

A Preliminary Roost Assessment
on behalf of

Mr. Liam Sullivan
for
7 Somerset Close
Cefn-coed-y-cymmer
Merthyr Tydfil
CF48 2NY



January 2023

Produced by: **Little Wing Ecology CYF** (A Not-for-profit Company Limited by Guarantee)
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Executive Summary

Summary	Little Wing Ecology (CYF) was commissioned to undertake a Preliminary Roost Assessment of a site known as '7 Somerset Close, Cefn-coed-y-cymmer, Merthyr Tydfil, CF48 2NY' 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, this structure will be referred to as, 'Building A.'
Proposed Development	Planning permission is sought for a double height extension of Building A, replacing the existing roof structure with a full-height dormer. Building A is unoccupied. The proposed development will impact all elevations.
About the Site	Building A occupies a residential plot of approximately 45m x 20m and the structure represent a single storey, brick built, late-20th century detached property. The Site is situated off a main service road (Somerset Close), and ≈220m north of the A465 (Heads of the valleys road), within the northern portion of the settlement of Cefn-coed-y-cymmer, 2km north of Merthyr Tydfil town centre. Roofing materials consist of concrete tiles with uPVC soffits/fascias and uPVC guttering. Habitats in the immediate vicinity of the structure is mixed, comprising other buildings, and made surfaces, such as roads and pavements, in addition to urban gardens which include hedgerows and several standard deciduous trees. Artificial lighting is located adjacent to Building A (and adjacent properties) and impacts all elevations.
Results	A Preliminary Roost Assessment (PRA) confirmed a single gap in the external fabric of Building A. The resultant assessment, based on best practice guidance, recorded that this feature offers access to the interior space, between the breathable membrane and the underside of the concrete tiles. However, while the proportions of this space are suitable for roosting bats, the materials and aspect are not (see section 4). In addition, there is photographic evidence that the tiles were intact in 2021 and the home-owner reports that the damage has occurred in the last few months, drastically reducing the likelihood of bat interest at this location. It is therefore considered that this structure returns a negligible result for supporting a bat roost and that a roost site is likely absent for this location. This must be accompanied by a cautionary note; 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. Taking the conclusions of this report into consideration, bat roosts are considered likely absent from the structure. Bat interest at Building A is considered to be of negligible conservation significance (Mitchell-Jones 2004) with breeding bats, not a concern. It is therefore considered that there are no specific restrictions or limitations, and works may continue as planned.
Other Ecological Considerations	No records were made for nesting birds having previously used Building A. Due to the feature identified in the preliminary roost assessment, a cautionary approach is recommended. Due to the quality of the adjacent habitat, it is considered that the proposed works would benefit from the inclusion of artificial roost boxes on the southern elevation (see section 5).
Recommendations	<u>Recommendation 1 (Lighting During Development):</u> 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 should be restricted during the development period to that which is necessary for safety and security. This should be kept to a minimum. <u>Recommendation 2 (Post Development Lighting Scheme):</u> To prevent any adverse impact upon the potential roosting, commuting and foraging habitats for bats adjacent to Building A, the lighting plan 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 should 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 SINCs). <u>Recommendation 3 (Nesting Birds):</u> 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). <u>Recommendation 4 (Post Development Enhancements):</u> The inclusion of features suitable for roosting bats to be included in the plans on the southern elevation (i.e., x2 Soffit Bat Boxes - Table 5.1 – Figure 5).
This Executive Summary is intended to provide an overview of the assessment of the 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.	

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SECTION ONE: INTRODUCTION

1.1 Background

- 1.1.1 Little Wing Ecology (CYF) was commissioned to undertake a Preliminary Roost Assessment of a site known as '7 Somerset Close, Cefn-coed-y-cymmer, Merthyr Tydfil, CF48 2NY'. 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, this structure will be referred to as, 'Building A.'
- 1.1.2 This report contains the results from an examination of the the interior and exterior of the structure and its associated habitat. Following this examination, 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 such as additional survey work and enhancement features, to improve opportunities for local species post-development.
- 1.1.3 Building A is positioned at grid reference SO 03155 08358 (Figure 1).

1.2 Proposed Works

- 1.2.1 Planning permission is sought for a double height extension of Building A, replacing the existing roof structure with a full-height dormer. Building A is unoccupied. The proposed development will impact all elevations (Figure 3).

1.3 Site Description

- 1.3.1 Building A occupies a residential plot of approximately 45m x 20m and the structure represent a single storey, brick built, late-20th century detached property. The Site is situated off a main service road (Somerset Close), and ≈220m north of the A465 (Heads of the valleys road), within the northern portion of the settlement of Cefn-coed-y-cymmer, 2km north of Merthyr Tydfil town centre.
- 1.3.2 Roofing materials consist of concrete tiles with uPVC soffits/fascias and uPVC guttering. Habitats in the immediate vicinity of the structure is mixed, comprising other buildings, and made surfaces, such as roads and pavements, in addition to urban gardens which include hedgerows and several standard deciduous trees.
- 1.3.3 Artificial lighting is located adjacent to Building A (and adjacent properties) and impacts all elevations.
- 1.3.4 Near-continuous urban development extends to the south and south-east of Building A.
- 1.3.5 The Brecon Beacon National Park is located ≈460m west of Building A and dominates the landscape to the north.

