

**ECOLOGICAL IMPACT ASSESSMENT**  
**and Bat Activity Survey**



Wernfach,

Llandefalle,

Powys

A Report for  
Mr Quick and Mrs Davies

<b>Report Information</b>	
<b>Project name</b>	Ecological Impact Assessment and Bat Activity Survey for Wernfach, Llandefalle
<b>Project reference:</b>	KG20 23/0 04
<b>Status:</b>	Final <b>Date of Issue:</b> 7 <sup>th</sup> November 2023
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<b>Reviewed by:</b>	Joshua Evans BSc (Hons) MCIEEM, Consultancy Manager, Worcestershire Wildlife Consultancy
<b>Prepared for:</b>	Mr Quick & Mrs Davies

## Summary

<p><b>Site</b></p>	<p>This report has been produced for Mr Quick &amp; Mrs Davies for the proposed alterations and extension of Wernfach, Llandefalle.</p>
<p><b>Survey Methods</b></p>	<p>An extended Phase 1 survey was conducted on 8<sup>th</sup> March 2023 by Katie McMinn (NRW Bat licence: S091457/1).</p> <p>Three bat activity surveys were conducted through May, June, and July 2023 to establish presence/absence and characterise identified bat roosts.</p> <p>A data search of local wildlife records was requested in September 2023.</p> <p>The information is true to the data collected at the time of the surveys in 2023. The surveys undertaken are considered to retain validity for 12-18 months from the date of issue. An additional assessment to confirm substantial change at the site is likely required after this period.</p>
<p><b>Survey Results</b></p>	<p>There is no loft space over the main house. There are features offering potential access and roost activity within the southeast gable of the main house, including crevices between the stonework and bargeboard timbers, window lintel and roof tiles.</p> <p>Bat droppings were found within the loft over the northeast extension. The droppings were on the ridge timber. There are features offering potential access and roost features within the northeast extension, including gaps between the stonework and roof timbers.</p> <p>Seven roost locations were identified in the southeast gable, used by common and soprano pipistrelle species. Two locations were under roof tiles, five locations were under the bargeboard of the southeast gable.</p> <p>One pipistrelle roost was identified in the northeast gable.</p> <p>Three swift nests and additional bird nests were identified in the southeast and northeast gable bargeboards and wall plate.</p>
<p><b>Discussion</b></p>	<p>The building inspection and combination of bat surveys identified a total of seven pipistrelle roosts in the tile and bargeboard features of the southeast gable and a single pipistrelle roost in the northeast gable.</p> <p>All roosts are classified as non-maternity summer roosts, used by low numbers of common and soprano pipistrelle.</p> <p>Following the surveys to identify bat roost locations the proposed extension was significantly re-designed to accommodate a 500mm avoidance distance of the bargeboards of the southeast gable.</p> <p>The redesigned proposal has aimed to avoid loss, damage, or obstruction of the existing bargeboards by reducing the proposed roof height and maintaining distance between the existing roof and flat roof dormer link.</p> <p>Due to the design, the proposed extension will not result in loss, damage, or obstruction of the identified bat roost locations.</p> <p>Avoidance timing will be required to prevent disturbance of the existing roosts during specific construction work of the roof connecting to the existing gable.</p> <p><b>A Natural Resources Wales development licence <u>is not required</u> for works to proceed.</b></p> <p><b>Avoidance timing is required for specified construction works.</b></p>

<b>Avoidance and Mitigation Measures</b>	Bats: Timing of works for the construction of the roof connecting to the existing gable only.
<b>Licensing requirements</b>	NRW development is <u>not required</u> for the proposed works.
<b>Compensation &amp; Biodiversity Enhancements</b>	x3 bat boxes suitable for crevice- and void- dwelling bat species x1 double swift box, x1 double house martin cup

## Protected species survey summary and assessment form

<b>Applicant name</b>	Mr. Quick & Mrs. Davies	
<b>Site name</b>	Wernfach	
<b>Site grid reference</b>	SO 1196 3562	
<b>Consultant name and survey licence number</b>	Katie McMinn Bat licence: S091457/1	
<b>Planning application type (if known)</b>	Householder	
<b>Planning application reference (if known)</b>		
<b>Briefly state the purpose of the report (including client's brief) and the work undertaken.</b>		
<p>Extended phase 1, bat assessment survey and three bat activity surveys to inform the ecological survey requirements.          Provide avoidance and biodiversity measures for the proposed extension.          Work undertaken: Extended Phase 1 survey (P1 habitat, habitat suitability assessment for: bats, birds, dormice, reptile, amphibians, and other mammals), Building inspection (internal and external). three activity bat surveys.</p>		
<b>Summary of the survey work undertaken:</b>		
<p>Please provide references to the published survey guidance followed:          Collins, J. (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines. 3rd edition. London: The Bat Conservation Trust.          JNCC (2010). Handbook for Phase 1 habitat survey - a technique for environmental audit. Peterborough: JNCC</p>		
<b>Survey Type</b>	<b>Dates</b>	<b>Departure from guidance*</b>
P1 Habitat survey & building inspection	08/03/2023	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Dusk 1 bat survey	24/05/2023	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Dusk 2 bat survey	14/06/2023	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Dawn bat survey	13/07/2023	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
*Any departure from guidance must be fully qualified within the main body of the report		

**Summary of the Reports Results:**

Please note: only record the negative presence of a species below if there is a medium or high likelihood of that species being present at the site. Please then provide your assessment of the 'likelihood of presence'\* below.

Species	Number	Likelihood of presence* (Low, medium, high)	Impact assessment (Low, medium, high)	Functionality of site (e.g. breeding, hibernation, resting place and/or place of shelter, foraging, dispersal routes)	Current conservation status of site (Favourable, unfavourable, or unknown)
P.pi	3	High	Low	Resting place	
P.py	4	High	Low	Resting place	
Pip sp.	4	High	Low	Resting place	

**Summary of the report's recommendations and conclusions:**

The proposed works are to construct a two-storey extension off the southeast and southwest elevation of Wernfach.

The bargeboards and gable edge roof tiles of the southeast gable provide seven non-maternity summer roosts for soprano and common pipistrelle. All roosts are used by 1-2 bats.

The design of the extension has been designed to avoid the bat roosts identified by the surveys. The existing bargeboards will be retained. The proposed extension will be located outside 500mm from the bargeboards, avoiding obstruction of a roost access point.

A NRW development licence is not recommended for the proposed works.

Avoidance measures are required for specific parts of the construction process.

Requirement for biodiversity enhancements for nesting birds and bats (crevice and void-dwelling).

Please fill answers as Yes / No / blank for N/A												
Species	Has the report identified the need for the following measures?									Please fill out, for European Protected Species.		
	Avoidance	Mitigation	Compensation	Monitoring	Long term measures	Ecological Compliance Audit	Biosecurity measures	Further Survey Required?	Detrimental to FCS? *	EPS derogation licence required?	Is there a valid derogation purpose?	Are there satisfactory alternatives to the development?
P.pi	Y	N	N	N	N	N	N	N	N	N		
P.py	Y	N	N	N	N	N	N	N	N	N		
Pip sp.	Y	N	N	N	N	N	N	N	N	N		

**Please confirm whether there are any further details (for example. reserved matters, by condition) to be submitted and provide details below:**

No

**Name**

Katie McMinn

**Date**

7<sup>th</sup> November 2023

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# 1 Introduction

This report has been produced for Mr Quick and Mrs Davies to provide an Ecological Impact Assessment for the proposed extension of the dwelling Wernfach, Llandefalle.

