brown long-eared) CAT1	Roosting in building	46	High
Rhinolophus hipposideros (lesser horseshoe) CAT1	Small day roost	46	High
Pipistrellus pipistrellus (common pipistrelle) CAT1	Day roost	85	High
Plecotus auritus (brown long-eared) CAT1	Night roost	85	High

Table 3.3: Local Roost Records (Bats)

3.4 Habitat and Satellite Imagery

Description	Notes	Nearest Distance to Site (m)	Connectivity
Broadleaved Woodland	Banks of the Nant Morlais	Adjacent	High
Nant Morlais - Running Water	Wildlife Site	Adjacent	High
Broadleaved Woodland	Thomastown Park	≈180	High
Afon Tâf - Running Water	Local SINC - Wildlife Site	≈480	High

Table 3.4: Local Habitat Features within 1km of the Site

- 3.4.1 Several scattered and fragmented broadleaved woodlands are located within the settlement of Merthyr Tydfil. The most significant of which in relation to Building A are the adjacent woodland that follows the Nant Morlais south-west where this joins the Afon Tâf (≈430m distant). The Afon Tâf forms a significant feature in the landscape providing connectivity north and south.
- 3.4.2 In addition, a larger broadleaved woodland is located ≈180m east of the Building A. Collectively these features provide significant roosting and foraging opportunities for bats.

3.5 Preliminary Roost Assessment

Survey Date(s): Saturday 23rd May 2023

Surveyor(s): N. S. Aldridge (a Natural Resources Wales [NRW] licenced bat worker)

Description	Potential Nest and Roost Assessment	Evidence	Assessment
Building A Standard Upholstery An unoccupied Structure A three-storey stone and slate, traditionally built Victorian warehouse with a cement render to the front elevation, slated roof, and a breathable roofing membrane.	Exterior Elevations Several gaps were recorded between the bargeboard and wall plate. The roof is relatively new and materials are in good order. No areas of flashing were recorded around the chimney, but all elevations of the chimney were not visible from a ground observation (i.e., the western elevation). Gaps were recorded around exterior doors and around windows. Some windows were broken providing access to the interior space.	No evidence recorded of roosting bats. Two jackdaws (<i>Corvus monedula</i>) were observed nest building at the chimney entrance.	Moderate (Bats) High (birds)
	Exterior - Roof Structure (Slates/Tiles) No damaged or slipped roof tiles were observed. All observed materials were in good condition and well fitted. Not all the roof was visible from a ground level examination, the western elevation was largely obscured from view. The roof was later found to be lined with a breathable membrane and the client confirmed that the building had been re-roofed at some point in its recent history.	No evidence recorded of nesting birds or roosting bats.	Low (Bats) Negligible (birds)
	Exterior - Roof Structure (Ridge Tiles) No significant gaps were recorded along the ridge tiles. The materials were in good condition and well fitted. A good record was made of the condition of the ridge from the eastern elevation, but direct observation was not possible from the west.	No evidence recorded of nesting birds or roosting bats.	Negligible (Bats) Negligible (birds)
	Exterior - Chimneys/Flue Where observation was possible, both the flashing and tiles around the chimney were well fitted and in good condition. A good record was made of the condition of the chimney from the eastern elevation, but direct observation was not possible from the west. Two jackdaws were observed nest building at the chimney entrance.	No evidence recorded of nesting birds or roosting bats.	Negligible/low (Bats) High (birds)
	Exterior - Bargeboards Several gaps of various sizes were recorded between the timber bargeboard and the wall plate. Large gaps were recorded on the northern elevation.	No evidence recorded of nesting birds or roosting bats.	High (Bats) Moderate (birds)
	Interior – Ground Floor The interior of Building A has recently been stripped out and no ceilings are present. This is a dark space with access to the upper two storeys. Several gaps were recorded between the floor joist (in the ceiling) and the exterior stone wall. On the eastern elevation these form dark spaces which offer potential for crevice dwelling bat species. Along the western elevation there is light penetration between the floor joists and the exterior stone wall, and the 1st storey is visible in several places. These spaces offer much	No evidence recorded of nesting birds or roosting bats.	Moderate (Bats) Negligible (birds)

	less potential. Within the exterior stone walls there are several gaps in the mortar providing access to small cavities. A small corner of the ground floor has been boarded off to provide a secure store room. The ceiling boards are still in place above this feature and the gap between the ceiling board and the floorboards is open to the interior of the main room (photo left – below). This offers opportunities for roosting and a dark space.		
	<u>Interior – 1st Floor</u> The interior of the first storey has recently been stripped out and no ceilings are present. This is a relatively light space with widows to all elevations. Several gaps were recorded between the floor joist (in the ceiling) and the exterior stone wall. On the eastern elevation these form dark spaces which offer some potential for crevice dwelling bat species. Along the western elevation there is light penetration between the floor joists and the exterior stone wall, and the 1st storey is visible in several places. These spaces offer much less potential. A single bat dropping of a pipistrelle type was recorded at the south eastern windowsill and feeding remains (small tortoiseshell - <i>Agla urticae</i>) at the north western windowsill; characteristic of brown long eared bat (<i>Plecotus auritus</i>) or lesser horseshoe (<i>Rhinolophus hipposideros</i>), both of which are recorded roosting locally (<50m). A smashed window provides access to the exterior. The light levels at these locations suggest that both represent a night roost/feeding roost. Disused jackdaw nesting material had been swept up into one corner.	Bat droppings (s) and feeding debris. Remains of a jackdaw nest.	High (Bats) High (birds)
	<u>Interior – 2nd Floor (Including Roof Space)</u> The interior of the second storey has recently been stripped out and no ceilings are present. The roof space is exposed to the roofing felt. No light penetration was recorded at roof level. Remains of original timber cladding remain in situ along the interior southern gable. Each of these provided an internal cavity of unknown proportions and a potential roosting site for crevice dwelling species.	No evidence recorded roosting bats. An inactive jackdaw nest was recorded in the roof space at the north west corner.	Moderate (Bats) High (birds)
<u>Building B</u> A single storey, block-built outhouse adjoining the southern gable of Building A.	<u>Exterior – Building B</u> A small structure (Building B) adjoins the southern gable of Building A. This was locked and inaccessible. Much of this structure was covered in vegetation and only a partial exterior examination was possible.	No evidence recorded of nesting birds or roosting bats.	Cautionary (Bats) Low (birds)
<u>Roofless Corrugated Lean-to</u>	<u>Exterior – Remains of a Lean to - Building B</u> Previously a smaller structure had been attached to the southern elevation of Building B and while access to the interior was not available it was recorded that the roof of this structure was no longer in place and this structure represents the remains of the exterior walls (mostly corrugated sheet metal).	No evidence recorded of nesting birds or roosting bats. Two inactive swallow nests were recorded.	Negligible (Bats) Low (birds)

Table 3.5: Preliminary Roost Assessment

3.6 Suitability for Commuting and Foraging Bats

- 3.6.1 The impact of artificial lighting on the interior of the site, specifically along the adjacent river (southern elevation) is considered high. This is a relatively dark site set within an urban landscape and the adjacent river has been identified as providing a significant feature for commuting and foraging bats providing connectivity to the river Tâf and the wider landscape.

3.7 Suitability for Hibernating Bats

- 3.7.1 Using a degree of academic supposition, the features identified within the PRA are considered to offer a low risk at providing the hibernating conditions that bats prefer – small gaps being present at the top of the wall plate (eaves).
- 3.7.2 Pipistrelle species are known to hibernate in buildings, and this will need to be taken into consideration.

3.8 Evidence of Nesting Birds

- 3.8.1 Two jackdaws were recorded at the entrance to the chimney actively building a nest. Evidence of inactive jackdaw nest was recorded within the roof space and on the second storey. Gaps behind the timber barge boards proffer potential for some bird species such as house sparrow (*Passer domesticus*). A cautionary approach is recommended.