1.4 Policy and Legislation

- 1.4.1 In Britain, 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 Nesting and nest-building birds are protected under the Wildlife and Countryside Act WCA 1981 (as amended). Some species (listed in Schedule 1 of the WCA) are protected by special penalties.
- 1.4.3 Subject to the provisions of the Act if any person intentionally:
- Kills, injures or takes any wild bird.
 - Takes, damages or destroys the nest of any wild bird while that nest is in use or being built.
 - Takes or destroys an egg of any wild bird.
- 1.4.4 The Natural Environment and Rural Communities (NERC) Act 2006 places a duty on Government Departments to have regard for the conservation of biodiversity and maintains lists of species and habitats which are of principal importance for the purposes of conserving biodiversity in England and Wales. These lists include a number of bird species.
- 1.4.5 In addition to this, some rarer species, such as barn owls are afforded extra protection. Please refer to the original legislation for the definitive interpretation.
- 1.4.6 The framework for this protection is provided within three pieces of legislation from the Government of Wales and the UK Government.
- 1.4.7 These are:
- The Conservation of Habitats and Species Regulations (2017) - as amended.
 - The Environment (Wales) Act 2016.
 - The Wildlife and Countryside Act (1981) - as amended.
- 1.4.8 Additional information on the legal scope of these acts can be found in Table 1.2 (below) and a link to the full documentation can be found in, 'References and Bibliography.'

1.5 Survey Aims & Objectives

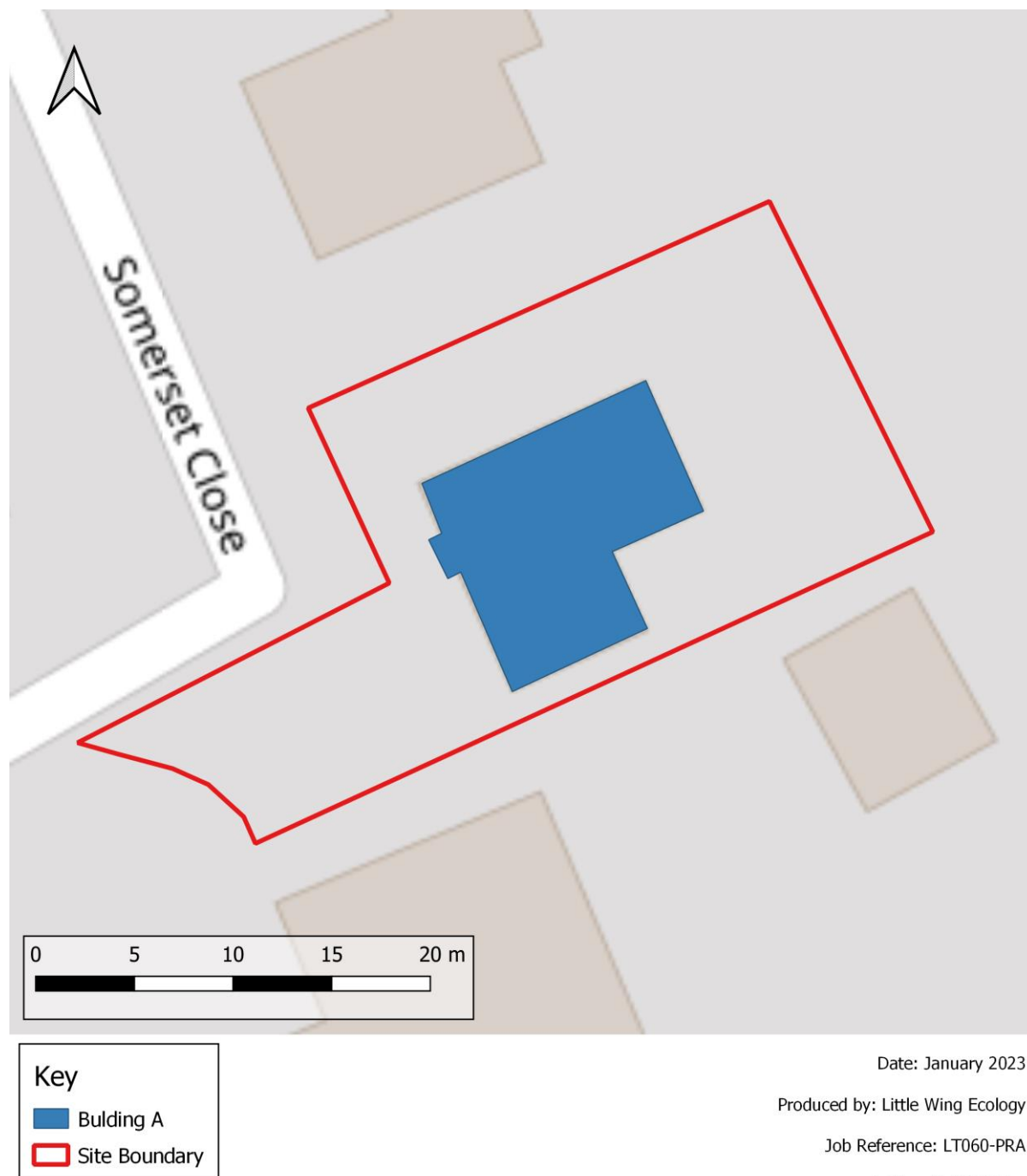
- 1.5.1 Considering this legal framework and local planning requirements, the objectives of this survey were to:
- Determine if bat roosts are present or likely to be present in Building A.
 - Consider if nesting birds are present - which might be affected by the development proposals.
 - Gather sufficient information to be able to make appropriate recommendations, inform any constraints, and associated planning requirements.