The dwelling, Wernfach is subject to a planning application to construct a two-storey extension off the southeast and southwest elevations of the dwelling.

This report has been commissioned to:

- Identify evidence of/potential for protected species.

- Identify presence/absence of a bat roost (location of roost and access point, number of individuals, and bat species).

- Identify if the proposed works will affect protected species.

- Requirement for a Natural Resources Wales Development Licence for protected species

- Set out biodiversity enhancement measures appropriate for the intended works.

The surveys were conducted by Katie McMinn BSc (hons) MCIEEM, she holds a Cyfoeth Naturiol Cymru/ Natural Resources Wales (NRW) great crested newt survey licence: S091458/1 and NRW bat survey licence: S091457/1. Katie has experience in conducting Phase 1 Habitat surveys and National Vegetation Classification (NVC) surveys, bat surveys and great crested newt surveys. KG Ecology are a registered practice, listed in the Chartered Institute of Ecology and Environmental Management (CIEEM).

# 2 Site Location

The dwelling, Wernfach, Llandefalle, hereafter referred to as the Site, is a semi-detached house, located on Pont-y-wal Lane, Llandefalle LD3 0NA centred at NGR: S0 1196 3562.



Figure 1: Location plan for Wernfach, Llandefalle.

### 3 Planning Policy and Legislation Context

The **Natural Environment and Rural Communities (NERC) Act 2006** includes a duty on local authorities to regard biodiversity conservation as a material consideration within the planning process. Section 42 of the NERC Act protects those species and habitats of principal importance for the purpose of conserving biodiversity in Wales. Powys County Council has developed local biodiversity action plans to reflect the local Section 42 habitats and species (PCC 2002).

In Powys, this legislation is informed in part by the following planning policies, which include a requirement to inform the application process in view of ecological features and sets out *“a public authority must seek to maintain and enhance biodiversity in the exercise of their functions”*:

Powys County Council’s LDP Policies SP7, DM2 in relation to The Natural Environment (PCC, 2018).

Planning Policy Wales (Edition 11, February 2021) requirements

Technical Advice Note 5, Nature Conservation and Planning (Welsh Assembly Government, 2009); and

The Environment (Wales) Act 2016 Section 6: Biodiversity and resilience of ecosystems duty (S6 duty)

**The Conservation of Habitats and Species Regulations 2017** transcribes the European Commission Habitats Directive into UK law. Species listed under Schedule 2 of these regulations are ‘European Protected Species’ (EPS). It is illegal to deliberately capture, kill, injure, or disturb an EPS animal. Breeding sites and resting places of EPS animals are also protected from reckless damage, destruction, and obstruction. Inclusion of EPS on Schedule 5 of the **Wildlife and Countryside Act (WCA) 1981** (as amended) strengthens the protection given to these species.

Common lizard, slow-worm and grass snake are listed under Schedule 5 of the Wildlife and Countryside Act (WCA) 1981 (as amended) which prohibits the intentional killing or injury of these animals.

The **Countryside and Rights of Way Act 2000** strengthens the species enforcement provisions of the WCA 1981 (as amended) and makes it an offence to ‘recklessly’ harm or disturb a place of rest or shelter of a protected species.

Under the WCA 1981 (as amended) all birds, their nests and eggs are protected during the breeding season from killing/destruction, damage, and disturbance. The bird breeding season is February to August.

### 4 Methodology

#### Desk study

The desk study was conducted in March 2023 as part of a preliminary ecological appraisal for the site. Ordnance Survey maps and aerial photographs were used to provide context of the Site location, current and historic land use and identify local habitat features.

The Multi Agency Geographic Information for the Countryside (MAGIC) website (Natural England, 2002) provided statutory and non-statutory nature conservation sites within a 1km radius of the Site.

A biodiversity data search for bats (2km), roof-nesting birds (150m), and sites designated for bats within 10km, was received from the Biodiversity Information Service for Powys and Brecon Beacons National Park (BIS) on 13<sup>th</sup> September 2023 (LERC reference: DERF 2289).

## Field Survey

The building inspection and field survey were conducted on 8<sup>th</sup> March 2023 by Katie McMinn.

### *Phase 1 Habitat survey*

A Phase 1 Habitat survey was conducted at the Site and habitats adjacent to the Site. The survey used the standard methodology as set out by the JNCC Phase 1 Habitat Handbook. The Site, including the length of each boundary, was walked over with the dominant habitat areas recorded and target notes used for smaller features of interest. Species lists were recorded for the dominant habitat areas with relative abundance of plants noted using DAFOR scale (Dominant/ Abundant/ Frequent/ Occasional/ Rare).

### *Building inspection for bats*

An appraisal for bat roosts was conducted using methodologies detailed by current good practice guidelines (Mitchell-Jones and McLeish, 2004, Collins, 2016 and BBN PA, 2008). The assessment involved a detailed visual inspection of internal spaces and external building features of the site. The inspection was aided by binoculars, ladder, digital endoscope and one million candle power clip-lit torch. A careful examination was undertaken of the building for features such as gaps and crevices offering bat roost potential and a wider search for evidence of bat use, including bat droppings, staining by fur-oil or urine and in some cases the absence of cobwebs/debris. The presence of cobwebs and debris in roof voids or at access points tend to suggest a lack of use by bats although on its own this evidence is not conclusive.

**Bat dropping DNA analysis:** Where bat droppings were found, and accessible, bat droppings were collected from the Site and sent for DNA analysis by the University of Warwick, (EcoWarwicker Ecological Forensics).

Photographs were taken of the Site and surroundings to record condition, features of interest and bat evidence.

Current Bat Survey Guidelines suitability categories 'Negligible', 'Low', 'Moderate' and 'High' are used to summarise the bat roost 'suitability' of a Site. The assignment of suitability categories is based on the presence and condition of habitat/structure features, landscape and applied professional judgement (Collins, J., 2016). The suitability categories provide an aid in determining a reasonable minimum number of bat roost surveys to determine bat roost absence and roost characterisation e.g., species, numbers, roost location.

### *Bat Activity Survey*

The Site has been assessed as a 'High' Suitability site for bat roosts based on the building inspection conducted on 8<sup>th</sup> March 2023. Three bat activity surveys were conducted through May, June, and July 2023. The surveys were conducted by Katie McMinn (NRW bat survey licence: S091457/1), Joshua Evans (Worcestershire Wildlife Consultancy, Consultancy Manager, NRW bat survey licence holder), and Alicia Leow-Dyke.

On each survey, one location was covered by a surveyor, and one by a surveyor-manned or unmanned camcorder, with infrared lighting setup. The camera used was a Sony Handyman FDR-AX53 with night mode capability and settings saving footage at 50 frames per second. Each survey location had a bat detector capable of recording bat calls for later review.

When manned, the camcorder was used to record audio notes provided by the surveyor of their real-time observations. Notes included time and bat activity. Recording was stopped and started again at the end of audio notes to aid review.

Unmanned camcorders were visited by a surveyor every 30min through the survey period to check the equipment function. Audio notes were left to record the time for each visit.

Camcorder footage was reviewed using DaVinci Resolve software, with clips created to review and store bat roost activity. Review of manned camcorder footage focused on notes provided by the surveyor to identify bat activity. Unmanned camcorder footage was reviewed in full, additionally aided by the recorded remote bat detector files.

The timing, number of surveys and surveyors were conducted in accordance with the Bat Survey Guidelines (Collins, 2016) and based on the assessment of the buildings containing bat droppings and having of 'High' suitability features.

