



FULL BAT SURVEY FOR PRESENCE OF BAT ROOSTS:

Graig Madoc, Llanmihangel, Pyle, CF33 6RL

Client	Laura and Luke Healey
Site grid reference	SS 81753 82737
Survey dates	15 th April 2026 (PRA), 12 th May 2026 & 15 th June 2026
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SUMMARY

Spectrum Ecology was commissioned by Laura Healey to carry out surveys for the presence of bats and their roosts within the residential property known as Graig Madoc, located in Llanmihangel, Pyle, CF33 6RL (Ordnance Survey Grid Reference: SS 81753 82737). The surveys have been commissioned to support a planning application for new extensions, primarily to the rear of the property, which will involve alterations to the existing dwelling, including redevelopment of the roof section. The surveys will ensure that protected species are given due regard as part of the proposals.

A Preliminary Roost Assessment (PRA) of the property was carried out by Spectrum Ecology during the daytime on 15th April 2026. While no evidence of bats was found during the PRA, the property was found to hold moderate suitability for roosting bats, therefore requiring a further 2 evening emergence / flight surveys during the main activity period. The additional evening emergence / flight surveys for bats at the property were carried out on the 12th May 2026 & 15th June 2026.

The initial PRA found that the structure contained a number of potential roosting features, including certain gaps under the ridge tiles near the chimney, gaps between the barge boards and roof covering on the gable ends and gaps associated with the roof corners. The interlocking roof tiles were otherwise tight-fitting with no realistic roost access potential. Dense growth of Ivy was also noted on the north-east corner, which could provide potential roosting opportunities. Numerous gaps and potential access points were also noted around the roof section of the existing garage structure. Due to the relatively small size of the structure, all such features were able to be investigated at close hand with an endoscope, with no evidence found to suggest current or historical use by bats. The inside of the structure includes a small loft space with 3 access hatches. The small size of this void meant it was inaccessible for thorough investigation, but from the access hatches it could be observed that there was no light or other evidence suggesting bats were able to access. The eaves sections had been boxed in as storage cupboards and were fully accessible for investigation. No droppings, staining, feeding remains or any other evidence was found to suggest that the structure was being used by roosting bats.

The additional flight surveys **detected no emergence, re-entry to or activity within the immediate vicinity of the high potential roost features. However, bat activity was observed within the boundary of the property, and along the immediately adjacent country lane, comprising small numbers of foraging Common Pipistrelle bats (*Pipistrellus pipistrellus*).**

In accordance with Section 6 of the Environment (Wales) Act 2016, opportunities for ecological enhancement have been considered.

1. INTRODUCTION

1.1. Site Description

The structure is a single 2-storey dwelling within the rural area of Llanmihangel, Pyle. The structure is made of block and stone with cement render, with a single storey stone garage feature adjoined to the north-east section. The main dwelling has a timber-framed roof with tight-fitting interlocking tile covering and black plastic underlay with insulation. The garage feature has a flat roof comprised of corrugated concrete (possibly asbestos) and corrugated plastic sheets. The footprint of the main dwelling is 151sq.m.

1.1.1 The structure is currently occupied as the family home, while the garage structure is used for storage of assorted garden items and is in regular use. The eastern side of the garage structure is in close proximity to the boundary hedge.

1.1.2 The main dwelling structure is water-tight and in a generally sound condition. However the garage structure has multiple gaps and crevices in the exposed masonry, as well as around the roof section. There is some dilapidation around the roof corners of the main dwelling, with associated gaps and crevices. The soffits are tight-fitting with no associated gaps. There is a gap between the barge boards and the roof covering on the gable ends which could potentially provide roosting opportunity for bats.





Figure 1: Pictures of the Exterior of the Property 2026

1.1.3. *The site in the wider Environment:* The house is on the outskirts of the village of Pyle in Neath Port Talbot County, set within a very agricultural environment. The surrounding landscape is rural in character, with extensive woodland blocks to the north and north west in particular, and surrounded by mixed field and hedgerow systems. The property is accessed via country lane with high native-species hedges. This mix of semi-natural habitats in the immediate vicinity surrounding the structure provides ample opportunity for local bat populations. The M4 lies just over a kilometre to the west of the property.



Figure 2: Development Site in a Wider Landscape Context.