Author: N S Aldridge

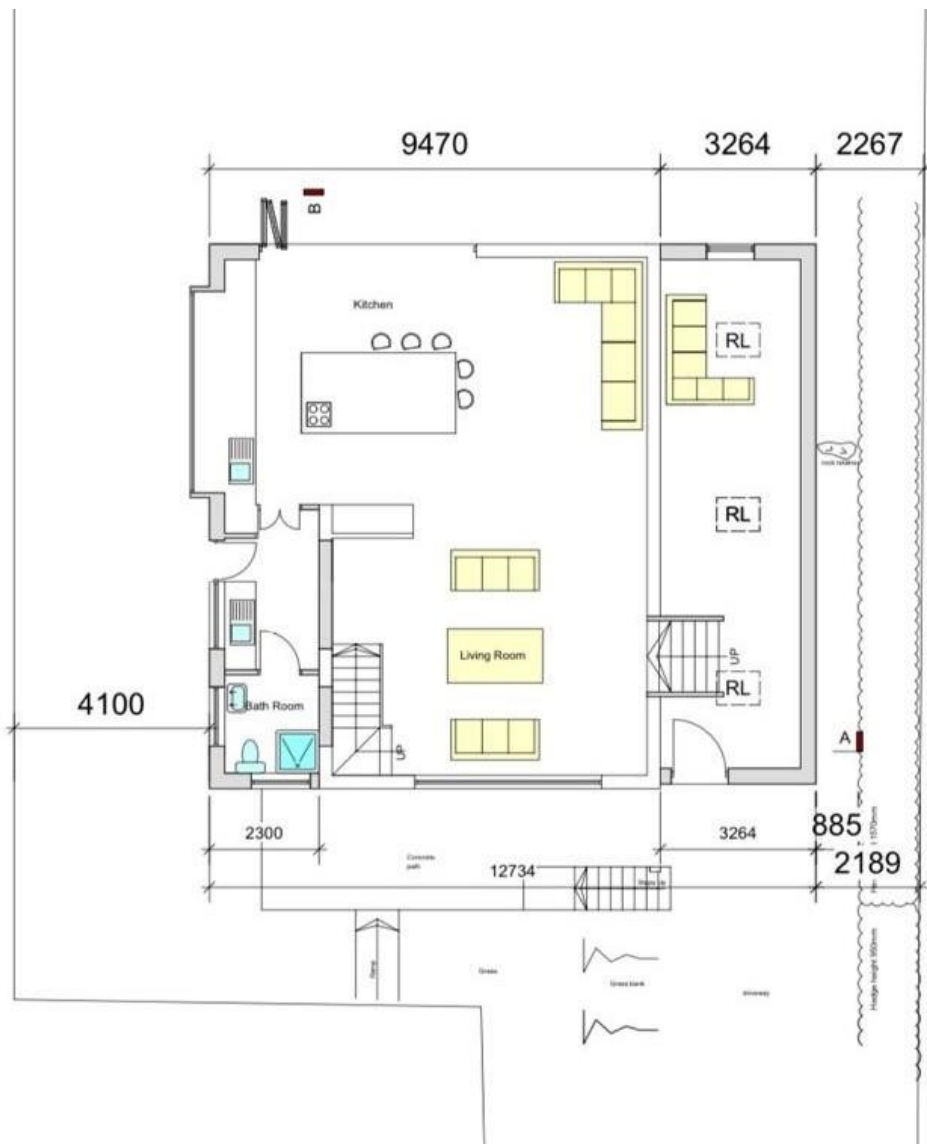
LITTLE WING ECOLOGY (CYF) LT060-PRA

Figure 2: A Site Plan



QGIS Development Team, <2022>. QGIS Geographic Information System. Open-Source Geospatial Foundation Project.
<http://qgis.osgeo.org>.

Figure 3: Proposed Development



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Photographs		Description
 		Photograph 1: Eastern Elevation: Building A – This elevation faces a lawned garden area. Taken from the east, looking west.
		Photograph 2: Northern Elevation: Building A – This elevation faces a lawned garden area. Taken from the northeast, looking southwest.
 		Photograph 3: Western Elevation: Building A – This elevation faces a lawned garden area and main service road. Taken from the west and northwest.
 		Photograph 4: Southern Elevation: Building A – This elevation faces a small lawned garden and which is separated from an neighbouring garden by a well kempt privet hedge. A single storey extension houses a garage space. Taken from the south-east.

Table 1.1: Site Photographs

Policy	Description
Conservation of Habitats and Species Regulations 2017 (as amended)	Bats are specifically protected by the Conservation of Habitats and Species Regulations 2017 (as amended) (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 2 Page 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.