3.9 Survey Effort

- 3.9.1 Following guidelines set out on Bat Conservation Trusts Good Practice Guidelines (Collins, J. (Ed.) (2016), Buildings A and B have been categorised as being of high risk, requiring a dusk survey for bats on three occasions, no less than 14 days apart. Dusk surveys are required to determine the presence/likely absence of roosting bats, species identification, population size, roost type, and the requirement for any associated mitigation. 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.
- 3.9.2 These surveys represented the minimum recommended number of visits to give confidence in a negative result for structures.
- 3.9.3 In addition, three internal static surveys will be carried out to establish roost type, inform species identification and provide information on how the site is being used by the resident bat population.

3.10 Field Survey Details & Weather Conditions

- 3.10.1 All surveys were conducted in suitable weather conditions. Details of weather conditions during each survey are recorded in the Appendix.

3.11 Activity Survey Results

- 3.11.1 Three dusk activity surveys were conducted at the site to establish presence/possible absence of bat roost. In total, 161 recordings were made. The majority of these were of animals foraging around the building with the highest levels of activity being located along the river and around mature trees to the western elevation. Four recordings were made of animals emerging from Building A.
- 3.11.2 On 06.06.23 two common pipistrelles were observed emerging from behind the bargeboard on the western elevation of Building A. The emergence points were three quarters of the way along the bargeboard, stating at the southern corner.

3.11.3 On 27.07.23, two soprano pipistrelles were recorded emerging from the norther elevation of Building A. The first emerged from an opening in a lintel above a window on the second floor (western window). The second emerged from behind a bargeboard on the gable, under the western roof pitch, approximately half way along.

3.11.4 Details of all the recording made are displayed in Appendix F: Activity Survey – Recordings (Raw data).

3.12 Infrared Video Survey

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

Date (Evening of)	Notes
06.06.23 	Location: Building A – North elevation Continuous recording made. Start and end time confirmed by surveyors. No bats were identified emerging from roosting locations. The Anabat SD2 (paired with the camera to provide an audio recording) captured 186 recordings but these were recordings of the bat observed foraging to the interior of Building A. Foraging: common pipistrelles (<i>Pipistrellus pipistrellus</i>), Soprano pipistrelle (<i>Pipistrellus pygmaeus</i>).
28.06.23 	Location: Building A – Western elevation Continuous recording made. Start and end time confirmed by surveyors. No bats were identified emerging from roosting locations. The Anabat SD2 (paired with the camera to provide an audio recording) captured 186 recordings but these were recordings of the bat observed foraging to the interior of Building A. Foraging: common pipistrelles, soprano pipistrelle
20.06.23 	Location: Building A – Western elevation. Continuous recording made. Start and end time confirmed by surveyors. No bats were identified emerging from roosting locations. The Anabat SD2 (paired with the camera to provide an audio recording) captured 186 recordings but these were recordings of the bat observed foraging to the interior of Building A. Foraging: common pipistrelles, soprano pipistrelle.

Table 3.10: Summary of Infrared Monitoring

3.13 Passive Survey Results

3.13.1 Four static surveys were conducted at the site to establish presence/possible absence of bat roost in buildings A and B.

3.13.2 No evidence of roosting bats was recorded during a 14-day recording period on the ground floor of Building A. Soprano pipistrelle and common pipistrelles were recorded on 10 days out of the 14-day recording period. None of these recordings were close enough to sunset to be considered emergence. Recordings

were few and distributed throughout the night. It is considered that these species are entering the building through openings in the windows for incidental foraging. Over a nine-day recording period, common pipistrelle and soprano pipistrelles were recorded using this space on 4 days. The majority of these recordings were clustered around dawn on 24th June and may be associated with roosting activity. A recording fault on day 10 resulted in the recording period being cut short. Evidence collected during a 14-day static survey of Building A and B support the use of building A as a location for incidental foraging by common pipistrelles and soprano pipistrelles and use as an occasion roost (soprano pipistrelles - as supported by dusk emergence survey). No evidence of roosting was recorded at Building B.

3.13.3 Two species were recorded using the 1st and 2nd floor of Building a during a 14-day passive survey.

3.13.4 Details of all the recording made are displayed in Appendix G: Static Survey Results (Raw data).

3.14 Additional Ecological Constraints (Results)

3.14.1 The interior of Building A was accessible. The roof space was exposed to the second storey.

3.14.2 Building A is located in a built-up area and sits adjacent to a fast-flowing stream (Nant Morlais). Consequently, observation from a distance was restricted. While there was a clear view of the exterior elevations to gutter level, direct observation of the western side of the roof and chimney was not possible.

3.14.3 The interior of Building B was inaccessible, and observation of the exterior was limited. Additional work will be required but direct observation is difficult due to building debris and vegetative growth.

3.14.4 The use of the structure as a commercial storage space and the presence of debris, dust and dirt hindered the search for bat droppings.

3.14.5 The field survey was conducted outside of the bat breeding season, but this being said, it is possible to assess the suitability of structures for roosting bats throughout the year and identify many species in some circumstances.

3.14.6 Due to the quality of the adjacent habitat (Nant Morlais), it is considered that the proposed works would benefit from the inclusion of enhancement features (Appendix F).

3.14.7 No additional limitations were recorded during the field survey.

3.14.8 During Day 10 of a static survey of Building A (2nd Floor) a fault occurred on the recording device and no subsequent recordings were made. Recordings were made between 20.7.23 – 28.07.23.

3.15 Summary of Evidence

Survey Location	Species (Recorded)	Notes
Buildings A	Common pipistrelle Soprano pipistrelle	Droppings: low numbers of bat droppings within Building A (of a pipistrelle type). Feeding debris: potential evidence of a feeding roost, consummate with species recorded locally, i.e., <i>Plecotus auritus</i> and <i>Rhinolophus hipposideros</i> (<46m). No droppings were identified in association with potential feeding remains. Emergence: Live sightings: X2 soprano pipistrelle recorded emerging from the norther gable during one visit only (two separate locations). X2 Common pipistrelles recorded emerging from the western elevation during one visit only.

		Internal static survey: No evidence of roosting bats was recorded during a 14-day recording period on the ground floor of Building A. Soprano pipistrelle and common pipistrelles were recorded on 10 days out of the 14-day recording period. None of these recordings were close enough to sunset to be considered emergence. Recordings were few and distributed throughout the night. It is considered that these species are entering the building through openings in the windows for incidental foraging. Over a ten-day recording period, common pipistrelle and soprano pipistrelles were recorded using this space on 4 days. The majority of these recordings were clustered around dawn on 24th June and may be associated with roosting activity. A recording fault on day 10 resulted in the recording period being cut short. Evidence collected during a 14-day static survey of Building A and B support the use of building A as a location for incidental foraging by common pipistrelles and soprano pipistrelles and use as an occasion roost (soprano pipistrelles - as supported by dusk emergence survey). No evidence of roosting was recorded at Building B. Roost Type: These roosts have been classified as occasional days roost for common pipistrelle and soprano pipistrelle. Three droppings of lesser horseshoe were identified during a single visit to sight. No recordings were made of lesser horseshoe using either building during the 14-day static survey. The use of Building A by lesser horseshoe is considered transient – this evidence may represent a single visit (there are records of lesser horseshoe bats roosting locally). There is no evidence of the building being used as a night roost or day roost by this species.
Buildings B	No live animals recorded.	Droppings: Nil Emergence: Nil Internal static survey: Nil

Table 3.11: Summary of Evidence

3.16 Impact Assessment

- 3.16.1 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 site is assessed to be low, due to the presence of a small number of two common species – common pipistrelle, soprano pipistrelle (Least Concern – IUCN Red List). 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.

SECTION FOUR: CONCLUSIONS

- 4.1 With a focus on the aims of this report as set out in Section 1, the following conclusions have been drawn.
- 4.1.1 A Preliminary Roost Assessment recorded evidence of bats within the interior of Buildings A. Droppings were scattered and lightly distributed.
- 4.1.2 Building A has several potential roosting locations that could be used by bats due to their size shape, shelter, protection, conditions and surrounding habitat, but is unlikely to support a roost of a high conservation significance due to recent alterations.
- 4.1.3 Locations of note include behind the barge board on all elevations, internally between the floor joists and

the exterior wall (particularly along the eastern elevation), within cavities, above the secure store room, behind timber cladding and along the ridge board.