Calls from bat detectors, along with flight patterns, were used to identify bat species observed during the activity surveys. A Fledermaus-Detector SSF BAT<sub>2</sub> bat detector, Pettersson 240x, and Wildlife Acoustics Echo Meter Touch 2 were used, operating using heterodyne and frequency division scanning simultaneously. The Echo Meter Touch 2 provided recording of bat calls, reviewed through their app. A Titley AnaBat Express (a broad-band microphone recording frequency division) was used alongside the camera recorder set up to record bat calls. The recorded files were downloaded and analysed using zero-crossing analysis in Anabat Insight software, aided by call identification reference books (Russ, 2012).

Temperature and weather conditions were recorded at the start, at sunset and end of each survey.

#### *Protected species*

A search was conducted for evidence of protected and priority species at the Site and within surrounding adjacent habitats. This included recording actual sightings, evidence of activity by protected/priority species (foraging/ droppings and latrines/ shelters/ hairs/ sloughed skin) and habitat suitable for supporting breeding and sheltering activities.

An inspection for bird nest activity and appraisal for nesting potential was made of the features within the Site.

Species	Summary of field survey conducted
Bat species	Assessment of buildings/trees and habitat to support bat roosts and foraging/commuting activity (further detail below).
Dormouse	Assessment of the likely value of the hedgerows for dormice. Search for chewed hazel nuts along hedgerows adjacent to the Site.
Badger	Assessment of the likely value of the habitat features for badger. Search within 100m of the Site for badger setts and foraging/latrine activity.
Otter	Assessment of the likely value of the watercourse for otter and water vole.
Water vole	
Reptiles	Assessment of the likely value of the habitat features for reptiles and amphibians.
Great crested newt	

Table 1: Protected species field surveys

## 5 Baseline Ecological Conditions

### Desk Study

There are two designated sites protected for ecological features within 1km of the Site:

**Afon Llynfi Site of Special Scientific Interest (SSSI):** The watercourse the Triffrwd, a tributary of the Dulas and Afon Llynfi is designated under the Afon Llynfi SSSI. The SSSI boundary is located, at its closest, 40m to the northeast of the Site.

- **River Wye Special Areas of Conservation (SAC):** the Triffrwd is designated under the River Wye SAC, it is located, at its closest, 40m to the northeast of the Site.

The desk study identified one site designated for bat features are within 10km of the Site:

- **Ciliau (SSSI):** Designated for its lesser horseshoe bat maternity roost. Located c.7.2km to the north of the Site.

#### *Local landscape*

No ponds were identified within 500m of the Site using OS map, aerial imagery, and field survey. The Site is in a rural setting with occasional dwellings with gardens with a moderate potential for unidentified garden ponds located within 500m.

The Site is located on Pont-y-Wal Lane, off the A470 as it runs through the village of Llandefalle. Habitats within 500m include sheep-grazed fields of semi-improved and marshy grassland, and improved grassland. There are dwellings with gardens in Llandefalle. The Triffrwd watercourse is lined by trees and sections of linear woodland. There are small blocks of mixed and deciduous woodland along the A470 and south of the Site in Llan Alders wood. The fields within 500m are bound by managed hedgerows with occasional standard trees. The watercourse, woodland and hedgerows provide excellent connectivity through the wider landscape.

The Site is located at approximately 150m above Ordnance datum.

#### Habitats

The Site is a semi-detached house located on the edge of the village Llandefalle. The northeast elevation is against a hardstanding parking area, beyond which is a managed hawthorn and blackthorn hedgerow. The southeast gable and southwest elevation are against hardstanding and gravel path. There is a managed garden lawn off the south elevation, bound by a fence and managed hawthorn and blackthorn hedgerow.

The field against the east boundary is grazed semi-improved grassland. The east boundary of the field is a line of trees against the watercourse the Triffrwd.

The field against the west boundary is grazed semi-improved grassland with stands of rush sp.. The field contains three recently felled apple trees. There is a recently felled, hedgerow along the west boundary of the field, which had grown into a line of individual trees.



Plate 1: Looking east across the site towards Triffrwd. Plate 2: Looking north across the site to the southeast gable.



## Building description

### *External*

The Site is orientated northwest-southeast along the ridgeline. The main section of the dwelling is three-storey, with bedrooms and roof lights in the loft void. The Site has an original two storey extension off the northeast elevation with a loft space above. There is a lean-to porch off the southeast gable and flat-roof ground floor extension off the southwest elevation.



Plate 3: Showing the southeast gable and elevation. Plate 4: Northeast gable and northwest elevation.

The Site is exposed stonework on all elevations. The roof is pitched over the main section and northeast elevation. The roof is clad in slate. The slates of the northeast extension are in place on both elevations. There are three ridge tiles with raised edges. Across the main roof, there are slates with what appear to be superficial gaps on the northeast elevation. On the southwest elevation of the main roof there are slates with edges. The ridge tiles of the main roof have crevices leading under tiles, particularly two tiles at the southeast gable.

The southeast elevation eaves of the northeast extension are open, with access into the loft space. There are significant gaps and crevices leading between the stonework and bargeboard timber of the northeast gable, particularly at the gable ridge. There are gaps between the roof tiles and bargeboard tile.

The stonework of the northeast gable wall is intact. There are crevices between the purlin timbers and stone.

There are significant gaps and crevices leading between the stonework and bargeboard timber of the southeast gable. The gaps are present along the full length of each bargeboard. There are gaps between the roof tiles and bargeboard tile, particularly at the west corner where the second tile up has slipped and lifted.

The stonework of the southeast gable is intact. There is a single crevice around the second-floor window, located between the lintel timber and window frame.

The eaves of the southwest elevation are fitted with a soffit timber, there are crevices in the wall plate stonework along the wall length.



Plate 5: Northeast gable end of northeast extension. Plate 6: Southeast gable of main house



Plate 7: Second floor window and gable apex of southeast gable. Plate 8: West corner of southeast gable.

The porch lean-to is clad in slates. There are timber fascia boards, with a tight fit to the stonework on the northeast and southwest elevations. The fascia board on the southwest elevation has gaps c.1cm in width leading up into the void between the rafters.

The flat-roof extension has timber soffits on all elevations, the timbers are in place with no significant crevices within the roof structure.

#### *Internal*

Internally the Site has a single loft space over the northeast extension. The roof slates are unlined on the southeast elevation. There is a breathable roofing membrane fitted under the tiles of the northwest elevation, the membrane is in place throughout. The loft has fibre insulation throughout.

There is a single principal rafter frame within the loft, supporting four purlin timbers. At the southwest end of the loft there is a stepped section where the loft meets the wall of the main building, with small sections of a lath and plaster wall and exposed timbers from the main house roof.

The northeast gable is exposed stonework. There are significant gaps between the stonework and roof timbers.

All the timbers, loft floor, and gable wall have a thick cover of dust. There is heavy cobweb cover along the ridge beam.





Plate 9: Loft of northeast extension. Looking northeast to gable end.



Plate 10: Looking southwest towards join with main house roof.

### Bats - Desk Study and Building Inspection

The BIS data enquiry returned 60 records for bat species within 2km of the Site. There were no previous records for the Site itself. Records within 500m of the site include roost locations for common pipistrelle and lesser horseshoe bat. Bat species recorded locally include roost activity and live sights for brown long-eared bat, Natterer's bat, soprano pipistrelle, noctule bat, and Daubenton's bat.