Table 1.2: Bats and The Law: Legislation in Wales and the UK

SECTION TWO: THE SURVEY METHOD

2.1 Desktop Survey: Bats

- 2.1.1 Available records of bats were collated from the local record centre, the South East Wales Biodiversity Records Centre (SEWBRc), along with any non-statutory designated sites known to support bat species, within a 2 km radius of the site, in October 2022. A search for statutory sites designated for bats within 10 km the site was performed using the Multi-Agency Geographic Information for the Countryside (MAGIC) website.

2.2 Desktop Survey: Habitat

- 2.2.1 A review of aerial photography was undertaken to assess the provision of suitable foraging and commuting habitat within proximity to Building A. This information was used in combination with a review of statutory designated sites, via the MAGIC website, including Special Areas of Conservation (SAC) and Sites of Special Scientific Interest (SSSI) to help in confirming the presence of bat species locally.
- 2.2.2 Satellite Image: Figure 4.
- 2.2.3 Bats are considered cryptic species and therefore it can be difficult to confirm whether they are present or not. Although the provision of a Local Environmental Records Centre data search 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 Survey Details

Survey Date(s): Wednesday 24th January 2023 and Thursday 2nd February 2023
Surveyor(s): N. S. Aldridge (a Natural Resources Wales [NRW] licenced bat worker)
Surveyor(s) Details: Table 2.1
Weather conditions: Table 3.6

- 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 Building A by Nic Aldridge, a Natural Resources Wales (NRW) licenced bat worker. Nic has over six years of experience in surveying bats throughout Wales, specialising in surveying buildings for residential extensions and barn conversions (Table 2.1).
- 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 using the Beaufort wind force scale and the Okta scale of cloud cover (see Table 3.6 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.

2.6 Limitations of the Survey Method

- 2.6.1 During the initial visit (24.01.23) snow covered the roof on the northern elevation of Building A. Subsequent an additional visit was arranged to document this feature (02.02.23).
- 2.6.2 No additional limitations were recorded during the field survey.
- 2.6.3 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.

2.7 Meet Our Survey Team

Name / Licence	Experience
Nicholas Aldridge (BSc (Hons), MSc., & PGCE) Ecologist with Little Wing Ecology NRW Bat Licence: S091427/1 (22nd July 2022 - 21st July 2024).	Nic Aldridge is the lead 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 six 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.

Table 2.1: The Survey Team

Figure 4: Satellite Image Showing the Site Location in Relation to the Local Environment



Key

● Site Marker

Date: January 2023

Produced by: Little Wing Ecology

Job Reference: LT060-PRA

Author: N S Aldridge

QGIS Development Team, <2022>. QGIS Geographic Information System. Open-Source Geospatial Foundation Project.
<http://qgis.osgeo.org>.

SECTION THREE: RESULTS**3.1 Desktop Survey Results**

3.1.1 During the Preliminary Roost Assessment (PRA) a request was placed with the South East Wales Biodiversity Records Centre (SEWBRc) for records of bat and bird species within the local vicinity of the proposed development site along with records of statutory and non-statutory sites (within 1km). In addition, the survey location was examined by consulting Magic Map. No part of the site contains, or is within, any statutory sites of nature conservation interest, such as a Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC), National Nature Reserves (NNRs) or Local Nature Reserves (LNRs) etc.

3.1.2 LERC Reference: 0223-817

3.1.3 N.B. Due to the nature and proximity of this site to local habitat features, care was taken to identify foraging and commuting potential and identify connectivity with the surrounding habitat.

3.1.4 There are no Sites of Species Scientific Interest (SSSIs) on or adjacent to the site. The nearest SSSI are 'Cwm Tâf Fechan Woodland,' which is located ≈220m east of Building A and 'Cwm Cadlan,' which is located ≈6.6km west of Building A. Two SINCs are located close to Building A, 'afon Tâf Fechan,' ≈70m south and the Afon Tâf ≈460m west of Building A. A summary of statutory, non-statutory sites and local habitat features are presented below.

3.1.5 Fragmented broadleaved woodlands are scattered throughout the settlement of Merthyr Tydfil. the closest and most significant locally is located ≈200m to the east of Building A, on the banks of the afon Tâf Fechan (SINC). Additional woodland is located on the banks of the Afon Tâf (SINC) ≈460m west of Building A. Both of these features form significant linear features in the landscape and provide connectivity north and south through the settlement of Merthyr Tydfil, and to the wider landscape.

Name	Designation	Distance (metres)	Connectivity
Cwm Tâf Fechan Woodland	SSSI	≈220m	High
Brecon Beacons Nation Park	National Park	≈460m	High

Table 3.1: Statutory Sites within 1km of the Site

Name	Designation	Distance (metres)	Connectivity
afon Tâf Fechan	SINC	≈260	High
Afon Tâf	SINC	≈460m	High
Beelines Designation	Conservation initiative	On-site	High