1.1.4. Map showing the location within the wider landscape:

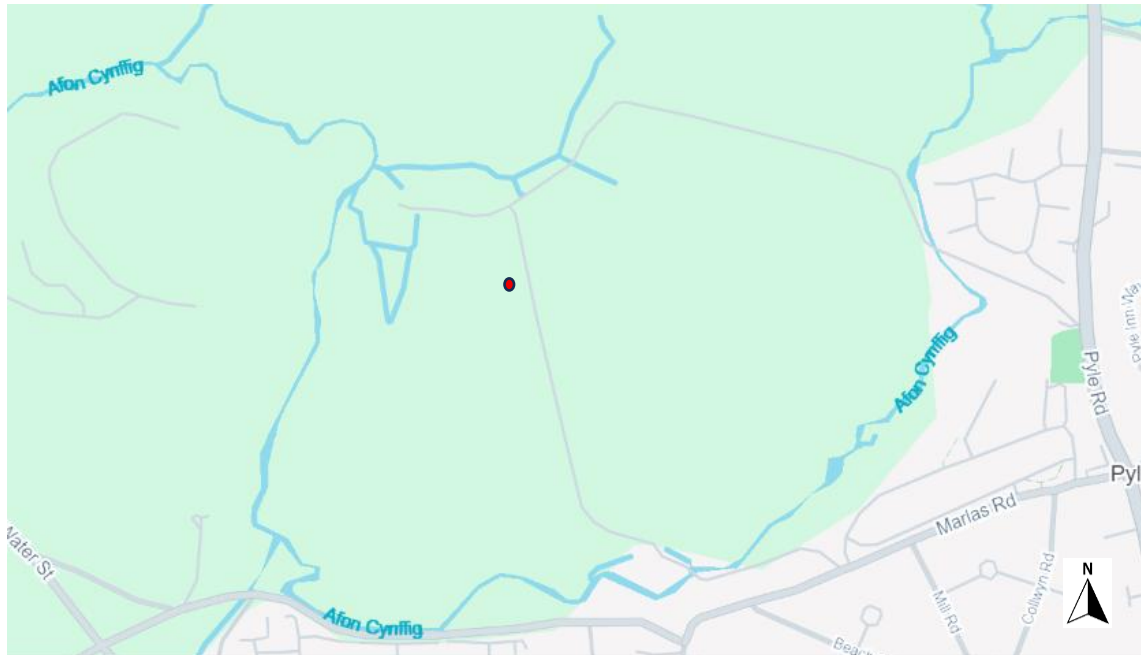


Figure 3: Development Site in a Wider Landscape Context

1.1.5. *Commuting and Foraging Habitat Suitability:* The site and immediate surrounding area should be considered to have **HIGH** suitability as foraging and commuting habitat as described by Table 4.1 (pg. 44) of the BCT Survey Guidelines. This is due to the optimum surrounding habitat, including the extensive woodland, hedgerow and mixed field systems, with the hedgerow network and the country lane providing excellent commuting corridors and connectivity with the wider landscape. Figure 2 above shows the close proximity of these habitat features to Graig Madoc.

1.2. Proposed Development

1.2.1. The proposed development relates to modest domestic extensions and alterations to the rear of the existing dwelling, alongside associated ancillary works. Key elements of the proposal include:

- Construction of 2 no. rear extensions, each measuring approximately 6m x 6m
- Extensions to be 1.5 storey with vaulted ceilings, located to the rear of the dwelling.
- A modest increase in the eaves height of the existing dwelling to improve internal functionality and energy efficiency.
- Replacement and repositioning of the existing garage further away from established trees and hedgerows
- The proposal would provide a more functional ancillary garage capable of housing two cars, a small tractor, and a dedicated plant room above.

The total increase in usable internal floor space from the rear extensions would be approximately 72 sq.m, representing an increase of circa 23% over the existing dwelling.

1.3. Historic Survey Effort & Data Trawl

1.3.1. It is understood that no previous surveys for bats or bat activity have been undertaken at the property.

- 1.3.2. A Local Environmental Records Check was commissioned from the South East Wales Biological Recording Centre (SEWBRc) – **LERC Reference: 0267-247**. This showed just 6 records for bats within a 1km radius of the property. The nearest was recorded simply as ‘bat’, just over 500 metres from the property. Pipistrelle species have been recorded from just over 700 metres from the property, and Brown long-eared bat recorded at 934 metres from the site. There were also a number of Lesser Horseshoe bat records starting from 1.3km from the property.

These records are few in number and do not constitute information that would suggest an increased likelihood or otherwise of bats being present within the surveyed property. The surrounding landscape presents optimum foraging habitat for bats, with veteran oak trees, agricultural buildings and other features with high roosting potential known to be present within the wider vicinity of the property, and it can be assumed that a number of bat species would be present more widely.