- 4.1.4 The recent alteration to the interior of Building A and the presence of a breathable membrane to the roof has reduced the potential of this structure in supporting roost of high conservation significance.
- 4.1.5 Evidence recorded during the PRA report includes:
 - low numbers of bat droppings within Building A (of a pipistrelle type).
 - proximity to locally recorded roosting sites for *Pipistrellus pipistrellus*, *Plecotus auritus* and *Rhinolophus hipposideros* (<90m),
 - potential evidence of a feeding roost, consummate with species recorded locally, i.e., *Plecotus auritus* and *Rhinolophus hipposideros* (<46m),
 - an understanding of the local habitat features and the suitability of these features for foraging and commuting.
- 4.1.6 The resultant categorisation based on best practice guidance was for Buildings A being a high-risk structure requiring a minimum of three presence/probable absence surveys during the summer months (May-September), to establish bat interest. In addition, three internal 14-day static surveys would collect additional evidence that would help identify the likely presence/absence of roosting bats, roost type and population size. (Collins, J. [Ed.] (2016). A cautionary approach was taken to Building B which in conjunction with building A was subject to three dusk surveys in addition to a 14-day static survey.
- 4.1.7 Three dusk emergence surveys and three internal 14-day static survey returned a positive result for bats using Building A as a roost. X2 Soprano pipistrelles were recorded emerging from the northern gable during the third visit (two different locations). X2 common pipistrelles recorded emerging from the western elevation during the first visit only. Recordings included common pipistrelle and soprano pipistrelle. These roosts have been classified as occasional days roost for these species.
- 4.1.8 Three dusk emergence surveys and three internal 14-day static survey returned a negative result for bats using Building B as a roost. Bats are considered likely absent from this structure.
- 4.1.9 Evidence collected during a 14-day static survey of Building A and B support the use of building A as a location for incidental foraging by common pipistrelles and soprano pipistrelles and use as an occasion roost (soprano pipistrelles - as supported by dusk emergence survey). No evidence of roosting was recorded at Building B.
- 4.1.10 Extensive foraging was recorded along the southern and western elevations of Buildings A & B. Most records for foraging were either along the adjacent river or around mature trees on the western elevation.
- 4.1.11 A cautionary approach is recommended when addressing lesser horseshoe which are recorded roosting locally. No evidence of the buildings being used by lesser horseshoe bats was recorded during 14-day internal surveys and no lessers horseshoe bats were recorded during dusk activity surveys. However, evidence of potential feeding debris was recorded during the PRA. Taking a cautionary approach, it will be recommended that as an enhancement, a small night roost be constructed near the southern elevation (adjacent to the stream). An example of a purpose-built night roost is included in Appendix F but alternatively a portion of Building B could be adapted to provide a suitable space. The design of this space must be prepared in consultation with a suitably qualified ecologist. This enhancement would help protect the local lesser horseshoe population from future development in the area.
- 4.1.12 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. If impacts of this nature will arise, then a European Protected Species (EPS) licence will be required from Natural Resources Wales (NRW) before any

work is done which affects the roosts and the bat exit/entry points.

- 4.1.13 In the event that works do not start within two years, following this survey (August 2023) then an updated survey would be required to confirm the findings of this report. Bats are opportunistic animals and will exploit any opportunity for roosting if it arises and the conditions are favourable. Therefore, if a bat is discovered during development, all works must immediately cease, and an NRW-licensed bat worker must be contacted for advice.
- 4.1.14 Two jackdaws were recorded at the entrance to the chimney actively building a nest. Evidence of inactive jackdaw nest was recorded within the roof space and on the second storey. Gaps behind the timber barge boards proffer potential for some bird species such as house sparrow. 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 the local Authority's commitment to provide 'net gain' for biodiversity onsite, or off-site (if the proposed development cannot accommodate such requirements *in-situ*).

Recommendation 1 (EPS License)

A. Applying for an EPS License

Building A supports three occasional day roosts for a low number of common pipistrelles, and soprano pipistrelle. 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:

1. 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;
2. There is no satisfactory alternative; and,
3. 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, a European Protected Species (EPS) licence will be required to facilitate the proposals. The EPS licence is issued under Regulation 55 of the Habitats Regulations by N R W. 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 Development Licence - Application form
2. European Protected Species Development Licence – Ecological 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:
4. A copy of the 'Local Planning Authority Decision Notice.'
5. A copy of either the Delegated Decision report or committee meeting minutes (whichever format was used to approve the planning application).
6. European Protected Species Development Licence - Local Planning Authority Consultation Form.
7. 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.

B. Further Survey

No further survey is recommended at this time. If works do not start within two years (i.e., August 2025) 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 occasional 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 and impacted on a breeding population, 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. Provision of a new roosts for common pipistrelles and soprano pipistrelle (two in total).
2. The provision of a temporary roosting location.
3. The capture/exclusion of bats at the start of works.
4. The modification/replacement of existing roosts.
5. The creation of a new roost.
6. Provision of appropriate external lighting.

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

1. 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.
2. 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.
3. Once scaffolding has been erected or a cherry-picker/telehandler is on-site, the ECoW will attend the site to apply exclusion devices 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.
4. At the same time that the exclusion devices are affixed, two, 'Eco Rocket Bat Box,' or two, 'Eco Kent,' bat boxes (The Nestbox Company – or similar) are to be installed near both the southern and western facing elevations of Building A, depending on the impact of scaffolding on works. These temporary roosts will need to provide a clear flight path for animals to enter and exit safely. This is ideally done on mature trees, but at this location it is recommended that these are located close to the adjacent stream. Provided the boxes will remain unaffected by artificial light, they may be erected on part of the structure that is to remain unaffected by works (including scaffolding), i.e., the boxes will not need to be removed to complete the works and then re-attached. The ECoW will advise on the suitable locations for the boxes, which may include the installation of a free-standing pole, such as those used with, 'Rocket Bat Boxes' (The Nestbox Company).
5. Works may start with the stripping of the barge boards and roofing materials, 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.
6. 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

Day roosts for common pipistrelle, soprano pipistrelle, will be modified. They will be relocated to features built into the altered structure.

A total of four new bat access points must be installed on the western and northern elevations of the modified structure. Access to be provided behind a replacement timber bargeboard and 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 fascias must not be made of uPVC.

The location of access points must reflect the existing roost locations as far as possible. Any roosting boxes must be placed at the height of the roof on the new structure.

G. The Creation of a New 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. The two locations will be positioned to allow bats to moderate temperature variations in the summer months (in conjunction with the replacement roosts). These bat access points will be situated behind bargeboards on the southern elevation of the proposed structure. This will enable the new roosts to maximise solar gain. Construction will follow the guidance details in Section F (above).

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 the 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 on the identified wildlife corridor (river/stream) 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 vegetation (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 08/18' (2018) 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)

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 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.

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.'

The following principles of design must be followed:

- **Bats:** 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. The two locations will be positioned to allow bats to moderate temperature variations in the summer months (in conjunction with the replacement roosts). These features will be situated behind bargeboards on the southern elevation of the proposed structure. This will enable the new roosts to maximise solar gain (Appendix F).
- In addition, a purpose-built night roost to be constructed for Lesser horseshoe bats. The ECoW will advise on the location and design of a replacement roost of Lesser horseshoe bats. Following advice from Natural Resources Wales the new day roost must support the following features:
 - a. The roost itself must be protected from human interference/vandalism, and depending on the position of the roost entrance, consideration must also be given to measures to prevent predators such as cats accessing the roost;
 - b. The roost must be located and orientated to maximise solar gain, and benefit from vegetated flight lines leading to it but not obstructing the roost access;

- At Standard Upholstery the most suitable location for this roost will be near or adjacent to the existing stream feature south-east of Building A-B. Construction of the new roost will be completed prior to works commencing on Buildings A-B.
- **Birds:** One section of RSPB approved sparrow terrace to be fitted on the proposed eastern elevation at a height >3m, ideally below the gutter (Appendix F).