Table 3.2: Non-Statutory Sites within 1km of the Site

Description	Notes	Distance (metres)	Connectivity
Broadleaved woodland	Fragmented broadleaved woodlands are scattered throughout the settlement of Merthyr Tydfil. the closest and most significant locally is located ≈200m to the east of Building A, on the banks of the afon Tâf Fechan (SSSI & SINC). Additional woodland is located on the banks of the Afon Tâf (SINC) ≈460m west of Building A. Both features form significant linear features in the landscape and provide connectivity north and south through the settlement of Merthyr Tydfil, and to the wider landscape.	<200m	High
Afon Tâf Fechan	The Afon Tâf Fechan is located approximately 260m west of the site. This forms a significant linear feature in the landscape and provides connectivity north and south through the settlement of Merthyr Tydfil and to the wider landscape.	>250m	High
Afon Tâf	Located ≈460m west of the Site is the Afon Tâf.	>450km	High

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	This forms a significant linear feature in the landscape and provides connectivity north and south through the settlement of Cwmbran and to the wider landscape.		
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Table 3.3: Local Habitat Features within 1km of the Site

3.2 Species Records

3.2.1 The local biodiversity records provided by SEWBReC returned 424 species records including 415 records for bat species and 9 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 seven records for bat species within 500m of Building A.

Species Group	Species / Notes	Number of Records			Nearest Distance from Site	Connectivity
		On-site	<500 m	0.5-1km		
Bats	Chiroptera (Bat) CAT1	0	11	5	106	High
	Myotis daubentonii (Daubenton's Bat) CAT1	0	6	4	<360	Moderate
	Myotis (Myotis Bat species) CAT1	0	6	15	222	Moderate
	Myotis nattereri (Natterer's Bat) CAT1	0	4	4	222	High
	Nyctalus noctula (Noctule Bat) CAT1	0	3	0	193	High
	Pipistrellus pipistrellus (Common Pipistrelle) CAT1	0	16	47	750m	Moderate
	Pipistrellus pygmaeus (Soprano Pipistrelle) CAT1	0	10	19	193	High
	Plecotus auritus (Brown Long-eared Bat) CAT1	0	4	0	215	High
	Rhinolophus ferrumequinum (Greater horseshoe) CAT1	0	0	1	942	Moderate
	Rhinolophus hipposideros (Lesser horseshoe) CAT1	0	1	7	285	High
Birds	CAT1	0	3	0	373	Moderate
	CAT2	0	1	0	373	Moderate
	CAT3	0	4	0	195	High

Table 3.4: Local Records for Bat and Bird Species within 1km of the Site

3.3 Preliminary Roost Assessment

Description	Potential Nest and Roost Assessment	Evidence	Assessment	
<u>Building A: Southern Elevation</u> <u>Roofing Materials</u> 7 Somerset Close Private residence A single-storey brick-built structure with a cement mortar, concrete roof tiles and breathable roofing membrane. A single-storey brick-built garage with a cement mortar, uPVC fixtures and a sheet metal roof.	No significant gaps were recorded on the exterior of the southern elevation. All exterior fixtures were well sealed and in good order. 	No evidence of nesting birds or roosting bats.	Negligible (Bats) Negligible risk (birds)	
<u>Building A: Southern Elevation</u> <u>Ridge</u> 7 Somerset Close Private residence A single-storey brick-built structure with a cement mortar, concrete roof tiles and breathable roofing membrane.	A dry ridge system is fitted to Building A. This is formed of a plastic seal which is adhered to the concrete tiles and restricts access to the roof space. While there is a cavity between the plastic seal and the underside of the ridge tile, this is not considered to offer a suitable roosting location i.e., roosting is unlikely/likely-absent. The space is larger than is preferred by crevice dwelling species, too small for free hanging species and the top of the plastic seal is often covered with ridges/spines.	No evidence of nesting birds or roosting bats.	Negligible (Bats) Negligible (birds)	

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<u>Building A: Southern Elevation</u> <u>Soffits and Facias</u> 7 Somerset Close Private residence A single-storey brick-built structure with a cement mortar, concrete roof tiles and breathable roofing membrane. A single-storey brick-built garage with a cement mortar, uPVC fixtures and a sheet metal roof.	No significant gaps were recorded on the exterior of the southern elevation. All exterior fixtures were well sealed and in good order. The gap between the corrugated sheet metal roofing and the wall plate is sealed internally, restricting access to the interior of the structure. 	No evidence of nesting birds or roosting bats.	Negligible (Bats) Negligible (birds)	
<u>Building A: Western Elevation</u> <u>Soffits and Facias</u> 7 Somerset Close Private residence A single-storey brick-built structure with a cement mortar, concrete roof tiles and breathable roofing membrane. A single-storey brick-built garage with a cement mortar, uPVC fixtures and a sheet metal roof.	No significant gaps were recorded on the exterior of this elevation. All exterior fixtures were well sealed and in good order. 	No evidence of nesting birds or roosting bats.	Negligible (Bats) Negligible (birds)	

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[illegible]

	 			
<u>Building A: Interior</u> <u>Main Building</u> 7 Somerset Close Private residence A single-storey brick-built structure with a cement mortar, concrete roof tiles and breathable roofing membrane.	A hand-cut, king post roof structure was present. The interior of Building A has been stripped out in preparation for re-development. There was a ridge-board in place and the breathable membrane is exposed to the underside. No gaps or openings to the exterior were recorded.  	No evidence of nesting birds or roosting bats.	Negligible (Bats) Negligible (birds)	

<u>Building A: Interior</u> <u>Garage</u> 7 Somerset Close A garage A single-storey brick-built garage with a cement mortar, uPVC fixtures and a sheet metal roof.	A simple hand-cut roof was present. No gaps or openings to the exterior were recorded. Gaps between the underside of the corrugated roofing material and the top of the wall plate were well sealed (see photograph). 	No evidence of nesting birds or roosting bats.	Negligible (Bats) Negligible (birds)	
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Table 3.5: Preliminary Roost Assessment

3.4 Field Survey Details & Weather Conditions

3.4.1 The field survey was conducted outside of the breeding season. An active bat population prefers temperatures exceeding 10°C with low wind speeds.