Notably, the nearby Margam Country Park (approximately 3.5km from the survey site but with excellent ecological connectivity) has recorded 14 species out of the 18 species of bat native to the UK ([Margam Country Park - A paradise for bats! 🦇](#)). This is further evidence for assuming that a number of bat species are present within the wider vicinity of Graig Madoc.

- 1.3.3. As mentioned above, the extensive foraging habitat found in the wider surrounding landscape beyond the residential footprint is considered to provide excellent foraging for a number of bat species.

1.4. Ecology of Bats

- 1.4.1. There are 18 species of bats, of which 17 are known to breed, in the United Kingdom. Most of them are regarded as threatened species, due to a variety of factors including habitat loss and disturbance/damage to roosts. Of these species, a number regularly use buildings or trees at certain times of year in order to find safe secure roost sites.
- 1.4.2. Bats are highly-mobile, flying mammals, which in the United Kingdom feed entirely on insects. Having evolved over seventy million years, they have developed sophisticated mechanisms to allow them effectively to ‘see’ in the dark by using sound. Called echolocation, this system allows them to hunt down and track small moving insects whilst in flight, much like advanced radar technology used in modern aviation.
- 1.4.3. In winter, when their prey is scarce, British bats hibernate in the cool parts of caves, buildings and tree cavities. They might wake occasionally and will feed if evening temperatures are greater than 7°C, when flying insects will be active, but specific temperature thresholds can vary among species and individuals. Generally, however, activity in winter is very limited, and bats only become fully active in spring.
- 1.4.4. In late spring, female bats will gather together in maternity roosts in order to give birth and rear their single baby in June. Such maternity roosts are often near to foraging areas in order to minimise energy usage, as flight requires vast energy resources.
- 1.4.5. Whilst females form maternity colonies, usually in warmer roofs or trees, male bats tend to

seek out cooler sites, which may not be so close to the foraging areas. Males are often solitary and do not exhibit the social behaviour that marks out females during the birthing period.

- 1.4.6. Several British bat species are known to rely heavily on buildings to roost. The Soprano pipistrelle bat, *Pipistrellus pygmaeus*, appears to be well represented in the county and can often be encountered in built structures, such as the building under survey, as can Common pipistrelle bats, *Pipistrellus pipistrellus*. The Brown long-eared bat, *Plecotus auritus*, is another species which commonly roosts in buildings and again is well represented in the county.

1.5. Relevant Legislation

- 1.5.1. All British bats are protected by the following legislation:

- 1.5.1.1. **The Conservation of Habitats and Species (amendment) (EU Exit) Regulations 2019** superseded The Habitats and Species Regulations 2010, and amended in 2017, as of January 1st 2021 and provides the same level of protections as the previous legislation - Annex IV of the European Communities Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora - which required the United Kingdom government to provide bats with strict protection.
- 1.5.1.2. **Schedule 5 of the Wildlife and Countryside Act 1981** (as amended). The marked decline of all British bats has resulted in their being given protection under Section 9 of the Act (through provisions in Schedule 5) making it illegal to intentionally kill, injure or take any British bat. It also made it an offence to intentionally damage or destroy their place of rest (the roost). In addition it's also an offence to intentionally or recklessly disturb a bat while it is occupying a structure or place used for shelter or protection, and to intentionally or recklessly obstruct access to any place used by bats for shelter or protection.
- 1.5.1.3. **The Environment Act (Wales) 2016, Section 6** - 'Biodiversity and resilience of ecosystems' which places a duty on public authorities under subsection (1) to 'seek to maintain and enhance biodiversity' so far as it is consistent with the proper exercise of those functions. In so doing, public authorities must also seek to 'promote the resilience of ecosystems'. The duty replaces the section 40 duties in the Natural Environment and Rural Communities Act 2006 (NERC Act 2006), in relation to Wales, and applies to those authorities that fell within the previous duty.

In complying with subsection (1), a public authority must take account of the resilience of ecosystems, in particular the following aspects:

- (a) diversity between and within ecosystems;
- (b) the connections between and within ecosystems;
- (c) the scale of ecosystems;
- (d) the condition of ecosystems (including their structure and functioning);
- (e) the adaptability of ecosystems

- 1.5.1.4. **Penalties for Non-Compliance:** It should be noted that violations of bat protection laws can result in significant penalties, including fines and imprisonment. For instance, under the Wildlife and Countryside Act 1981, offences can lead to an unlimited fine and/or up to six months in prison.