Bat droppings were found inside the loft of the northeast extension. x50 bat droppings were found caught in cobwebs on the northwest side of the ridge timber, with c.200 bat droppings collected directly below this point on the wool insulation. The bat droppings all had a dull and dust covered appearance indicating they are old (over one season old).



Plate 11: Bat droppings caught in cobwebs against the ridge timber in loft (within circle).



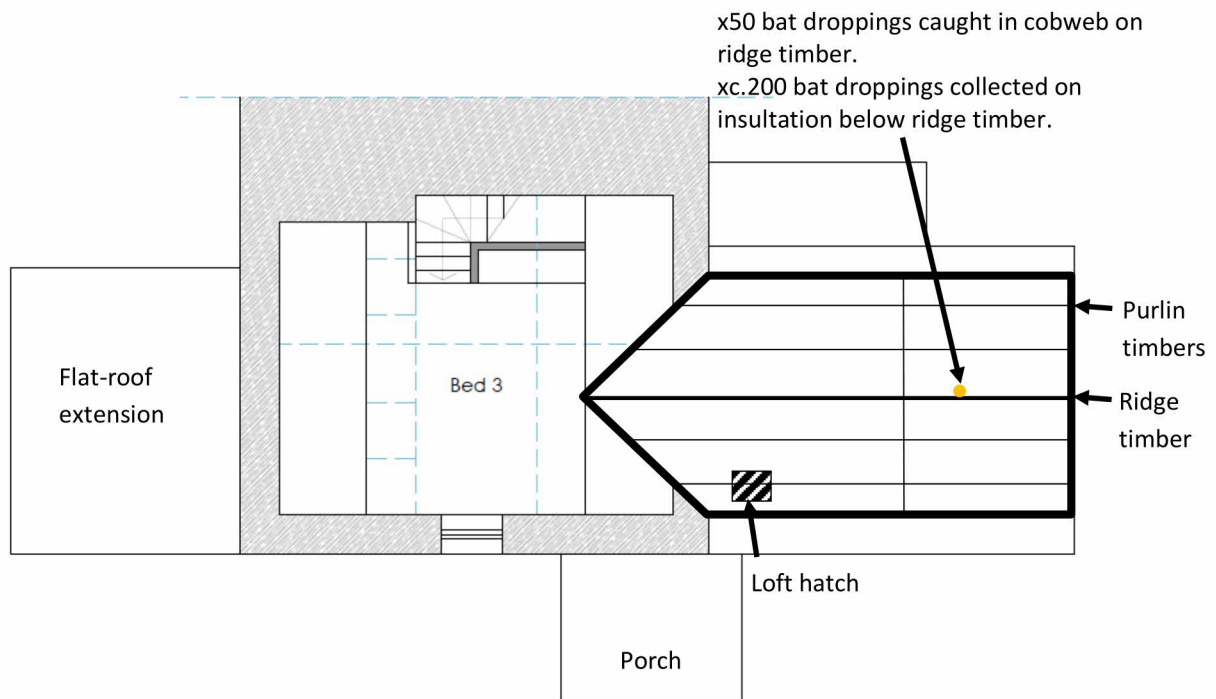


Figure 2: Diagram showing location of bat droppings within loft space of the northeast extension.

No bat droppings were found on the external surfaces of the site.

There are features that offer bat roost potential in external features of the Site. There are ridge tiles and slates with lifted edges, there are significant gaps leading under roof tiles, and between the bargeboard timbers and stonework. There is a crevice between the lintel timber and window frame of the second-floor window of the southeast gable.

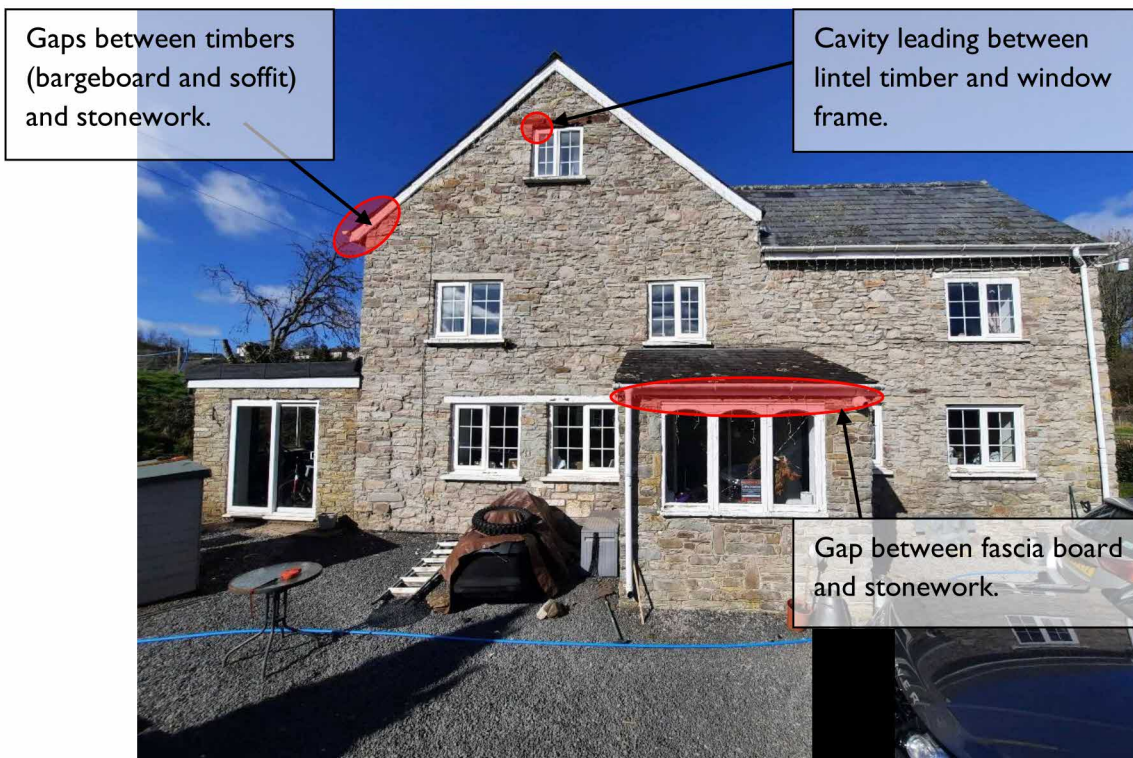


Figure 3: Features located within the proposed work area which offer Low to High suitability as a bat roost.

The hedgerow and tree boundaries surrounding the Site extends throughout the local area, connecting to lines of trees, areas of woodland and watercourses in the wider landscape, providing high suitability commuting and foraging opportunities for local bat populations.

### Bats - Bat Roost Surveys

The site was assessed as offering ‘High’ Suitability for a bat roost due to the presence of droppings within the loft space and crevices between the bargeboards and stonework of the gable ends. Based on the building inspection three bat surveys were undertaken to determine presence/absence of a bat roost and characterise bat roosts present.

Two surveyors, with one surveyor manning a remote camera setup, were located around the Site. Both gable ends and long elevations of the site were sufficiently covered to observe the key features of interest across the Site.

Survey	Date	Start time / end time	Start/ sunset/ end temp	W eather
Dusk 1	24 <sup>th</sup> May 2023	21:03 / 22:45	17°C/ 16°C/ 15°C	100% cloud. Dry, no wind.
Dusk 2	14 <sup>th</sup> June 2023	21:15 / 23:00	18°C/ 16°C/ 15°C	10% cloud. Dry, no wind
Dawn	13 <sup>th</sup> July 2023	03:08/05:08	12°C/14°C	30% cloud. Dry, no wind.