Date	Survey Type	Surveyor	Variable	Start	End
14.12.2022	Site inspection Preliminary roost assessment Interior and exterior	N S Aldridge	Survey Times (BST)	09.45	11.10
			Temperature (°C)	10.0	10.2
			Cloud Cover (Oktas)	6	6
			Wind (Beaufort scale)	F3	F3
			Humidity	42	45
			Precipitation (%)	Nil	Nil
14.12.2022	Site inspection Preliminary roost assessment Exterior and garage space	N S Aldridge	Survey Times (BST)	16.30	17.00
			Temperature (°C)	10.2	10.2
			Cloud Cover (Oktas)	8	8
			Wind (Beaufort scale)	F3	F3
			Humidity	85	87
			Precipitation (%)	Nil	Nil

Table 3.6: Field Survey Details – Weather, Time & Temperature

3.5 Suitability for Hibernating Bats

3.5.1 Using a degree of academic supposition, the features identified within the PRA are not considered to be suitable at offering the hibernating conditions that bats prefer.

3.5.2 However, taking a precautionary approach Pipistrelle species are known to hibernate in buildings and this will need to be taken into consideration.

3.6 Risk Assessment Summary

3.6.1 A Preliminary Roost Assessment (PRA) confirmed a single gap in the external fabric of Building A. This was a group of broken tiles on the northern elevation of the roof. This feature offers access to the interior space, between the breathable membrane and the underside of the concrete tiles. However, while the proportions of this space are suitable for roosting bats, the materials are not. Although not legitimately confirmed through peer-reviewed research (to date), anecdotal evidence strongly suggests that bats become trapped in the fibre weave of breathable roof membranes. In addition, it is considered the microclimate provided by this material (temperature and humidity) is not conducive to successful roosting. Ongoing research between the Bat Conservation Trust and Reading University is aimed at improving our understanding of these issues (BCT – undated). Furthermore, the north-facing aspect of this location reduces the suitability of this feature. While it cannot be stated that bats could not use this feature, it is considered unlikely in this instance.

3.6.2 It is therefore considered that this structure returns a negligible result for supporting a bat roost and that a roost site is likely absent for this location. This must be accompanied by a cautionary note; 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.

3.7 Nesting Birds

3.7.1 No records were made for nesting birds having previously used Building A.

3.8 Additional Ecological Constraints

3.8.1 The surrounding gardens provide potential use for roosting and foraging bats. Several large mature trees are located within the gardens of neighbouring properties and well-maintained hedgerows and garden boundaries provide suitable features for commuting and foraging bats (in addition to nesting opportunities for many bird species).

SECTION FOUR: DISCUSSION & CONCLUSIONS

- 4.1.1 **The Structure:** Building A occupies a residential plot of approximately 45m x 20m and the structure represent a single storey, brick built, late-20th century detached property. The Site is situated off a main service road (Somerset Close), and ≈220m north of the A465 (Heads of the valleys road), within the northern portion of the settlement of Cefn-coed-y-cymmer, 2km north of Merthyr Tydfil town centre. Roofing materials consist of concrete tiles with uPVC soffits/fascias and uPVC guttering. Artificial lighting is located adjacent to Building A (and adjacent properties) and impacts all elevations. Near-continuous urban development extends to the south and south-east of Building A.
- 4.1.2 **Local Records:** The local biodiversity records provided by SEWBRc returned 424 species records including 415 records for bat species and 9 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 seven records for bat species within 500m of Building A.
- 4.1.3 **Statutory and Non-statutory Sites:** There are no Sites of Species Scientific Interest (SSSIs) on or adjacent to the site. The nearest SSSI are 'Cwm Tâf Fechan Woodland,' which is located ≈220m east of Building A and 'Cwm Cadlan,' which is located ≈6.6km west of Building A. Two SINC are located close to Building A, 'afon Tâf Fechan,' ≈70m south and the Afon Tâf ≈460m west of Building A.
- 4.1.4 **Habitat & Connectivity:** Habitats in the immediate vicinity of the structure is mixed, comprising other buildings, and made surfaces, such as roads and pavements, in addition to urban gardens which include hedgerows and several standard deciduous trees.
- 4.1.5 Fragmented broadleaved woodlands are scattered throughout the settlement of Merthyr Tydfil. the closest and most significant locally is located ≈200m to the east of Building A, on the banks of the afon Tâf Fechan (SINC). Additional woodland is located on the banks of the Afon Tâf (SINC) ≈460m west of Building A. Both of these features form significant linear features in the landscape and provide connectivity north and south through the settlement of Merthyr Tydfil, and to the wider landscape.
- 4.1.6 The Brecon Beacon National Park is located ≈460m west of Building A and dominates the landscape to the north.
- 4.1.7 **Potential Roost Analysis:** No evidence of bats was recorded internally or externally. A single potential access point was identified at a group of broken concrete tiles on the northern elevation of the roof. Externally, the soffit and fascia were well sealed on all elevations. There were no significant gaps recorded between the soffit and the brickwork.
- 4.1.8 **Hibernating Bats:** Using a degree of academic supposition and taking into account the features identified within the PRA, it is considered unlikely that Building A is suitable at offering the hibernating conditions that bats prefer. However, taking a precautionary approach Pipistrelle species are known to hibernate in buildings and this will need to be taken into consideration.
- 4.1.9 **Impact Assessment:** A Preliminary Roost Assessment (PRA) confirmed a single gap in the external fabric of Building A. The resultant assessment, based on best practice guidance, recorded that this feature offers access to the interior space, between the breathable membrane and the underside of the concrete tiles. However, while the proportions of this space are suitable for roosting bats, the materials are not. Although not legitimately confirmed through peer-reviewed research (to date), anecdotal evidence strongly suggests that bats become trapped in the fibre weave of breathable roof membranes. In addition, it is considered the microclimate provided by this material (temperature and humidity) is not conducive to successful roosting. Ongoing research between the Bat Conservation Trust and Reading University is aimed at improving our understanding of these issues (BCT – undated).
- 4.1.10 Furthermore, the north-facing aspect of this location reduces the suitability of this feature.