- 1.5.1.5. **Licensing for Activities Affecting Bats:** If any activity is likely to disturb bats or their roosts, a licence must be obtained from the relevant statutory nature conservation organisation (NRW in Wales). This includes activities such as building renovations, tree felling, or any development work that might impact bats.

2. PRELIMINARY ROOST ASSESSMENT (PRA)

2.1. Methodology

2.1.1. The PRA / building survey was undertaken on 12th May 2026.

2.1.2. A thorough investigation of all accessible features within the structure was carried out for potential roosting features, both internally and externally, as detailed below.

2.1.3. **Internal Inspection** – Due to the relatively small size of the 1.5 storey structure, all accessible areas were able to be inspected at close hand from ground level or from a ladder. High-powered focusable lamps were used to illuminate areas and high powered-focusable lenses were used to enhance inspections of the internal area. Internal features were exposed to inspection under UV light to search for evidence of staining. In addition to this, all accessible holes, cracks, crevices and cavities were inspected utilising an illuminated dual-camera endoscope with the ability to capture photographic evidence of the inspection.

2.1.4. **External Inspection** – The external surface of the walls and roof edges were able to be inspected at close hand due to the relatively small size of the structure. Gaps around the roof edges and within the masonry were thoroughly inspected using the endoscope. The roof covering of the main dwelling could not be inspected at close hand due to over-riding health and safety concerns, but a thorough observation was able to be made using the high-powered lamp and close-focusing monocular. Good views of all aspects were had from various vantage points, including ladders.

2.2. Constraints to Access

2.2.1. As detailed in section 2.1.4 above, the external roof covering could not be inspected at close hand but was subject to a thorough observation of all aspects. The only internal aspect of the structure not able to be assessed thoroughly at close hand was the full roof cavity, due to the prohibitively small size. However, access hatches provided opportunity to inspect certain sections at close hand, and larger sections with the aid of the spot lamp and close-focussing monocular. All other aspects – internally and externally – were able to be thoroughly investigated.

2.3. Results

2.3.1. **External Inspection:** The main residential dwelling building is of generally good condition, with no gaps or crevices associated with the masonry. The roof tiles are interlocking and tight-fitting. A small number of gaps are present beneath some of the ridge tiles where the mortar appears to have come away. The soffits are tight-fitting with no associated gaps. However, gaps are present along the top edge of the barge boards on the gable ends in certain sections, where they meet the roof edges. The gaps could potentially provide access to roosting bats. Certain gaps are also present on the roof edges where there is missing mortar beneath the tiles. With the

exception of gaps associated with the ridge tiles, all of these features were able to be investigated with the use of the endoscope and no evidence of roosting bats was found, including any droppings, staining or feeding remains.

- 2.3.2. The adjoining single-storey garage feature is of stone construction and generally in a more dilapidated condition than the main structure, with exposed masonry and numerous gaps and cavities associated with missing mortar. Numerous caps and cavities were also present along the flat roof edges. This includes gaps and cavities beneath the uPVC fascia boards, between the boards and the wall / masonry. All such features have potential for roosting bats and were able to be thoroughly searched using the endoscope and lamp. No evidence of roosting bats was found.
- 2.3.2. A dense covering of ivy is present on the north-east corner, where the main dwelling adjoins the garage feature, which could provide opportunities for roosting bats. This was able to be thoroughly investigated with no evidence found.
- 2.3.3. **No bats or their field signs were found in or around any of the potential roosting features identified.**
- 2.3.4. The property is located within highly suitable surrounding habitat which has high potential for a number of bats species. The location has very good ecological connectivity to the wider landscape via the surrounding fields, hedgerows and green lanes, and the property contains a number of features known to be used by roosting bats. The structure contains a number of discrete crevice features capable of supporting individual bats, despite otherwise being of relatively modern and well-sealed construction. The structure should therefore be deemed to have **moderate suitability** for roosting bats, as assessed according to the BCT bat survey guidelines (4th edition 2022).
- 2.3.5. **PRA Summary:**

Feature	Description	Bat Potential
Ridge tiles	Localised gaps	Moderate
Roof corners	Localised gaps (missing mortar)	Moderate
Barge boards	Localised crevices	Moderate
Ivy	Dense ivy on NE elevation	Low-Moderate
Garage masonry	Numerous crevices	Moderate
Garage fascia boards	Numerous crevices (rear)	Moderate
Roof void	Modern insulated construction	Low
Evidence	Droppings, staining etc.	None

Photographs of Potential Roost Features (PRFs):