See Appendix 3: Bat Survey Data and Appendix 4: Bat Roost Locations for further details of the bat activity recorded by the surveys and locations of each identified roost.

*Dusk 1 24<sup>th</sup> May 2023 sunset: 21:14*

*Summary of emergence activity:*

x1 Soprano pipistrelle emerged from under the 1<sup>st</sup> roof tile below the ridge line (south side) of the southeast gable (**Roost 1**).

x1 Common pipistrelle emerged from under the bargeboard (north side of ridge line) of the southeast gable (**Roost 2**).

From 21:21 until the end of the survey there was frequent soprano and common pipistrelle passes along or around the dwelling and foraging, with up to two bats seen together at any time. Foraging lines were concentrated along the access track and along the road, including over the garden to the southeast of the Site.

A single pass was recorded for a Natterer’s bat. A single pass was recorded for a brown long-eared bat, flying low along the access track of the dwelling. Noctule bat made occasional passes high over the site between 21:37 and 22:34.

Anabat Express recordings and Echo Meter Touch 2 recordings confirmed pipistrelle, likely Natterer’s bat and Noctule calls.

*Dusk 2 14<sup>th</sup> June 2023 sunset: 21:32*

*Summary of emergence activity:*

Southeast gable:

x1 pipistrelle sp. emerged from under the 1<sup>st</sup> roof tile below the ridge line (south side) of the southeast gable (**Roost 1**).

x1 pipistrelle sp. emerged from the 4<sup>th</sup> roof tile below the ridge line (south side) of the southeast gable (**Roost 3**).

x1 pipistrelle sp. emerged from under the bargeboard (north side of ridge line) of the southeast gable (**Roost 4**).

x1 Common pipistrelle emerged from under the bargeboard (south side of ridge line) of the southeast gable. Roost location low down on bargeboard (**Roost 5**).

From 22:10 until 22:47 there were sporadic passes by common pipistrelle along or around the dwelling and foraging by single bats. Foraging lines were concentrated along the access track and along the road, including over the garden to the southeast of the Site.

Noctule bat made two passes high over the site at 22:10 and 22:50.

Anabat Express recordings and Echo Meter Touch 2 recordings confirmed pipistrelle and Noctule calls.

*Dawn 13<sup>th</sup> July 2023 sunrise 05:08*

*Summary of roost entry activity:*

Southeast gable:

x2 pipistrelle sp. entered under the bargeboard (north side of ridge line) of the southeast gable (**Roost 2**).

x1 Common pipistrelle entered under the bargeboard (north side of ridge line) of the southeast gable. Roost location low down bargeboard (**Roost 6**).

x1 Soprano pipistrelle entered under the bargeboard (north side of ridge line) of the southeast gable (**Roost 7**).

x1 Soprano pipistrelle entered under the bargeboard (north side of ridge line) of the southeast gable (**Roost 8**).

Northeast gable:

x1 Common pipistrelle entered under apex ridge tile of the northeast gable (**Roost 9**).

From 04:07 until 04:48 there were frequent passes by a single common pipistrelle along the access track and around the dwelling.

Two passes by a brown long-eared bat, flying low along the access track of the dwelling.

Noctule bat made four passes high over the site between 03:29 and 04:11.

Anabat Express recordings and Echo Meter Touch 2 recordings confirmed pipistrelle and Noctule calls.

#### Amphibians and reptiles

No ponds were identified within 500m of the Site by the desk study search. There is potential for small ponds in surrounding gardens.

The garden of the Site includes a gravel drive and walkway and managed garden lawn.

There is limited habitat offering shelter opportunities for amphibian or reptile species.

#### Birds

The BIS data enquiry returned two records for roof-nesting birds, the records are for spotted flycatcher and swift.

A single, old, swallow nest was found within the loft space. Two bird nests were found at the top of northeast gable wall. A single bird nest was found on the wall plate of the open eaves of the southeast elevation.

During the bat surveys one swift nest was identified under the bargeboards of the southeast gable, one swift nest under the bargeboards of the northeast gable.

Two swift nests were located oof-site, under bargeboards of the neighbouring dwellings gable.

#### Other protected or priority species

No further habitats or features with potential for protected species were recorded by the survey.

#### Limitations

##### *Desk Study*

The desk study used OS map, aerial imagery, and field survey to aid identification of ponds in the local area. A precautionary approach has been taken for the impact assessment for amphibians. A low threshold is used to identify suitable habitat features to address potential impacts to amphibian species present in the local environment (within 500m) of the Site.

##### *Field survey*

The field surveys for a building inspection for bat roosts have no restrictions of timing within the year. A single site visit provides a single 'snapshot' on which to base a preliminary ecological appraisal.

External inspections for evidence of bats can be strongly affected by detectability i.e., droppings washed away, or not visible from the point of inspection. Internal inspections are impacted from detectability to a lesser degree as field evidence can remain intact for much longer periods, if left undisturbed. To counter these limitations, the building inspection has a strong focus on identifying features and assessing the requirement for further survey based on the suitability of features for a bat roost (Collins, 2016).

For the field survey, access was gained to all external features of the site using appropriate equipment. Inspection of the loft space was completed using appropriate equipment.

Bats are long-lived, mobile species, as such the survey data presented should be considered valid for 12-18 months from the date of the surveys.

For this Site, the limitations set out above have been taken into consideration in setting out appropriate further survey requirements.

## 6 Description of Proposed Works

Original plans for the proposed extension of Wernfach informed the initial preliminary ecological appraisal conducted in March 2023. The original proposal retained the majority of the existing bargeboards of the southeast gable, aiming to avoid conflict with potential bat roost locations, with the exception of the loss of a c.1m section at the base of the south corner.

Bat roost potential was identified as present for the features that would have been lost through the original design. This triggered the need for bat surveys to establish presence/absence of a bat roost in the work area and confirmed presence of a roost.

The presence of a bat roost in the proposed work area triggered a significant re-design of the roof configuration and has resulted in the present proposed design which retains the full length of the existing bargeboards of the southeast gable.

Proposed works, based on information available at the time of this report, are to:

- Demolition of the existing porch and southwest flat-roof extension.

- Construct a two-storey extension off the southeast and southwest elevations of the Site.

- Construct a design that retains the existing bargeboards of the southeast gable, with proposed new build features a minimum of 500mm radius (horizontally and vertically) from the base of the existing bargeboards to allow for bat access routes. See Figure 4 below.

NB. Image is not to scale and is for illustration purposes only.