- 4.1.11 In addition, there is photographic evidence that the tiles were intact in 2021 and the home-owner reports that the damage has occurred in the last few months, drastically reducing the likelihood of bat interest at this location.
- 4.1.12 While it cannot be stated that bats could not use this feature, it is considered unlikely in this instance.
- 4.1.13 It is therefore considered that this structure returns a negligible result for supporting a bat roost and that a roost site is likely absent for this location. This must be accompanied by a cautionary note; 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.
- 4.1.14 Taking the conclusions of this report into consideration, bat roosts are considered likely absent from the structure. Bat interest at Building A is considered to be of negligible conservation significance (Mitchell-Jones 2004) with breeding bats, not a concern. It is therefore considered that there are no specific restrictions or limitations, and works may continue as planned.
- 4.1.15 **Nesting Birds:** No records were made for nesting birds having previously used Building A. Due to the feature identified in the preliminary roost assessment, a cautionary approach is recommended.
- 4.1.16 **Additional Ecological Constraints:** The surrounding gardens provide potential use for roosting and foraging bats. Several large mature trees are located within the gardens of neighbouring properties and well-maintained hedgerows and garden boundaries provide potential for commuting and foraging bats, in addition to nesting opportunities for many bird species. Due to the quality of this habitat a cautionary approach is recommended in regards lighting, during and post development.
- 4.1.17 Due to the quality of the adjacent habitat, it is considered that the proposed works would benefit from the inclusion of artificial roost boxes on the southern elevation (see section 5 – enhancement features).

SECTION FIVE: RECOMMENDATIONS & ENHANCEMENTS

Based on the results of this survey report the following recommendations have been made.

5.1 Recommendation 1 (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 should be restricted during the development period to that which is necessary for safety and security. This should be kept to a minimum.

5.2 Recommendation 2 (Post Development Lighting Scheme)

To prevent any adverse impact upon the potential roosting, commuting and foraging habitats for bats adjacent to Building A, the lighting plan 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 should 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 SINCS).

- 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 should have a warm white spectrum (ideally <2700 Kelvins), reducing the blue light component and increasing the red-light component.
- Luminaries should feature peak wavelengths high the 550nm to avoid the component of light most disturbing to bats.
- Heights of fixtures should be carefully considered to minimise light spill. Only luminaries with an upward light ratio of 0% and with good optical control should be used.
- Luminaries must always be mounted on the horizontal, i.e., no upward tilt.
- Any external security lighting should be set on motion sensors and short (1 min) 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.

5.3 Recommendation 3 (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).

5.4 Recommendation 4 (Post Development Enhancements)

Under the Environment (Wales) Act 2016, public authorities (including local councils and the National Parks), 'must seek to maintain and enhance biodiversity in the exercise of functions in relation to Wales, and in so doing promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions.' This replaces the section 40 duty in the Natural Environment and Rural Communities Act 2006 (NERC Act 2006), in relation to Wales, which states that; 'All public authorities have a statutory duty to conserve biodiversity in all of their functions.'

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

- The inclusion of features suitable for roosting bats to be included in the plans on the southern elevation (i.e., x2 Soffit Bat Boxes - Table 5.1 – Figure 5).