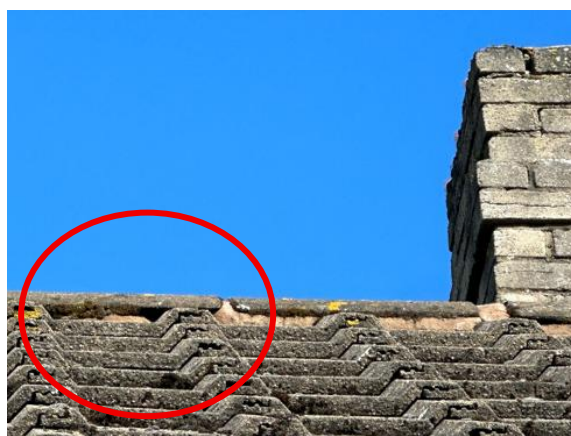


Figure 4: External features

2.4 Internal inspection: The main dwelling is 2 storeys, with the 2nd storey built into the roof section, leaving only a small roof void along the ridge. This was not fully accessible due to the prohibitive size, but certain sections could be investigated via 3 access hatches. The eaves sections along the edges have been boxed in as storage cupboards and were fully accessible for inspection. From those inspections that were possible of the roof void along the ridge, it was observed that insulation was present throughout, backed with a plastic membrane. There was no visible light-bleed into the void which can be suggestive of potential access points. No droppings, staining, feeding remains or other evidence of roosting bats was found.

The interior of the garage feature is in regular use and functions as storage space for children's bikes, cut logs and garden equipment. The flat roof forms the ceiling and there is no roof cavity. There are potential access points to the interior via gaps along the roof edges and via the open doorway. There is exposed masonry internally as well as externally, with numerous associated gaps which could potentially provide opportunities for roosting bats, although this is less likely within a ground floor structure in regular use.



Figure 5: Internal Images

- 2.4.1. **All accessible areas of the interior were thoroughly searched for bats (alive / dead), droppings, staining, feeding remains and other evidence of roosting bats, with no such evidence found.**

2.5. Surrounding landscaping

- 2.5.1. The property is currently a permitted dwelling within a Green Wedge on the outskirts of the village of Pyle. The area immediately surrounding the property has been adapted to residential use with areas of hardstanding to the south and south-east. The immediate north and north-west has been developed into a garden with mixed tree planting, including a small orchard to the immediate west. A larger paddock area extends to the south and the overall grounds are bordered by hedgerow and accessed via a country lane. The wider landscape is agricultural; with a mix of fields, hedgerows and woodland blocks.
- 2.5.2. The immediate surrounding area should be considered to have **HIGH** suitability as foraging and commuting habitat as described by Table 4.1 (pg. 44) of the BCT Survey Guidelines. This is due to the mix of habitats – including fields, field margins, native-species hedgerows and woodlands – providing high quality foraging habitat; and the habitat mosaic in general, including linear features such as the wooded lane and hedgerow networks, providing excellent ecological connectivity and commuting corridors.

2.6. Other species

- 2.6.1. No evidence of active or old birds' nests was found during the survey. However, the existing garage structure in particular presents opportunities for nesting birds such as wren and other small birds, and vigilance should be maintained during any works in the nesting season (March – August inclusive). No evidence of any other notable species was found.
- 2.6.2. There were no access points that were suitable for use by owls within the main dwelling, and the garage structure was deemed suboptimal for use by owls due to its small size and height. No evidence of owl pellets was present in or immediately surrounding either structure.

3. FLIGHT SURVEY

3.1 Method

- 3.1.1 The methodology used to undertake the surveys detailed in this report conform with the guidelines set out in the Bat Conservation Trust's guidance - Bat Surveys: Good Practice Guidelines 4th Edition (BCT, 2022) and the addendum relating to Night Vision Aids.
- 3.1.2 *Dusk Survey* – The features will be visually observed by an appropriately experienced surveyor from a clear view point. Each surveyor will be equipped with at least one heterodyne bat detector to record the ultrasonic calls made by any bats present in the area. The survey will commence at least 20mins prior to sunset and be concluded 120mins after sunset to ensure that the typical emergence times of all species are covered.
- 3.1.3 All surveys will be conducted under suitable weather conditions and conducted within the peak survey season for bats in the UK (May-Aug).

3.2 Equipment

- 3.2.1 All surveys were carried out with the aid of a Batbox Duet heterodyne / frequency division bat

detector, a Wildlife Acoustics Echo Meter Touch 2 Pro recorded onto a smartphone/tablet. A Night Vision Aid – Nightfox Whiskers – was also used, as per the updated NVA guidelines.