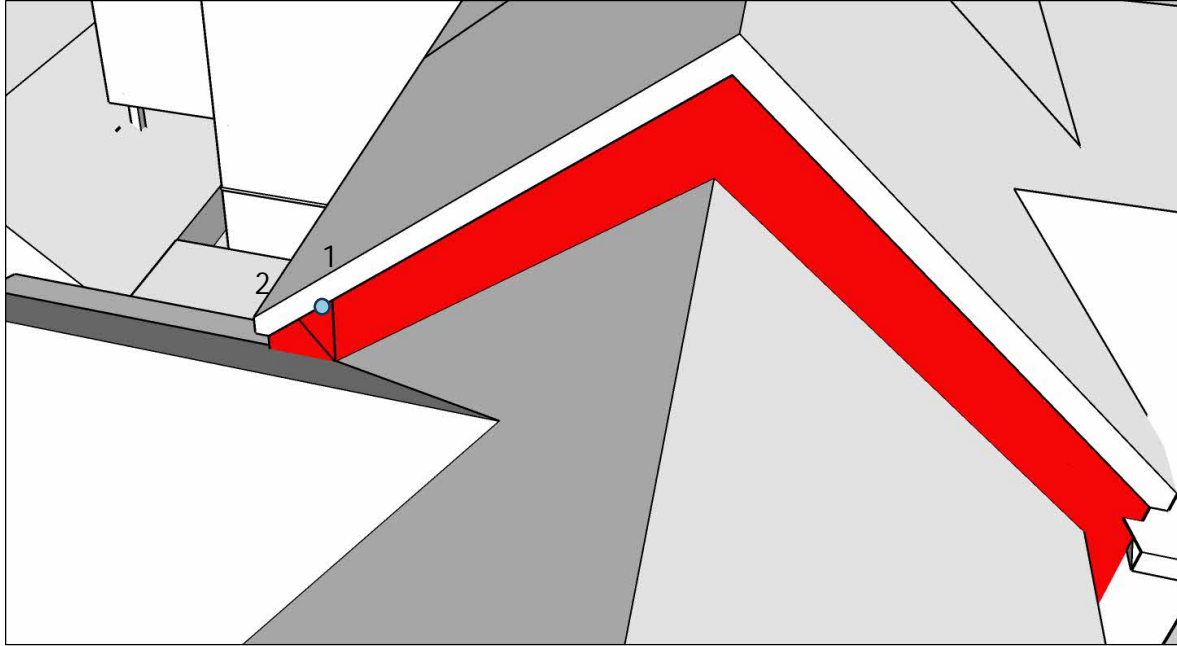


Figure 4: Illustration showing retained southeast gable in red. Vertical line (1) measures 670mm, the diagonal line (2) measures 508mm, both measurements taken from the intersection of the roof. Blue dot indicates approximate location of Roost 5.

## 7 Assessment of Impacts

### Designated Sites

The application site is in a rural location, the proposed work area falls entirely within an area of gravel and managed garden lawn.

The watercourse the Triffrwd is located beyond a field, 40m to the east of the site with connectivity to the by ground and surface water.

Potential pollution of a designated site is assessed as low due to distance and the localised, confined nature of the work. The proposed works include demolition and construction works.

Pollution prevention measures, to prevent localised ground pollution, will be required throughout demolition and construction works.

### Bats

The building inspection identified bat droppings indicating bat roost activity in the loft of the northeast extension, and area unaffected by the proposed works. No further evidence of bat activity was found by the building inspection, however high potential roost features were identified within the southeast gable, including the bargeboards and roof tiles, and a crevice at the second-floor window lintel.

The porch has gaps between the fascia board and stonework, with access into the large cavities between the porch roof rafters.

The bat activity surveys identified seven separate pipistrelle species roost access points in features of the southeast gable. The roosts were located under the bargeboards of the gable and under roof tiles at the gable edge. Six roost locations were used by a single bat, and one used by two individuals, indicating the roosts are all non-maternity summer roosts in use by 2-3 individuals.

The bat surveys identified the likely absence of a bat roost in the southwest window lintel, porch, and flat-roof extension.

All bat species in the UK, including places of rest, are protected by law under The Conservation of Habitats and Species Regulations 2017. It is unlawful to demolish or disturb structures where a bat roost may be present or, obstruct access to a roost without first conducting sufficient surveys and mitigation. Where bats are known to roost and damage/loss of a roost and/or disturbance of bats will occur works must be carried out under an NRW development licence. Where surveys identify bats are likely absent, or in situations where works can proceed without disturbing bats or loss/damage to a roost site, an NRW development licence is not required.

The proposed works will result in demolition of the porch and flat-roof extension. The porch has low-potential roost features. The windows of the southeast gable will be lost, including the lintel with a crevice. These features were confirmed as having likely absence of a bat roost.

The proposed roof design retains the roost locations identified by the bat surveys and provides a 500mm distance from proposed built structures to prevent and minimise obstruction to access points.

The single bat non-maternity bat roost located within the northeast elevation will not be impacted by the proposed works.

**The proposed works will result in retention of locations and functionality of existing roosts, as such a Natural Resources Wales development licence will not be required for works to proceed.**

**Avoidance timing of specific work to the existing southeast gable is recommended and biodiversity enhancements for bat species is required.**

#### Amphibians and Reptiles

The proposed footprint of the extension has been clear during the summer of 2023 as part of landscaping works for access and parking for the dwelling. There are no features offering potential shelter for amphibian or reptile species within the proposed footprint.

#### Birds

The surveys identified bird nesting activity, including swift nests, in areas outside of the proposed work area.

There is no potential to impact nesting birds through the proposed works to the building. Obstruction of nest access is minimised through the design providing distance between the existing and proposed buildings.

#### Summary

Feature/ Species	Avoidance measures required
Bats: - Gaps leading under bargeboards.	Bat roosts present. Timing of works to between September-April for construction works within 1m of the southeast gable bargeboards.
Bats: - Crevice in window lintel. - Gaps between the fascia and wall of porch. - Flat-roof extension.	Likely absence of a bat roost. No ecological constraints for the demolition of these features.

Amphibians and Reptiles: - No significant features in work footprint	No ecological constraints.
Birds - No bird nest activity identified in work area.	No ecological constraints.

Table 2: Summary table of avoidance measures.

Pollution prevention

Pollution prevention measures to prevent localised ground pollution will be required throughout demolition and construction works.

To prevent localised ground pollution, all demolition and construction works will be conducted following pollution prevention measures informed by the Guidance for Pollution Prevention (GPPs) series:

GPP 1: Understanding Your Environmental Responsibilities - good environmental practices (October 2020).

PPG 6: Working at construction and demolition sites (2012) (PPG as not yet updated to a GPP).

As a minimum, the following measures are required: Fuel, oil, and chemical storage must be sited on an impervious base within a bund and secured. The base and bund must be impermeable to the stored substance by of an adequate capacity. Leaking or empty containers must be removed from the site immediately and disposed of in an appropriate manner. Any accumulation of fuel or chemicals in drip trays must be removed through appropriate disposal methods.

Risk of spilling fuel it at its greatest when refuelling plant. Where possible, refuel mobile plant in a designated area, preferably on an impermeable surface located away from drains or watercourses.

Bats

**Feature:**

- Crevice in window lintel.
- Gaps between the fascia and wall of porch.
- Flat roof extension.

**Avoidance action:** No ecological constraints recommended for the demolition of these features.

The surveys have indicated the absence of a bat roost in these features.

**Feature:**

- Bargeboards of the southeast gable

**Avoidance actions:** Timing of works to between September -April for construction works within 1m of the southeast gable bargeboards.

The surveys identified seven pipistrelle bat roosts located under the bargeboards of the southeast gable. Timing works to outside the core summer period (when bats are most likely to be present) will minimise the potential for short-term disturbance of individual roosting bats.

**Timing of works:** Timing of works between September and April.



## 8 Biodiversity Enhancements

The following biodiversity enhancements must be implemented and completed prior to first use of the proposed extension.

### Wildlife boxes

The following wildlife boxes and features may be suitable for the proposal:

x2 external bat boxes - Fitting to the wall of the existing northeast extension. Boxes to be fitted close to the soffit of the gable (Figure 5).

x1 external or integrated bat box - Fitting to or integrated within the wall of the proposed northeast elevation. Boxes to be fitted near the eaves of the elevation (Figure 6).

x2 house martin nest cups - two single, or a single double nest design to be fitted to the northeast elevation, against the eaves (Figure 6).

x2 Swift next boxes - two single, or a single double nest design to be fitted to the northeast elevation, against the eaves (Figure 6).