SECTION SIX: ADDITIONAL INFORMATION

6.1 LIMITATIONS & LIABILITIES

- 6.1.1 Little Wing Ecology (CYF) has prepared this Report for the sole use of the above-named Client or their Agents in accordance with our terms of business, under which our services were performed. No other warranty, expressed or implied, is made as to the professional advice included in this Report or any other services provided by us. This Report may not be relied upon by any other party without the prior and express written agreement of Little Wing Ecology (CYF).
- 6.1.2 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).

6.2 ENCOUNTERING A PROTECTED SPECIES DURING WORKS

- 6.2.1 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.

6.3 EXPIRATION OF THIS REPORT

- 6.3.1 In the event that works do not start within two years (i.e., August 2025) further survey and assessment will be necessary to qualify the results of this report and its recommendations.
- 6.3.2 This report is valid for two years (i.e., August 2025).

REFERENCES

& Bibliography

Bat Conservation Trust. Bats and Artificial Lighting in the UK: Bats and the Built Environment Series Guidance Note 08/18 (2018).

Accessed on 14/06/2022

Available at: <https://cdn.bats.org.uk/uploads/pdf/Resources/ilp-guidance-note-8-bats-and-artificial-lighting-compressed.pdf?v=1542109349>

Bat Conservation Trust

Accessed 20/09/2022.

Available at: <https://www.bats.org.uk/our-work/buildings-planning-and-development/roost-replacement-and-enhancement/case-studies/lesser-horseshoe-bat-night-roosts-forest-of-dean>

Bat Conservation Trust. Bats and Lighting in the UK: Bats and the Built Environment Series (A Working Document).

Accessed on 20/05/2022.

Available at: https://plan-actions-chiropteres.fr/sites/default/files/fichiers/bats_and_lighting_in_the_uk_2009.pdf

Bat Conservation Trust (2010) UK Bats.

Accessed on 20/05/2022.

Available at: http://www.bats.org.uk/pages/uk_bats.html

Beddoes Products

Accessed 20/09/2022.

Available at: <https://beddoesproducts.com/>

Biodiversity: Code of Practice for Planning and Development - BS 42020:2013 (2013).

Accessed on 20/05/2022.

Available at:

<https://www.omegawestdocuments.com/media/documents/43/43.35%20BSI%20Biodiveristy%20Code%20of%20Practice.pdf>

CIEEM – Bat Mitigation Guidelines (Beta Version 1.0: June 2021) A guide to impact assessment, mitigation and compensation for developments affecting bats.

Accessed 20/05/2022.

Available at: <https://cieem.net/i-am/current-projects/bat-mitigation-guidance/>

Collins, J. (Ed.) (2016). 'Bat Surveys for Professional Ecologists – Good Practice Guidelines, 3rd Edition.' Bat Conservation Trust, London.

Accessed 20/05/2022.

Available at: <https://www.bats.org.uk/resources/guidance-for-professionals/bat-surveys-for-professional-ecologists-good-practice-guidelines-3rd-edition>

Government of Wales: Environment [Wales] Act (2016).

Accessed 20/05/2022.

Available at: <https://www.legislation.gov.uk/anaw/2016/3/contents>

Hundt, L. (Ed.) (2012). 'Bat Surveys: Good Practice Guidelines, 2nd edition.' Bat Conservation Trust, London.

Mitchell-Jones, A.J. (2004). 'Bat Mitigation Guidelines.' English Nature, Peterborough.

Mitchell-Jones, A.J. (1992). 'Focus on Bats.' English Nature, Peterborough.

Mitchell-Jones A.J. and McLeish A.P. (2004). 'The Bat Workers Manual, 3rd Edition,' English Nature, Peterborough.

Ninnes, R. (2015). 'NRW Approach to Bats and Planning,' Natural Resources Wales, Bangor.

Russ, J. (2012). 'British Bat Calls: A Guide to Species Identification.' Pelagic Publishing, Exeter.

Russ, J. (Ed.) (2021). 'Bat Calls of Britain and Europe: A Guide to Species Identification.' Pelagic Publishing, Exeter.

UK Government: The Conservation of Habitats and Species Regulations (2017) - as amended.
Accessed 20/05/2022.

Available at: <https://www.legislation.gov.uk/uksi/2017/1012/contents/made>

UK Government: Wildlife and Countryside Act (1981) - as amended.
Accessed 20/05/2022.

Available at: <https://www.legislation.gov.uk/ukpga/1981/69>

Williams, C. (2010). 'Biodiversity for Low and Zero Carbon Building: A Technical Guide for New Build.' RIBA Publishing, London

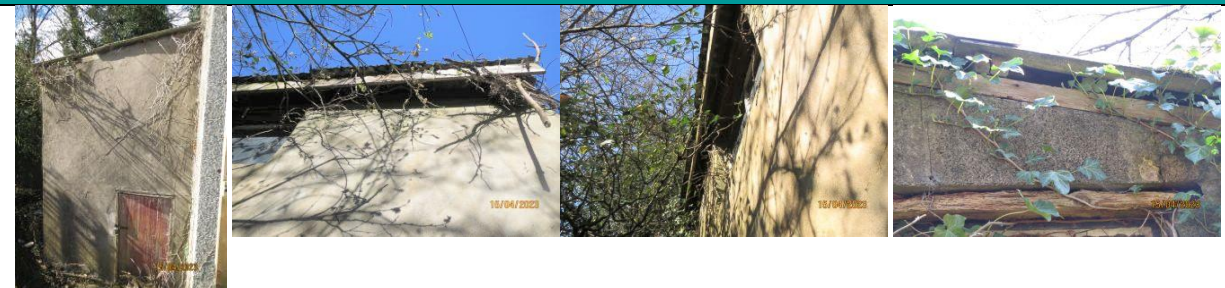
Wray, S., Wells, D., Long, E., & Mitchell-Jones, A.J. 2010. Valuing bats in ecological impact assessment. In Practice, No 70, Institute of Ecology and Environmental.

A. Site Photographs

Building A



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

Name / Licence	Experience
Nicholas Aldridge (BSc., (Hons), MSc., PGCE) Ecologist NRW Bat Licence: S091427/1 22nd July 2022 - 21st July 2024	Nic Aldridge 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.
Elizabeth Winstanley (BSc.) Ecologist with Little Wing Ecology	Liz 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.
Sam Paterson (MPhil.) Wildlife Surveyor	Sam is a science educator, working with home-school communities across Wales and a wildlife surveyor with Little Wing Ecology. She holds degrees in science, public engagement, and renewable technologies. Previously Sam worked as a lecturer and researcher at the University of South Wales, Pontypridd, developing and delivering a master's degree in Renewable Technologies. Her research into renewable technology, environmental impact and public understanding and acceptance of emerging renewable technologies has been published in two co-authored books and several academic papers. Sam has always had a love of the environment and nature and is dedicated to lifelong learning. Most recently she has developed an interest in soil regeneration and has attended several training sessions to develop her knowledge, understanding and practical skills in bat monitoring and bat ecology. Her current roles allow her to put her love of nature into practice.
Tracey Cotterell Wildlife Surveyor	Tracey 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 Wildlife Surveyor	Yvette 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.