3.3 Constraints to survey

- 3.3.1 No problems were encountered in finding or accessing the site. A good clear view of the structures was achieved from the selected vantage points.
- 3.3.2 The climatic conditions during the survey periods were compliant with the optimal survey conditions.
- 3.3.3 As a result of the above, the surveyors are confident that the assessment at the site has been as thorough as the Bat Conservation Guidelines require.

3.4 Dusk emergence results

- 3.4.1 The first dusk emergence survey was carried out on the 12th May 2026

Table 1: Flight survey conditions

Date & time	12/05/2026, 20:30hrs - 22:50hrs
Survey type	Evening emergence survey
Temperature	13 °C, dropping to 12°C by 22:50hrs
Weather conditions	Dry, calm, occasional moderate breeze, 2 oktas no cloud cover
Sunset time	20:52hrs

The climatic conditions during the survey were optimal for detection of bats

Table 2: Flight survey results - 12/05/2026

Time	Species	Surveyor	Observation
21:11	Noctule	1 & 2	Detected to the west
21:23	Noctule	1 & 2	Detected and observed, foraging over fields to the west
21:31	Noctule	1 & 2	Detected and observed, foraging over fields to the west
21:36	Noctule	1 & 2	Detected not observed
21:34	Common pipistrelle	1 & 2	Commuting along lane to immediate east of the property, flying south to north
21:56	Common pipistrelle	1 & 2	Commuting along lane to immediate east of the property
22:16 – 22:31	Common pipistrelle 5 passes	1 & 2	Foraging beyond hedgerow boundary to north of the property

- 3.4.2 No bats were noted emerging from the main dwelling or from the garage feature at any point during the survey.
- 3.4.3 While bat activity was observed in the vicinity of the structure, the total numbers of bats observed was relatively small - the peak count was 1 individual at any point during the survey.
- 3.4.4 No pipistrelle bats were noted prior to or within 30mins of sunset.

3.4.5 No bats were detected after 22:31

3.4.6 The second dusk emergence survey was carried out on the 15th June 2026

Table 3: Flight survey conditions

Date & time	15/06/2026, 21:00 - 23:30
Survey type	Evening emergence survey
Temperature	14 °C, dropping to 13°C by 23:30hrs
Weather conditions	Dry at start of survey, moderate breeze, overcast with 8 oktas cloud cover, light rain from 22: 50hrs
Sunset time	21:33 hrs

3.4.7 The climatic conditions during the survey were good for detection of bats

Table 4: Flight survey results - 15/06/2026

Time	Species	Surveyor	Observation
21:52	Noctule	2	Pass – fields to south-west of property
21:58	Noctule	1&2	Foraging over fields to west of property
22:04	Common pipistrelle	1 & 2	Commuting along lane to immediate east of the property, flying south to north
22:07	Common pipistrelle	1 & 2	Commuting along lane to immediate east of the property, flying south to north
22:08	Common pipistrelle	1 & 2	Detected not observed
22:11	Common pipistrelle x 2	1	Pass – flying over hedgerow boundary from adjacent lane to the east, past north-facing elevation of property heading west across garden and exiting over hedgerow boundary to the west
22:32	Common pipistrelle	1 & 2	Detected, not seen
22:36 – 22:41	Common pipistrelle	1 & 2	Foraging beyond hedgerow boundary to the north-east of the property
22:54	Common pipistrelle	2	Detected not observed

3.4.8 No bats were noted emerging from any of the structures within the property boundary at any point during the survey.

3.4.9 A relatively small number of bats were detected during the survey – a maximum peak count of 2 common pipistrelles at any one time during the survey.

3.4.10 No pipistrelle bats were noted prior to or within 30 mins of sunset.

3.4.11 Surveyor positions and observed flight paths of Common pipistrelle bats:



Figure 6: Observed bat flight paths (Noctule bat = blue, Common pipistrelle = yellow)



Figure 7: Surveyor locations during Dusk Emergence Surveys

4 DISCUSSION

4.1 The Preliminary Roost Assessment identified a number of features on the main dwelling with the potential to support crevice-dwelling bats, principally gaps beneath ridge tiles, around roof corners and between the barge boards and roof covering. Dense ivy growth on the north-east elevation also provided some limited additional roosting potential. The adjoining garage contained numerous gaps associated with the masonry and roof structure; however, these were fully inspected using an endoscope where accessible, and no evidence of current or historic bat use was identified. The dwelling was therefore appropriately assessed as being of **moderate suitability** for roosting bats, in accordance with the Bat Conservation Trust Guidelines, requiring two dusk emergence surveys.