NB: Images below are not to scale.

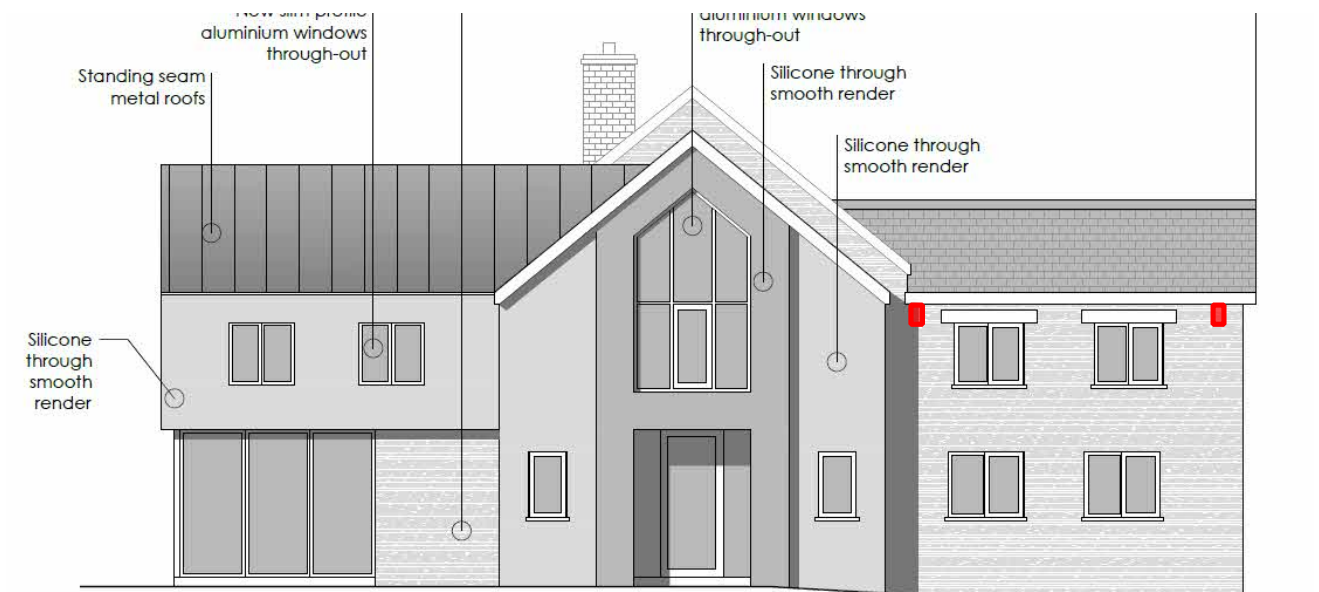


Figure 5: Southeast elevation of the proposed extension showing proposed location for x2 external bat boxes.



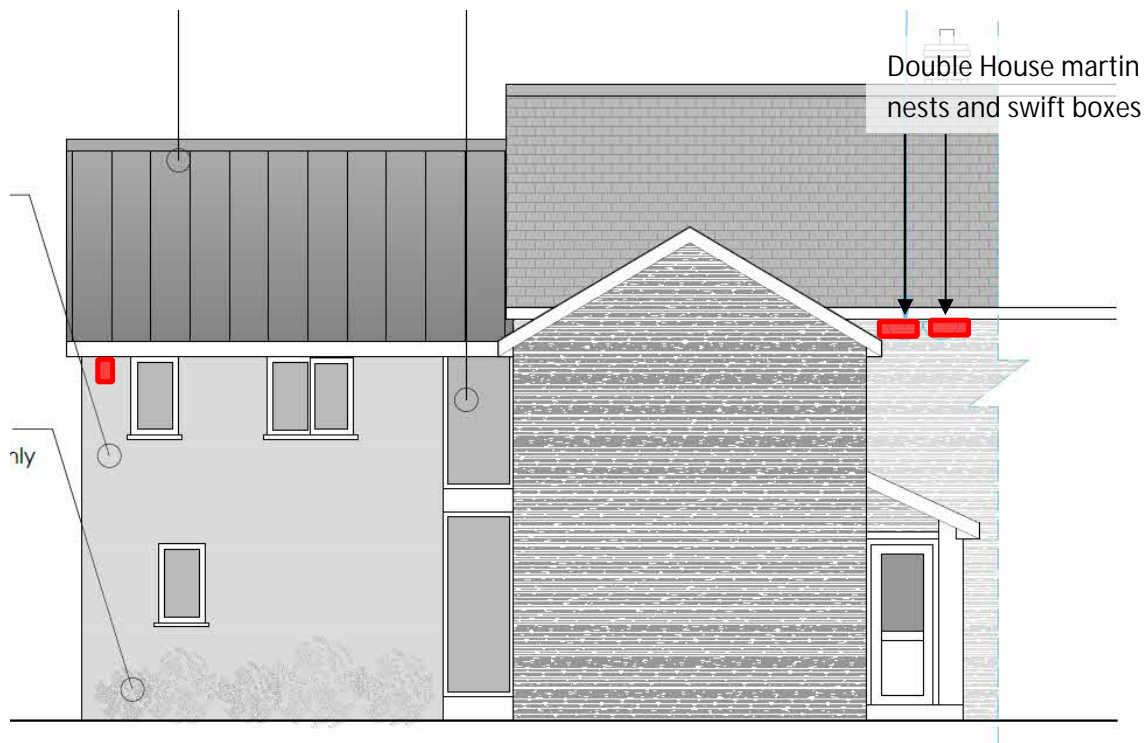


Figure 6: Northeast elevation of the proposed extension showing proposed location for an integrated bat box in proposed extension, and external house martin and swift nest boxes on the existing building.

## 9 References

- CIEEM (2020). *Guidelines for Assessing and Using Biodiversity Data*. Available at [http://cieem.net/resource/guidelines\\_for\\_accessing\\_and\\_using\\_biodiversity\\_data](http://cieem.net/resource/guidelines_for_accessing_and_using_biodiversity_data) [21/03/23]
- Collins, J. (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines*. 3<sup>rd</sup> edition. London: The Bat Conservation Trust.
- Natural England (2021). Magic Map Application. MAGIC. Available at: [Magic Map Application \(defra.gov.uk\)](https://magic.defra.gov.uk/) [09/09/23].
- Powys County Council (2002). Local biodiversity action plan. Powys. Available at: [Local Biodiversity Action Plan - Powys County Council](#) [09/09/2023].
- Powys County Council (2018). *Powys Local Development Plan 2011-2026*. Llandrindod Wells: PCC. Pages 44-50.
- Welsh Assembly Government (2009). *Planning Policy Wales, Technical Advice Note 5: Nature Conservation and Planning*. Cardiff: The Publications Centre

## 10 Appendix 1: Species Name List

### Bats

Common Name	Scientific Name	Abbreviation used in survey results
Brown long-eared bat	<i>Plecotus auritus</i>	<i>P.au</i>
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	<i>P.pi</i>
Daubenton's bat	<i>Myotis daubentonii</i>	<i>M.da</i>
Lesser horseshoe bat	<i>Rhinolophus hipposideros</i>	<i>R.hi</i>
Natterer's bat	<i>Myotis nattereri</i>	<i>M.na</i>
Noctule bat	<i>Nyctalus noctula</i>	<i>N.no</i>
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	<i>P.py</i>

### Birds

Common Name	Scientific Name
House martin	<i>Delichon urbicum</i>
House sparrow	<i>Passer domesticus</i>
Spotted flycatcher	<i>Muscicapa stricata</i>
Swift	<i>Apus apus</i>