D. Field Survey Details & Weather Conditions

Date	Timings (BST)		Notes, Sunset Times	Weather Conditions		
	Start	End		Variable	Start	End
06.06.2023 Dusk Activity Survey Buildings A & B	21.10	22.40	Internal inspection of Building A. Nic Aldridge (NA) Sunset: 21.27 Nic Aldridge (NA)	Temp (°C) Cloud Cover (Oktas) Precipitation Humidity (%) Beaufort Scale	14.7 4 Nil 62 2	13.5 4 Nil 63 1
28.06.2023 Dusk Activity Survey Buildings A & B	21.15	22.45	Internal inspection of Building A & B. Nic Aldridge (NA) Sunset: 21.36 Nic Aldridge (NA)	Temp (°C) Cloud Cover (Oktas) Precipitation Humidity (%) Beaufort Scale	18 8 Nil 72% 3	16.3 8 Nil 81% 0
20.07.2023 Dusk Activity Survey Buildings A & B	21.05	22.30	Internal inspection of Building A. Nic Aldridge (NA) Sunset: 21.20 Nic Aldridge (NA)	Temp (°C) Cloud Cover (Oktas) Precipitation Humidity (%) Beaufort Scale	16.9 2 Nil 61% 1	12.4 2 Nil 66% 1

E. Survey Equipment

Device Name	Detector Type	Survey Type	Analysis Software
Pettersson D240x time expansion bat detector and Tascam DR-05X Portable Digital Recorder	Full spectrum	Dusk Emergence Survey	BatSound Nic Aldridge
The Anabat SD2 is equipped with a broad-spectrum microphone and uses Frequency Division to make bat calls audible, and Zero-Crossings Analysis to make them visible as sonograms (time by frequency graphs).	Frequency Division	Dusk Emergence Survey	AnalookW Nic Aldridge
Peersonic RPA3B is a full spectrum recording at 384k samples/second gives ability to record up to 192kHz. Concurrent sound monitoring in Heterodyne or Frequency Division. Data signal processing gives concurrent display of peak energy frequency and power bar. Time stamp included on all solutions.	Full spectrum	Dusk Emergence Survey	BatSound Nic Aldridge
MELCAM Video Camera Camcorder 1080P IR Night Vision Digital Camera. Audio Provided by an Anabat SD1.	Infrared Video Frequency division audio recorder.	Dusk Emergence Survey	AnalookW Nic Aldridge
<u>14-Night internal passive survey</u> The Anabat SD2 is equipped with a broad-spectrum microphone and uses Frequency Division to make bat calls audible, and Zero-Crossings Analysis to make them visible as sonograms (time by frequency graphs).	Frequency Division	Passive Survey	AnalookW Nic Aldridge
<u>14-Night internal passive survey</u> Audiomoth – a full-spectrum acoustic logger, based on the Gecko processor range from Silicon Labs.	Full spectrum	Passive Survey	BatSound Nic Aldridge

F. Biodiversity Enhancement Features



Eco Rocket Bat Box
The Nestbox Company
Accessed 27/07/2023.

Available at: www.nestbox.co.uk

N.B. this is given as an example only. Many other suitable products are available.



Eco Kent Bat Box
The Nestbox Company
Accessed 27/07/2023.

Available at: www.nestbox.co.uk

N.B. this is given as an example only. Many other suitable products are available.



Schwegler 1SP Nest Box – Sparrow Terrace = Grey

Ark Wildlife
Accessed 29/09/2022.

Available at: <https://www.arkwildlife.co.uk/product/schwegler-1sp-sparrow-terrace-grey/>

N.B. this is given as an example only. Many other suitable products are available.

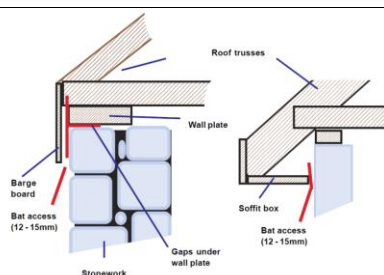


Lesser Horseshoe Night Roost (Example)

Bat Conservation Trust
Accessed 27/07/2023.

Available at: <https://www.bats.org.uk/our-work/buildings-planning-and-development/roost-replacement-and-enhancement/case-studies/lesser-horseshoe-bat-night-roosts-forest-of-dean>

N.B. this is given as an example only. Many other suitable designs are available.



Replacement Roosting opportunities

Gaps behind soffit, fascia, or barge boards.

Access points should measure 15mm x 200mm (approximately).

This gap must be against the wall.

Gaps must not be placed directly above windows or doors. The apex and corners are suitable locations.

G. Activity Survey – Recordings (Raw data)

NGR	DATE	Time	SPECIES (COMMON)	No	TOWN/VILLAGE	LOCATION	Surveyor's Position	Record number	OBSERVER'S NAME	COMMENT	CLASS OF SITE	FINDINGS
SO 05007 06543	06.06.23	20.45	Bat dropping (Pipistrelle type)	1	Merthyr Tydfil	Merthyr Upholstery	Building A (interior)	n/a	Nic Aldridge	2nd floor windowsill	Foraging.	2x Droppings
SO 05007 06543	06.06.23	21.15	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (W)	LT1-NA	Nic Aldridge	Foraging	Foraging	
SO 05007 06543	06.06.23	21.38	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT3-EW	Elizabeth Winstanley	Foraging along river.	Foraging.	
SO 05007 06543	06.06.23	21.38	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (W)	LT1-NA	Nic Aldridge	Commuting	Commuting	
SO 05007 06543	06.06.23	21.41	Pipistrelle spp.,	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-SP	Sam Pattersson	Commuting	Commuting	
SO 05007 06543	06.06.23	21.41	Pipistrelle spp.,	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT3-EW	Elizabeth Winstanley	Commuting	Commuting	
SO 05007 06543	06.06.23	21.41	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (W)	LT1-NA	Nic Aldridge	Foraging	Foraging	
SO 05007 06543	06.06.23	21.44	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT3-EW	Elizabeth Winstanley	Foraging	Foraging	
SO 05007 06543	06.06.23	21.46	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (W)	LT1-NA	Nic Aldridge	Emergence - From behind bargeboard, three quarters of the way along from the southern gable.	Day roost.	
SO 05007 06543	06.06.23	21.48	Pipistrelle spp.,	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT3-EW	Elizabeth Winstanley	Foraging	Foraging	
SO 05007 06543	06.06.23	21.50	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT3-EW	Elizabeth Winstanley	Foraging	Foraging	
SO 05007 06543	06.06.23	21.52	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-SP	Sam Pattersson	Foraging	Foraging	
SO 05007 06543	06.06.23	21.53	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-SP	Sam Pattersson	Foraging	Foraging	
SO 05007 06543	06.06.23	21.53	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT3-EW	Elizabeth Winstanley	Foraging	Foraging	
SO 05007 06543	06.06.23	21.54	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (W)	LT1-NA	Nic Aldridge	Emergence - From behind bargeboard, three quarters	Day roost.	

										of the way along from the southern gable.		
SO 05007 06543	06.06.23	21.55	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT3-EW	Elizabeth Winstanley	Foraging	Foraging	
SO 05007 06543	06.06.23	21.56	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT3-EW	Elizabeth Winstanley	Foraging	Foraging	
SO 05007 06543	06.06.23	21.58	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT3-EW	Elizabeth Winstanley	Foraging	Foraging	
SO 05007 06543	06.06.23	21.58	Common & Soprano pipistrelle	2	Merthyr Tydfil	Merthyr Upholstery	Building A (W)	LT1-NA	Nic Aldridge	Foraging	Animals were interacting, circling each other closely.	
SO 05007 06543	06.06.23	22.00	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT3-EW	Elizabeth Winstanley	Foraging	Foraging	
SO 05007 06543	06.06.23	22.05	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT3-EW	Elizabeth Winstanley	Foraging	Foraging	
SO 05007 06543	06.06.23	22.06	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT3-EW	Elizabeth Winstanley	Foraging	Foraging	
SO 05007 06543	06.06.23	22.09	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT3-EW	Elizabeth Winstanley	Foraging	Foraging	
SO 05007 06543	06.06.23	22.11	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT3-EW	Elizabeth Winstanley	Foraging	Foraging	
SO 05007 06543	06.06.23	22.13	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT3-EW	Elizabeth Winstanley	Foraging	Foraging	
SO 05007 06543	06.06.23	22.14	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-SP	Sam Pattersson	Heard-not- seen		
SO 05007 06543	06.06.23	22.15	Common pipistrelle	2	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT3-EW	Elizabeth Winstanley	Foraging	Foraging	
SO 05007 06543	06.06.23	22.16	(2) Common & Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT3-EW	Elizabeth Winstanley	Foraging	Foraging	
SO 05007 06543	06.06.23	22.18	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT3-EW	Elizabeth Winstanley	Foraging	Foraging	
SO 05007 06543	06.06.23	22.19	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (W)	LT1-NA	Nic Aldridge	Commuting	Commuting	
SO 05007 06543	06.06.23	22.20	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT3-EW	Elizabeth Winstanley	Foraging	Foraging	
SO 05007 06543	06.06.23	22.21	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT3-EW	Elizabeth Winstanley	Foraging	Foraging	
SO 05007 06543	06.06.23	22.22	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-SP	Sam Pattersson	Heard-not- seen		
SO 05007 06543	06.06.23	22.22	Common	1	Merthyr Tydfil	Merthyr	Building A & B	LT3-EW	Elizabeth	Foraging	Foraging	