- 4.2** Although the identified Potential Roost Features were sufficient to classify the dwelling as having moderate suitability for roosting bats, the building offers only **limited potential for hibernation**, owing to its relatively modern, well-sealed construction, insulated roof structure and the absence of deep, thermally stable voids or crevices typically associated with hibernation sites. Furthermore, no evidence indicative of hibernating bats, such as accumulations of droppings within sheltered locations, staining, feeding remains or accessible deep crevices suitable for prolonged winter occupation, was identified during the Preliminary Roost Assessment.
- 4.3** The two dusk emergence surveys recorded no bats emerging from, re-entering or exhibiting behaviour associated with roosting within either the dwelling or the garage. The absence of emergence from all identified Potential Roost Features, despite surveys being undertaken during the main bat activity season under suitable weather conditions, provides confidence that the structures are not currently supporting a maternity, day or transitional roost.
- 4.4** Small numbers of Common Pipistrelle (*Pipistrellus pipistrellus*) were recorded commuting and foraging within the property boundary and along the adjacent country lane. This activity comprised typical low-level foraging and commuting behaviour associated with the surrounding hedgerow network and did not indicate emergence from, re-entry to, or any particular association with the surveyed dwelling or garage. Occasional Noctule bats (*Nyctalus noctula*) were also recorded foraging high over the agricultural fields to the west of the dwelling. This represented typical open-country foraging behaviour some distance from the surveyed structures; Noctule is a predominantly tree-roosting species and the observations did not indicate any association with the dwelling or garage.
- 4.5** The proposed development comprises extensions to the rear of the dwelling, a modest increase in eaves height and the replacement/repositioning of the existing garage, while remaining within the established residential curtilage. The proposals will involve works to elements of the existing roof where potential roosting features were identified during the PRA. However, in light of the negative emergence surveys and the absence of any evidence of bat use during the daytime inspection, it is considered unlikely that the proposals will result in impacts upon a bat roost.
- 4.6** Taken together, the findings of the Preliminary Roost Assessment, the absence of field signs, the results of two negative emergence surveys and the nature of the recorded bat activity provide a consistent body of evidence indicating that the surveyed structures are not currently used as bat roosts.
- 4.7** Nevertheless, bats are highly mobile species capable of occupying suitable features at short notice. Consequently, while no derogation licence is considered necessary on the basis of the survey findings, a precautionary approach during construction remains appropriate.

5 ASSESSMENT OF IMPACT

- 5.1** The proposed development will involve alterations to elements of the existing roof where Potential Roost Features were identified during the Preliminary Roost Assessment. However, no evidence of current or historic bat use was identified during the daytime inspection, and two dusk emergence

surveys undertaken in accordance with Bat Conservation Trust Good Practice Guidelines recorded no bats emerging from, re-entering or otherwise exhibiting behaviour indicative of roosting within either the dwelling or the garage.

5.2 Although low levels of Common Pipistrelle and Noctule activity were recorded within the wider landscape, this comprised typical commuting and foraging behaviour and was not associated with the surveyed structures. The proposed development does not block or otherwise impact observed flight paths. Consequently, it is considered unlikely that the proposed development will result in the loss or disturbance of a bat roost or otherwise have a significant adverse effect on bats.

6 PRECAUTIONARY MEASURES AND BIODIVERSITY ENHANCEMENTS

6.1 No bats were found to be using the dwelling or garage during either the Preliminary Roost Assessment or the subsequent dusk emergence surveys. Consequently, no specific mitigation for the loss of a bat roost is required and, based on the survey evidence, the proposals can proceed without the need for a derogation licence from Natural Resources Wales.

6.2 As a precaution, where any works involve the removal of roof coverings, fascia boards, ridge tiles or other features identified as Potential Roost Features during the PRA, these elements should be dismantled carefully by hand wherever reasonably practicable. If at any stage a bat, or evidence of bats, is discovered during the works, all work in the affected area must cease immediately and advice sought from a suitably licensed bat ecologist before works recommence.

6.3 As bats are highly mobile flying animals, known to be present in the vicinity and may set up new roosts at any time, all contractors carrying out works should be warned of the possible presence of roosting bats, and of their protected status. It should be clearly understood that in the event of any bats being found during the works, all works should cease in the affected area until appropriate expert advice has been sought from Natural Resources Wales or the authors of this report.

6.4 The surrounding landscape provides high quality commuting and foraging habitat for bats. Good site practice should therefore be adopted during construction, including:

- avoiding unnecessary night-time lighting where possible;
- directing any temporary lighting away from adjacent hedgerows, trees and retained vegetation;
- ensuring any lighting required for safety is kept to the minimum necessary and is switched off when not required.