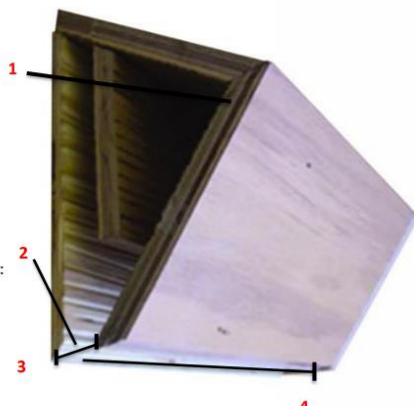
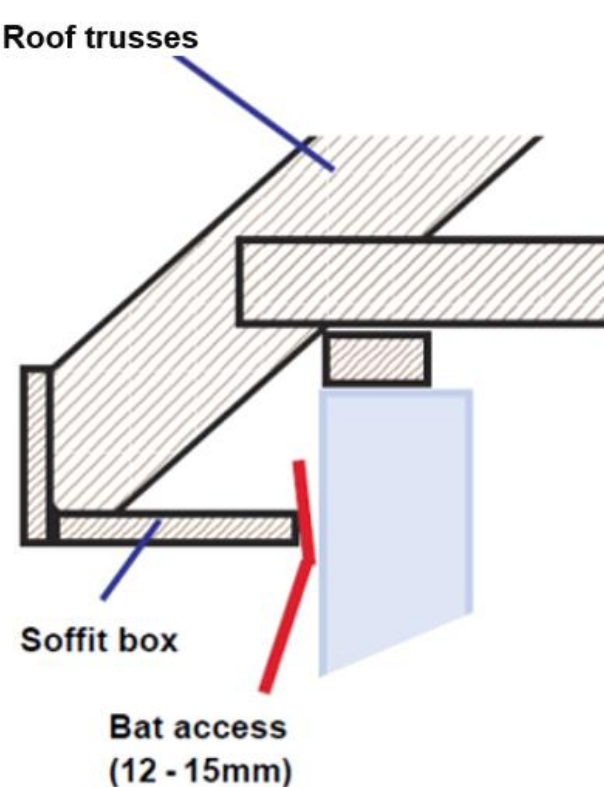
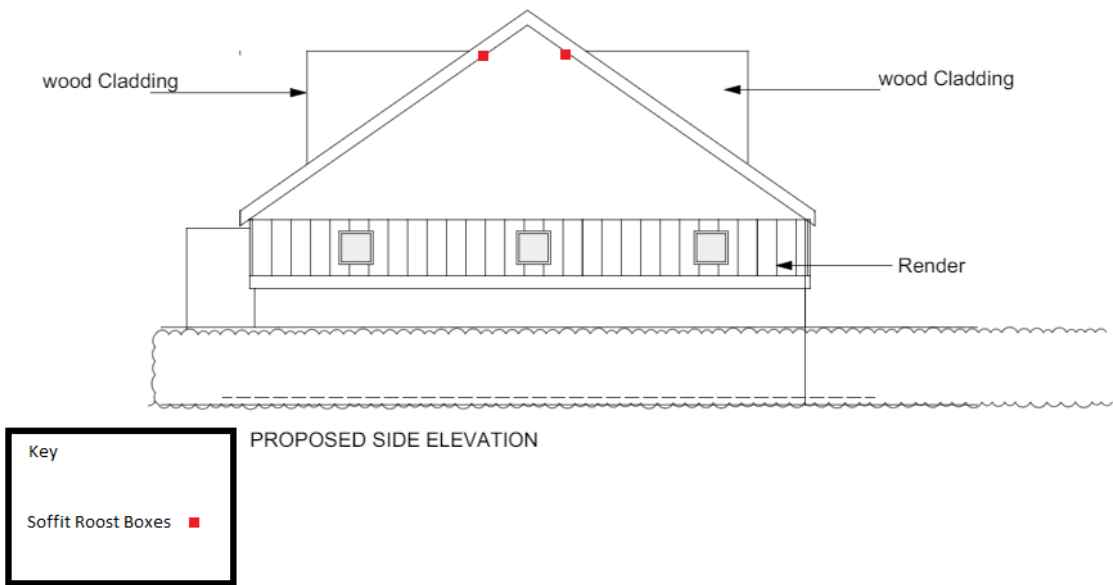
Product	Information
1 Width of timber on front panel: 24mm 2 Width of tapered timber at the entrance on the back panel: 16mm 3 Depth of entrance from bottom of tapered edge (excluding timber): 35mm 4 Width of entrance (excluding timber): 388mm Width of timber on side panel: 18mm  *The example show above is a timber model, however woodcrete is a more durable material and is prefereable for longevity. Roof trusses  Soffit box Bat access (12 - 15mm)	Soffit Bat Box Wildcare Accessed 24/10/2022. Available at: https://www.wildcare.eu/media/wysiwyg/pdfs/Soffit%20Bat%20Roost%20-%20Dimensions.pdf N.B. this is given as an example only. Many other suitable products are available.

Table 5.1: Enhancement Features

Figure 5: Proposed Habitat Enhancement



N.B. South Elevation

© Provided by George and Co. (January 2023)

SECTION SIX: ADDITIONAL INFORMATION

6.1 ENCOUNTERING A PROTECTED SPECIES DURING WORKS

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

6.2 EXPIRATION OF THIS REPORT

- 6.2.1 Should works not start within two years (i.e., January 2025) further survey and assessment will be necessary to qualify the results of this report and its recommendations.
- 6.2.2 This report is valid for two years (i.e., January 2025).

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About Us

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

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

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

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

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

A. Helping Nature

Developing and supporting habitat gain in the valleys through:

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

B. Working with People

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

C. Supporting Communities

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

Adroddiad Arolwg gan



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