## 11 Appendix 2: Bat Survey Survey or locations

Surveyor locations over each survey:



Personal for each survey and location

Location	Dusk 1	Dusk 2	Dawn
1	Alicia Leow-Dyke	Joshua Evans	Kaite McMinn
2	Katie McMinn & Infrared camera rig	Katie McMinn and Infrared camera rig	Infrared Camera rig

## 12 Appendix 3: Bat Survey Activity Data

### Roost emergence and bat activity details from Dusk 1, 24<sup>th</sup> May 2023, sunset 21:14

Time	Details	Species	No. Bats	Surveyor	Behaviour
21:21	Commuting	P.py	1	1	Flew from behind neighbouring house W -E along track.
21:26	<b>Emerged</b>	P.py	1	2&1	Emerged from 1 <sup>st</sup> tile south of ridge line of SE gable. Flew south to lane. <b>Roost 1</b>
21:29	<b>Emerged</b>	P.pi	1	1	Emerged from under bargeboard to north of ridgeline of SE gable. No calls heard. Flew south to track. <b>Roost 2</b>
21:37	Pass	M.na	1	1&2	Not seen, heard by both surveyors.
21:37	Pass	N.no	1	1&2	Pass high over site, E-W
21:40	Pass	N.no	1	1	Not seen.
21:40	Pass	P.pi	1	2	Flew N -S from fields to garden.
21:44	Pass	P.pi	1	1	Flew across site S-N in front of SE gable.
21:44	Pass	N.no	1	1	Not seen.
21:44	Pass	P.pi	1	2	Flying around gardens and field N of site.
21:47	Pass	P.py	1	2	Flying W -E along track.
21:49	Pass	P.pi	1	1	Flew low S-N in front of SE gable.
21:49	Pass	P.au	1	2	Not seen.
21:50	Pass	P.pi	1	1&2	Flew low S-N in front of SE gable.
21:53	Pass	N.no	1	1	Not seen.
21:57	Pass	P.pi	1	1&2	Flew low S-N in front of SE gable.
21:58	Pass	P.py	1	1	Foraging above and behind surveyor, along hedgerow.
21:59	Pass	P.au	1	1	Low pass across site.
22:00	Pass	P.py	2	2	Flew over surveyor.
22:03 - end	Foraging	P.py	2	1	Very frequent foraging over surveyor and along hedgerow SE of site.
22:40	Pass	P.pi	1	1	Flew low S-N in front of SE gable.

### Roost emergence and bat activity details from Dusk 2, 5<sup>th</sup> June 2023, sunset 21:27

Time	Details	Species	No. Bats	Surveyor	Behaviour
21:49	<b>Emerged</b>	Pip. sp.	1	2	Emerged from 4 <sup>th</sup> tile south of ridge line of SE gable. No calls. Flew south to lane. No calls. <b>Roost 3</b>
21:55	Pass	P.pi	1	1	Flew W -E around neighbouring dwellings west gable.
21:56	<b>Emerged</b>	Pip. sp.	1	2	Emerged from under bargeboard to north of ridgeline of SE gable. No calls heard. Flew south to track. <b>Roost 4</b>
21:57	<b>Emerged</b>	Pip sp.	1	2	Emerged from 1 <sup>st</sup> tile south of ridge line of SE gable. Flew south to lane. <b>Roost 1</b>
21:16	Foraging	Pip. sp.	1	2	Looping S-N along SE gable.

22:20	<b>Emerged</b>	P.pi	1	2	Emerged from under bargeboard to south of ridgeline of SE gable. Flew low, south to track. <b>Roost 5</b>
22:20	Foraging	Pip. sp.	1	1	Foraging along track.
22:29	Foraging	P.pi	1	1	Foraging along track.
22:45	Pass	P.pi	1	2	Not seen.
22:50	Pass	N.no	1	1&2	Not seen.

#### Roost entry and bat activity details from Dawn survey, 13<sup>th</sup> July 2023, sunrise 05:08

Time	Details	Species	No. Bats	Surveyor	Behaviour
03:26	Pass	P.au	1	1	Faint call, not seen.
03:29	Pass	N.no	1	1	Heard, not seen.
03:33	Pass	N/K	1	1	Fast flight over ridge Se gable ridge.
03:53	Pass	P.au	1	1	Low flight E-W along track.
04:04	Pass	N.no	1	1&2	Heard, not seen.
04:07	Pass	P.pi	1	1	Low flight W-E along track.
04:11	Pass	N.no	1	1&2	Heard, not seen.
04:13-04:23	Foraging	P.pi	1	1	Multiple foraging loops along the track, and neighbouring garden to W.
04:22	<b>Entered</b>	P.pi.	1	2	Entered under bargeboard N of ridge line of SE gable. <b>Roost 6.</b>
04:23	<b>Entered</b>	Pip. sp.	1	2	No call. Entered under bargeboard N of ridge line of SE gable. <b>Roost 2.</b>
04:30	Investigating	P.pi	2	1	Two bats investigating the gable apex of the NE gable.
04:33	Investigating	P.pi	1	1	Bat investigating the bargeboards of the SE gable.
04:34	<b>Entered</b>	P.pi	1	2	Entered under bargeboard N of ridge line of SE gable. <b>Roost 2.</b>
04:34	Foraging	P.pi	1	1	Multiple foraging loops along the track, and neighbouring garden to W.
04:36	<b>Entered</b>	P.pi	1	1	Entered under gable ridge tile of NE gable. <b>Roost 9.</b>
04:48	Pass	P.pi	1	1	Flew E-W along track.
04:41	<b>Entered</b>	P.py	1	2	Entered under bargeboard N of ridge line of SE gable. <b>Roost 7.</b>
04:44	Investigating	P.py	1	2	Bat investigating roost access points along bargeboards of SE gable.
04:48	<b>Entered</b>	P.py	1	2	Entered under bargeboard N of ridge line of SE gable. <b>Roost 8.</b>
04:48	Pass	P.pi	1	1	Commuting E-W along track to neighbouring garden.

## 13 Appendix 4: Bat Roost Locations

### Southeast gable



#### **Roost location 1:**

Crevice between tile and bargeboard of first roof tile below ridge.

Dusk 1 x1 Soprano pipistrelle 21:26

Dusk 2: x1 pipistrelle sp. 21:57

**Roost location 2:** Crevice between stonework and bargeboard.

Dusk 1 x1 Common pipistrelle 21:29

Dawn x2 Common pipistrelle 04:32 and 04:34

#### **Roost location 3:**

Crevice between tile and bargeboard of 4th roof tile below ridge.

Dusk 2 x1 pipistrelle sp. 21:49

**Roost location 4:** Crevice between stonework and bargeboard.

Dusk 2 x1 pipistrelle sp. 21:56

**Roost location 5:** Crevice between stonework and bargeboard.

Dusk 2 x1 Soprano pipistrelle 22:20

**Roost location 6:** Crevice between stonework and bargeboard.

Dawn x1 Common pipistrelle 04:22

**Roost location 7:** Crevice between stonework and bargeboard.

Dawn x1 Soprano pipistrelle 04:41

**Roost location 8:** Crevice between stonework and bargeboard.

Dawn x1 Soprano pipistrelle 04:48



Image showing view of the south east gable, as seen at the darkest point through the infrared camera in the Dusk 1 survey.



Northeast gable



**Roost location 9:** Crevice under ridge tile.

Dawn x1 Common pipistrelle 04:36