			pipistrelle			Upholstery	(SE)		Winstanley			
SO 05007 06543	06.06.23	22.24	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT3-EW	Elizabeth Winstanley	Foraging	Foraging	
SO 05007 06543	06.06.23	22.25	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT3-EW	Elizabeth Winstanley	Foraging	Foraging	
SO 05007 06543	06.06.23	22.26	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT3-EW	Elizabeth Winstanley	Foraging	Foraging	
SO 05007 06543	06.06.24	22.26	Bat	1	Merthyr Tydfil	Merthyr Upholstery	Building A (W)	LT1-NA	Nic Aldridge	Heard-not-seen	Poor quality recording.	
SO 05007 06543	06.06.23	22.27	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-SP	Sam Pattersson	Heard-not-seen		
SO 05007 06543	06.06.23	22.28	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT3-EW	Elizabeth Winstanley	Foraging	Foraging	
SO 05007 06543	06.06.23	22.44	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (W)	LT1-NA	Nic Aldridge	Foraging	Foraging	

NGR	DATE	Time	SPECIES (COMMON)	No	TOWN/VILLAGE	LOCATION	Surveyor's Position	Record number	OBSERVERS NAME	COMMENT	CLASS OF SITE	FINDINGS
SO 05007 06543	28.06.23	20.45	Bat droppings (Lesser horseshoe)	1	Merthyr Tydfil	Merthyr Upholstery	Building A (interior)	n/a	Nic Aldridge	1st floor	3x Droppings.	Near western wall, one third of the way from the southern gable.
SO 05007 06543	28.06.23	20.45	Bat droppings.	1	Merthyr Tydfil	Merthyr Upholstery	Building A (interior)	n/a	Nic Aldridge	1st floor	2x Droppings.	On stove, southern gable.
SO 05007 06543	28.06.23	20.45	Bat dropping (Pipistrelle type).	1	Merthyr Tydfil	Merthyr Upholstery	Building A (interior)	n/a	Nic Aldridge	2nd floor	1x dropping	On table.
SO 05007 06543	28.06.23	21.37	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (W)	LT3-NA	Nic Aldridge	Foraging in grounds.	Foraging.	
SO 05007 06543	28.06.23	21.38	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (W)	LT3-NA	Nic Aldridge	Foraging in grounds.	Foraging.	
SO 05007 06543	28.06.23	21.38	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Commuting over stream.	Commuting.	
SO 05007 06543	28.06.23	21.38	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Heard-not-seen	Full spectrum recording.	
SO 05007 06543	28.06.23	21.41	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	28.06.23	21.42	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Heard-not-seen. Full spectrum		

										recording.		
SO 05007 06543	28.06.23	21.43	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (W)	LT3-NA	Nic Aldridge	Foraging in grounds.	Foraging.	
SO 05007 06543	28.06.23	21.43	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Heard-not- seen. Full spectrum recording.		
SO 05007 06543	28.06.23	21.43	Common & Soprano Pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Heard-not- seen. Full spectrum recording.		
SO 05007 06543	28.06.23	21.44	Common & Soprano Pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Foraging around garden.	Foraging.	
SO 05007 06543	28.06.23	21.45	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	28.06.23	21.46	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Heard-not- seen	Full spectrum recording.	
SO 05007 06543	28.06.23	21.46	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Foraging on stream.	Foraging.	
SO 05007 06543	28.06.23	21.47	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	28.06.23	21.48	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	28.06.23	21.49	Common & Soprano Pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Foraging on stream.	Foraging.	
SO 05007 06543	28.06.23	21.50	Common & Soprano Pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Foraging on stream.	Foraging.	
SO 05007 06543	28.06.23	21.51	Common & Soprano Pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Foraging on stream.	Foraging.	
SO 05007 06543	28.06.23	21.51	Common & Soprano Pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Foraging on stream.	Foraging.	
SO 05007 06543	28.06.23	21.51	Common & Soprano Pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Foraging on stream.	Foraging.	
SO 05007 06543	28.06.23	21.51	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-EW	Elizabeth Winstanley	Foraging.	Foraging.	
SO 05007 06543	28.06.23	21.52	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Foraging on stream.	Foraging.	
SO 05007	28.06.23	21.53	Common	1	Merthyr Tydfil	Merthyr	Building A & B	LT1-YA	Yvette Amos	Foraging on	Foraging.	

06543			pipistrelle			Upholstery	(SE)			stream.		
SO 05007 06543	28.06.23	21.53	Common & Soprano Pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Foraging on stream.	Foraging.	
SO 05007 06543	28.06.23	21.54	Common & Soprano Pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Foraging on stream.	Foraging.	
SO 05007 06543	28.06.23	21.55	Common & Soprano Pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Foraging on stream.	Foraging.	
SO 05007 06543	28.06.23	21.56	Common pipistrelle, Soprano pipistrelle & Myotis spp.,	1	Merthyr Tydfil	Merthyr Upholstery	Building A (W)	LT3-NA	Nic Aldridge	Foraging in grounds.	Foraging.	
SO 05007 06543	28.06.23	21.58	Pipistrelle spp.,	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Heard-not- seen. Full spectrum recording.		
SO 05007 06543	28.06.23	21.59	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (W)	LT3-NA	Nic Aldridge	Foraging in grounds.	Foraging.	
SO 05007 06543	28.06.23	21.59	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-EW	Elizabeth Winstanley	Foraging.	Foraging.	
SO 05007 06543	28.06.23	22.00	Bat.	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Live Sighting	Foraging.	
SO 05007 06543	28.06.23	22.00	Common pipistrelle	2	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-EW	Elizabeth Winstanley	Foraging.	Foraging.	
SO 05007 06543	28.06.23	22.00	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-EW	Elizabeth Winstanley	Foraging.	Foraging.	
SO 05007 06543	28.06.23	22.04	Common & Soprano Pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Live Sighting	Foraging.	
SO 05007 06543	28.06.23	22.04	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-EW	Elizabeth Winstanley	Foraging.	Foraging.	
SO 05007 06543	28.06.23	22.08	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (W)	LT3-NA	Nic Aldridge	Foraging in grounds.	Foraging.	
SO 05007 06543	28.06.23	22.09	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Foraging on stream.	Foraging.	
SO 05007 06543	28.06.23	22.09	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-EW	Elizabeth Winstanley	Foraging.	Foraging.	
SO 05007 06543	28.06.23	22.10	Common & Soprano Pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Heard-not- seen. Full spectrum recording.		

SO 05007 06543	28.06.23	22.10	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-EW	Elizabeth Winstanley	Foraging.	Foraging.	
SO 05007 06543	28.06.23	22.13	Common & Soprano Pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Foraging on stream.	Foraging.	
SO 05007 06543	28.06.23	22.13	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-EW	Elizabeth Winstanley	Foraging.	Foraging.	
SO 05007 06543	28.06.23	22.15	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Heard-not- seen. Full spectrum recording.		
SO 05007 06543	28.06.23	22.15	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-EW	Elizabeth Winstanley	Foraging.	Foraging.	
SO 05007 06543	28.06.23	22.17	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Foraging on stream.	Foraging.	
SO 05007 06543	28.06.23	22.18	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-EW	Elizabeth Winstanley	Foraging.	Foraging.	
SO 05007 06543	28.06.23	22.20	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Foraging on stream.	Foraging.	
SO 05007 06543	28.06.23	22.20	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-EW	Elizabeth Winstanley	Foraging.	Foraging.	
SO 05007 06543	28.06.23	22.21	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Heard-not- seen. Full spectrum recording.		
SO 05007 06543	28.06.23	22.21	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-EW	Elizabeth Winstanley	Foraging.	Foraging.	
SO 05007 06543	28.06.23	22.23	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Heard-not- seen. Full spectrum recording.		
SO 05007 06543	28.06.23	22.23	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Commuting towards stream.	Commuting.	
SO 05007 06543	28.06.23	22.25	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Heard-not- seen	Full spectrum recording.	
SO 05007 06543	28.06.23	22.26	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Heard-not- seen	Full spectrum recording.	
SO 05007 06543	28.06.23	22.29	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Foraging on stream.	Foraging.	
SO 05007 06543	28.06.23	22.30	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Heard-not- seen. Full spectrum recording.		