6.5 In accordance with Section 6 of the Environment (Wales) Act 2016, opportunities to enhance biodiversity should be incorporated within the development. Although no bat roost was identified, the dwelling lies within high quality commuting and foraging habitat. The measures outlined below therefore represent a proportionate biodiversity enhancement consistent with Section 6 of the Environment (Wales) Act 2016. Suitable measures include:

- installation of at least two integrated bat roost features (such as integrated bat boxes or bat bricks) within the completed dwelling – high up on the gable ends where they will not be illuminated by light-spill.
- retention and protection of existing mature hedgerows and trees wherever practicable;
- retention of the proposed pond, tree planting and habitat creation described within the development proposals, which will further enhance foraging opportunities for bats; and
- implementation of a sensitive external lighting scheme to maintain dark corridors along hedgerows and site boundaries

The incorporation of these enhancement measures will provide a net biodiversity benefit for bats and other wildlife while being consistent with the biodiversity duty placed upon public authorities under Section 6 of the Environment (Wales) Act 2016.

6.6 As previously stated, bats are highly mobile flying animals which may set up new roosts at any time. Therefore this report can only be considered valid for 24 months. If no development of the site has been undertaken within twenty four months of this survey, it is recommended that a further survey for use by bats should be carried out before proceeding with any potentially disturbing works.

7 OVERALL CONCLUSIONS

7.1 Spectrum Ecology was commissioned to undertake a Preliminary Roost Assessment (PRA) and subsequent dusk emergence surveys in support of proposals for extensions and alterations to the existing dwelling at Graig Madoc, Llanmihangel, Pyle.

7.2 The PRA identified a number of Potential Roost Features associated with the dwelling and, in accordance with current Bat Conservation Trust Guidelines, the building was assessed as having **moderate suitability** for roosting bats. Two dusk emergence surveys were therefore undertaken during the main bat activity season.

7.3 No evidence of bats or bat roosts was identified during the daytime inspection, and no bats were recorded emerging from, re-entering or otherwise using the dwelling or garage during either of the emergence surveys. Whilst Common Pipistrelle and Noctule bats were recorded foraging and commuting within the wider landscape surrounding the property, no activity indicated that either structure was being used as a bat roost.

7.4 The surveyed structures are also considered to offer only limited potential for hibernating bats, and no evidence was identified during the Preliminary Roost Assessment to indicate winter use of the buildings.

7.5 Based on the survey findings, it is concluded that the proposed development is **unlikely to result in impacts upon roosting bats** and that **no European Protected Species licence is considered necessary** in relation to bats, based on the survey evidence detailed in this report, provided that the works are undertaken in accordance with the precautionary recommendations contained within this report.

7.6 The surrounding landscape provides high-quality commuting and foraging habitat for bats, and the incorporation of the recommended biodiversity enhancement measures, including integrated bat roost features and sensitive lighting design, will contribute towards fulfilling the biodiversity duty under **Section 6 of the Environment (Wales) Act 2016** and provide a net benefit for local bat populations.

7.7 Despite the lack of evidence for bats currently or historically using the building as a roost site, when re-development works proceed, it is essential that the services of a licensed, on-call bat ecologist be retained throughout works in order to provide advice in the event that bats are encountered during works.

7.8 Bats are highly mobile flying animals which may set up new roosts at any time, therefore this report can only be considered **valid for 24 months**.

8 SURVEYOR EXPERIENCE

8.1 The lead surveyor, and author of this report, was Daniel Lock (Licence Number S096143/1), assisted by surveyor Emma Lock, an accredited agent on the same licence.

8.2 Daniel is a NRW licensed bat worker and has held protected species licences for over 17 years, with over 19 years surveying and bat monitoring experience.

8.3 Within the course of his career, Daniel has also been involved in monitoring and surveying of other European protected species such as Dormouse and Great crested newt and is licenced for those species. He has worked extensively in habitat management for the enhancement of protected species. Spectrum Ecology have undertaken a number of surveys in the local area and are familiar with the area and the locations of known bat roosts therein.

8.4 The Spectrum Ecology founding team, Dan Lock and Leigh Tuck have worked extensively in the film and TV industry providing ecological advice, reports and services for 'on-location' filming at sensitive sites for international companies such as Disney, Netflix, Universal, Amazon, HBO and Lucasfilm. Recently providing ecological advice and services across mid and north Wales for Amazon and HBO, as part of filming upcoming seasons of *House of the Dragon* and *Rings of Power*.

9 REFERENCES

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