SO 05007 06543	28.06.23	22.33	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Heard-not- seen. Full spectrum recording.		
SO 05007 06543	28.06.23	22.35	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Heard-not- seen. Full spectrum recording.		
SO 05007 06543	28.06.23	22.40	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A & B (SE)	LT1-YA	Yvette Amos	Heard-not- seen. Full spectrum recording.		

NGR	DATE	Time	SPECIES (COMMON)	No	TOWN/VILLAGE	LOCATION	Surveyor's Position	Record number	OBSERVERS NAME	COMMENT	CLASS OF SITE	Findings
SO 05007 06543	20.07.23	21.12	Bat.	1	Merthyr Tydfil	Merthyr Upholstery	Building A& B (SE)	LT3-TC	Tracey Cotterell	Commuting, circling over building towards NA.	Commuting.	
SO 05007 06543	20.07.23	21.14	Pipistrelle spp.,	1	Merthyr Tydfil	Merthyr Upholstery	Building A& B (SE)	LT3-TC	Tracey Cotterell	Commuting, circling over building towards NA.	Commuting.	
SO 05007 06543	20.07.23	21.15	Pipistrelle spp.,	1	Merthyr Tydfil	Merthyr Upholstery	Building A (W)	LT1-NA	Nic Aldridge	Commuting - single pass.	Commuting	
SO 05007 06543	20.07.23	21.16	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A& B (SE)	LT3-TC	Tracey Cotterell	Commuting from river towards NA.	Commuting.	
SO 05007 06543	20.07.23	21.17	Soprano pipistrelle	2	Merthyr Tydfil	Merthyr Upholstery	Building A (W)	LT1-NA	Nic Aldridge	Foraging - continued intermittently throughout the survey.	Foraging.	
SO 05007 06543	20.07.23	21.20	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A& B (SE)	LT3-TC	Tracey Cotterell	Commuting from river towards NA.	Commuting.	
SO 05007 06543	20.07.23	21.21	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A& B (SE)	LT3-TC	Tracey Cotterell	Commuting from river towards NA.	Commuting.	
SO 05007 06543	20.07.23	21.23	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Commuting.	Commuting.	
SO 05007 06543	20.07.23	21.28	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Commuting.	Commuting.	
SO 05007 06543	20.07.23	21.30	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Emergence, Northern gable -	Day roost.	

										from lintel above 2nd floor window (W).		
SO 05007 06543	20.07.23	21.32	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Emergence, Northern gable - from behind bargeboard, near damaged stonework.	Day roost.	
SO 05007 06543	20.07.23	21.36	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	20.07.23	21.38	Bat.	1	Merthyr Tydfil	Merthyr Upholstery	Building A& B (SE)	LT3-TC	Tracey Cotterell	Foraging	Foraging.	
SO 05007 06543	20.07.23	21.38	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	20.07.23	21.38	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	20.07.23	21.39	Bat.	1	Merthyr Tydfil	Merthyr Upholstery	Building A& B (SE)	LT3-TC	Tracey Cotterell	Foraging	Foraging.	
SO 05007 06543	20.07.23	21.39	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	20.07.23	21.40	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	20.07.23	21.41	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (W)	LT1-NA	Nic Aldridge	Foraging - around trees.	Foraging.	
SO 05007 06543	20.07.23	21.41	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	20.07.23	21.42	Bat.	1	Merthyr Tydfil	Merthyr Upholstery	Building A& B (SE)	LT3-TC	Tracey Cotterell	Foraging	Foraging.	
SO 05007 06543	20.07.23	21.43	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	20.07.23	21.44	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	20.07.23	21.45	(2) Common and Soprano pipistrelle.	1	Merthyr Tydfil	Merthyr Upholstery	Building A& B (SE)	LT3-TC	Tracey Cotterell	Foraging	Foraging.	
SO 05007 06543	20.07.23	21.45	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A& B (SE)	LT3-TC	Tracey Cotterell	Foraging	Foraging.	
SO 05007 06543	20.07.23	21.45	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	20.07.23	21.46	Bat.	1	Merthyr Tydfil	Merthyr Upholstery	Building A& B (SE)	LT3-TC	Tracey Cotterell	Foraging	Foraging.	
SO 05007 06543	20.07.23	21.46	(2) Common & Soprano	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	

			pipistrelle									
SO 05007 06543	20.07.23	21.46	(2) Common & Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	20.07.23	21.48	(2) Common & Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	20.07.23	21.49	Bat.	1	Merthyr Tydfil	Merthyr Upholstery	Building A& B (SE)	LT3-TC	Tracey Cotterell	Foraging	Foraging.	
SO 05007 06543	20.07.23	21.50	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	20.07.23	21.52	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	20.07.23	21.53	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A& B (SE)	LT3-TC	Tracey Cotterell	Foraging	Foraging.	
SO 05007 06543	20.07.23	21.54	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	20.07.23	21.57	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A& B (SE)	LT3-TC	Tracey Cotterell	Foraging	Foraging.	
SO 05007 06543	20.07.23	21.57	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	20.07.23	21.58	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	20.07.23	22.00	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	20.07.23	22.05	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	20.07.23	22.08	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A& B (SE)	LT3-TC	Tracey Cotterell	Foraging	Foraging.	
SO 05007 06543	20.07.23	22.08	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	20.07.23	22.12	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	20.07.23	22.15	Common pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A& B (SE)	LT3-TC	Tracey Cotterell	Foraging	Foraging.	
SO 05007 06543	20.07.23	22.18	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A& B (SE)	LT3-TC	Tracey Cotterell	Foraging	Foraging.	
SO 05007 06543	20.07.23	22.21	Pipistrelle spp.,	1	Merthyr Tydfil	Merthyr Upholstery	Building A& B (SE)	LT3-TC	Tracey Cotterell	Foraging	Foraging.	
SO 05007 06543	20.07.23	22.21	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	20.07.23	22.22	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	

SO 05007 06543	20.07.23	22.23	(2) Common & Soprano pipistrelle.	1	Merthyr Tydfil	Merthyr Upholstery	Building A& B (SE)	LT3-TC	Tracey Cotterell	Heard-not-seen. Full spectrum recording.		
SO 05007 06543	20.07.23	22.24	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	20.07.23	22.26	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Commuting.	Commuting.	
SO 05007 06543	20.07.23	22.27	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	20.07.23	22.29	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	20.07.23	22.30	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	
SO 05007 06543	20.07.23	22.30	Soprano pipistrelle	1	Merthyr Tydfil	Merthyr Upholstery	Building A (NE)	LT2-YA	Yvette Amos	Foraging.	Foraging.	

H. Static Survey Results (Raw Data)

Location	Date	Equipment	Notes Species Recorded (Common Name)
Building A - Ground Floor Internal	25.07.23	Audiomoth Full Spectrum Recorder	No Evidence of Roosting bats.
Building A - Ground Floor Internal	26.07.23	Audiomoth Full Spectrum Recorder	No Evidence of Roosting bats.
Building A - Ground Floor Internal	27.07.23	Audiomoth Full Spectrum Recorder	No Evidence of Roosting bats.
Building A - Ground Floor Internal	28.07.23	Audiomoth Full Spectrum Recorder	No Evidence of Roosting bats.
Building A - Ground Floor Internal	29.07.23	Audiomoth Full Spectrum Recorder	No Evidence of Roosting bats.
Building A - Ground Floor Internal	30.07.23	Audiomoth Full Spectrum Recorder	No Evidence of Roosting bats.
Building A - Ground Floor Internal	31.07.23	Audiomoth Full Spectrum Recorder	No Evidence of Roosting bats.
Building A - Ground Floor Internal	01.08.23	Audiomoth Full Spectrum Recorder	No Evidence of Roosting bats.
Building A - Ground Floor Internal	02.08.23	Audiomoth Full Spectrum Recorder	No Evidence of Roosting bats.
Building A - Ground Floor Internal	03.08.23	Audiomoth Full Spectrum Recorder	No Evidence of Roosting bats.
Building A - Ground Floor Internal	04.08.23	Audiomoth Full Spectrum Recorder	No Evidence of Roosting bats.
Building A - Ground Floor Internal	05.08.23	Audiomoth Full Spectrum Recorder	No Evidence of Roosting bats.
Building A - Ground Floor Internal	06.08.23	Audiomoth Full Spectrum Recorder	No Evidence of Roosting bats.
Building A - Ground Floor Internal	07.08.23	Audiomoth Full Spectrum Recorder	No Evidence of Roosting bats.
Building A - Ground Floor Internal	25.07.23	Audiomoth Full Spectrum Recorder	No Evidence of Roosting bats.
Building A - 1st Floor Internal	06.06.23	Anabat SD2	Weak recording of a common pipistrelle between 02.01hrs-02.19hrs, considered foraging.
Building A - 1st Floor Internal	07.06.23	Anabat SD3	sop clutter 22.57 cpip 04.08, 04.27
Building A - 1st Floor Internal	08.06.23	Anabat SD4	Common pipistrelle recorded between 21.53 - 23.14hrs and 04.04hrs, considered foraging. A weak recording of a soprano pipistrelle recorded between 01.27hrs - 02.20hrs, considered foraging.
Building A - 1st Floor Internal	09.06.23	Anabat SD5	No evidence of roosting bats.
Building A - 1st Floor Internal	10.06.23	Anabat SD6	No evidence of roosting bats.
Building A - 1st Floor Internal	11.06.23	Anabat SD7	No evidence of roosting bats.
Building A - 1st Floor Internal	12.06.23	Anabat SD8	Soprano pipistrelle 23.55
Building A - 1st Floor Internal	13.06.23	Anabat SD9	Weak recording of a soprano pipistrelle between 00.34hrs - 00.46hrs, 01.26hrs - 01.56hrs and 03.08hrs - 03.29hrs, considered foraging.
Building A - 1st Floor Internal	14.06.23	Anabat SD10	Soprano pipistrelle recorded at 00.58hrs and between 02.41hrs - 02.54hrs.
Building A - 1st Floor Internal	15.06.23	Anabat SD11	Common pipistrelle - 21.59hrs. Soprano pipistrelle - 03.20hrs.
Building A - 1st Floor Internal	16.06.23	Anabat SD12	Soprano pipistrelle 03.10hrs.
Building A - 1st Floor Internal	17.06.23	Anabat SD13	common pipistrelle - 21.57hrs Weak recording of soprano pipistrelle at 23.43hrs and 23.44hrs considered distant.
Building A - 1st Floor Internal	18.06.23	Anabat SD14	Soprano pipistrelle 02.17hrs, considered foraging
Building A - 1st Floor Internal	19.06.23	Anabat SD15	No evidence of roosting bats.

Building A - 2nd Floor Internal	20.07.23	Audiomoth Full Spectrum Recorder	No evidence of roosting bats.
Building A - 2nd Floor Internal	21.07.23	Audiomoth Full Spectrum Recorder	No evidence of roosting bats.
Building A - 2nd Floor Internal	22.07.23	Audiomoth Full Spectrum Recorder	No evidence of roosting bats.
Building A - 2nd Floor Internal	23.07.23	Audiomoth Full Spectrum Recorder	Soprano pipistrelle (21.05hrs, 21.06hrs, 21.23hrs).
Building A - 2nd Floor Internal	24.07.23	Audiomoth Full Spectrum Recorder	Soprano pipistrelle (Nine recordings made between; 05.06hrs, 05.17hrs).
Building A - 2nd Floor Internal	25.07.23	Audiomoth Full Spectrum Recorder	No evidence of roosting bats.
Building A - 2nd Floor Internal	26.07.23	Audiomoth Full Spectrum Recorder	Soprano pipistrelle (22.46hrs).
Building A - 2nd Floor Internal	27.07.23	Audiomoth Full Spectrum Recorder	Soprano pipistrelle (02.033hrs)????
Building A - 2nd Floor Internal	28.07.23	Audiomoth Full Spectrum Recorder	No evidence of roosting bats.
Building A - 2nd Floor Internal	29.07.23	Audiomoth Full Spectrum Recorder	Nil - Recording Fault
Building A - 2nd Floor Internal	30.07.23	Audiomoth Full Spectrum Recorder	Nil - Recording Fault
Building A - 2nd Floor Internal	31.07.23	Audiomoth Full Spectrum Recorder	Nil - Recording Fault
Building A - 2nd Floor Internal	01.08.23	Audiomoth Full Spectrum Recorder	Nil - Recording Fault
Building A - 2nd Floor Internal	02.08.23	Audiomoth Full Spectrum Recorder	Nil - Recording Fault
Building B Internal	28.06.23	Audiomoth Full Spectrum Recorder	No evidence of roosting bats
Building B Internal	29.06.23	Audiomoth Full Spectrum Recorder	No evidence of roosting bats
Building B Internal	30.06.23	Audiomoth Full Spectrum Recorder	No evidence of roosting bats
Building B Internal	01.06.23	Audiomoth Full Spectrum Recorder	No evidence of roosting bats
Building B Internal	02.06.23	Audiomoth Full Spectrum Recorder	No evidence of roosting bats
Building B Internal	03.06.23	Audiomoth Full Spectrum Recorder	No evidence of roosting bats
Building B Internal	04.06.23	Audiomoth Full Spectrum Recorder	No evidence of roosting bats
Building B Internal	05.06.23	Audiomoth Full Spectrum Recorder	No evidence of roosting bats
Building B Internal	06.06.23	Audiomoth Full Spectrum Recorder	No evidence of roosting bats
Building B Internal	07.06.23	Audiomoth Full Spectrum Recorder	No evidence of roosting bats
Building B Internal	08.06.23	Audiomoth Full Spectrum Recorder	No evidence of roosting bats
Building B Internal	09.06.23	Audiomoth Full Spectrum Recorder	No evidence of roosting bats
Building B Internal	10.06.23	Audiomoth Full Spectrum Recorder	No evidence of roosting bats
Building B Internal	11.06.23	Audiomoth Full Spectrum Recorder	No evidence of roosting bats



Copyright & Intellectual Property Rights

This document has been produced by Little Wing Ecology CYF (a company limited by guarantee). It may not be used by any person for any other purpose other than that specified without the express written permission of Little Wing Ecology CYF. Any liability arising out of use by a third party of this document, for purposes not wholly connected with the above, shall be the responsibility of that party, who shall indemnify Little Wing Ecology CYF against all claims, costs, damages, and losses, arising out of such use. Unless specifically assigned or transferred within the terms of the agreement, the consultant asserts and retains all copyright, and other intellectual property rights, in and over the document and its contents. We confirm that in preparing this document we have exercised reasonable skill and care, considering the project objectives, the agreed scope of the work, prevailing site conditions, the degree of manpower and resources allocated to the project, and in compliance with national guidelines for best practice. This document is valid for a period of two years from the front cover date.

Produced by: **Little Wing Ecology CYF** (A Not-for-profit Company Ltd by Guarantee)
Company no: **13743223**
Address: **24 Stryd Alma, Brynmawr**, Blaenau Gwent, NP234 DY
Email: **nic@littlewingecology.cymru**
Telephone: **07985 395251**

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



Cynhyrchwyd gan:
Rhif Cwmni:
Address:
e-bost:
Telephone:

Little Wing Ecology CYF (di-elw wedi'i gyfyngu gan warant)
13743223
24 Stryd Alma, Brynmawr, Blaenau Gwent, NP234 DY
nic@littlewingecology.cymru
07985395251