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**BARN AT TY MAWR
PONTFADOG
LLANGOLLEN
WREXHAM
LL20 7AS**

BUILDING DEVELOPMENT

Protected Species Surveys



Barn at Ty Mawr, Pontfadog.

Client	Mr & Mrs GO & ML Jones
Planning Authority	Wrexham County Borough Council
Grid Reference	SJ23303825
Dates of Surveys	24 September 2019, 15 and 31 August 2020
Reference	102020/PSS/GJ



PRO3755



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TABLE OF CONTENTS

1.0 SUMMARY	3
2.0 INTRODUCTION	4
2.1 Brief	
2.2 Purpose of this report	
2.3 Scope of report	
2.4 Relevant background information	5
2.5 Qualifications	
2.6 Copyright	
3.0 DATA COLLECTION	6
3.1 Site Description	
3.2 Methodology	7
3.3 Results	
4.0 SITE EVALUATION	10
5.0 IMPACT ASSESSMENT	10
5.1 Short-term impact	
5.2 Long-term impact – roost losses	
5.3 Long-term impact – fragmentation and isolation	
5.4 Post-development interference impacts	11
5.5 Predicted scale of impact	
6.0 CONCLUSIONS	11
7.0 MITIGATION AND RECOMMENDATIONS	12
7.1 Compensation	
7.2 Reasonable Avoidance Measures	
7.3 Bat roosting opportunities	13
7.4 Lining the interior walls	14
7.5 Roof Insulation	
7.6 Timber treatment	
7.7 Lighting	15
7.8 Bird nesting opportunities	
8.0 WILDLIFE AND THE LAW	15
8.1 European Protected Species	
8.2 Other Protected Species – Nesting Birds	18
8.3 Environment (Wales) Act 2016	19
8.4 Planning Policy Wales (PPW 2018)	
8.5 Key Principles of PPW (2018)	
APPENDICES	
Appendix 1 – Site Plan	21
Appendix 2 – Photographs	22
Appendix 3 – Grading System for Bat Habitats	24
Appendix 4 – Bat Sonographs	25
Appendix 5– Mitigation Details	28
Appendix 6 – Bibliography	31



1.0 SUMMARY

The proposed works is change of use from farm building/barn and convert to holiday accommodation. The planning process requires that ecological surveys be carried out to highlight any potential conflict regarding the protected species (bats and birds), and the proposed development work.

An initial scoping survey was carried out on 24 September 2019 by licensed bat worker, Stephen Cutmore. Evidence of recent bat activity was observed in the form of scattered bat droppings on the floor, near the West gable-end and some scattered discarded butterfly wings near the East gable-end. The smooth, tapered droppings approx. 9mm length appear to be *Pipistrelle* spp.

During the emergence surveys a number of crevice-dwelling bat species were observed emerging from the barn. The barn at Ty Mawr, Pontfadog is therefore a confirmed roost, being used by up to 4 x Common Pipistrelles, 2 x Soprano Pipistrelles and 1 x Whiskered as small day-roosts. A Brown Long-eared, Noctule and Natterer's bats were also detected foraging in the vicinity. 1 x Lesser Horseshoe bat was observed emerging from the barn to the Northwest of the barn being surveyed (no works proposed for this other barn).

The proposed works is change of use from farm building/barn and convert to holiday accommodation. This proposed work would result in the disturbance/destruction of small day-roosts, therefore a derogation licence will be required from Natural Resources Wales, to avoid an offence being committed.

Mitigation in the form of compensation will be required. If suitable mitigation is provided, Reasonable Avoidance Measures in the form of timing of operations are implemented and bat-friendly features are incorporated into the development as enhancements, the proposed scheme is likely to have a low impact on the favourable conservation status of the locally recorded bats and likely have a positive effect on locally recorded bats.



2.0 INTRODUCTION

2.1 Brief

Stephen Cutmore, a licensed bat worker (NRW[S087991/1], NE[2015-16936-CLS-CLS]), was commissioned by Mr & Mrs GO & ML Jones, to carry out a protected species survey of the barn at Ty Mawr, Pontfadog, Llangollen, Wrexham, LL20 7AS.

The definition of the assignment was to:

1. Carry out an initial day-time visual scoping survey of the building to examine if there is any evidence of recent bat use or nesting birds.
2. Carry out further emergence surveys.
3. Provide a report with mitigation measures.

2.2 Purpose of this report

The purpose of this report is to advise you of the results of the parts 1 & 2 of the assignment. These results are set forth in the *Conclusions* section, following. This report describes the field conditions as found and interpreted.

2.3 Scope of report

Date of consultation.

The field surveys were made on 24 September 2019, 15 and 31 August 2020 and observations and conclusions are as of those dates.

Limit of scope.

This is solely a protected species survey results report and cannot comment on topics outside this discipline. If additional advice is required, it is strongly recommended that other professionals are consulted.

Unless stated otherwise:

- 1) information contained in this report covers only those buildings that were examined:
- 2) the inspection is limited to visual examination of the buildings, utilising a high powered torch and endoscope. Electronic bat detectors are utilised on emergence surveys.
- 3) there is no warranty or guarantee, expressed or implied, that bats may not utilise the buildings after the survey has been completed, that are not discovered utilising the buildings during the inspection. Bats are highly mobile and some species frequently move roosts. It may be possible that bats could move into a building after a survey has taken place. An assessment of the suitability of the building to support roosting bats has therefore been carried out, to establish the likelihood of this occurring.
- 4) this report has been prepared for the sole use and benefit of the client. Any liability of Stephen Cutmore Arboricultural & Ecological Services shall not be extended to any third party.



2.0 INTRODUCTION (continued)

2.4 Relevant background information

The proposed works is change of use from farm building/barn and convert to holiday accommodation. The planning process requires that ecological surveys be carried out to highlight any potential conflict regarding the protected species (bats and birds), and the proposed development work. The results of the surveys will guide what mitigation/compensation measures are required.

2.5 Qualifications

Stephen Cutmore has over twenty years' experience as an arboricultural and ecological consultant. Stephen holds a BSc (Hons) in Arboriculture & Urban Forestry and is a Chartered Arboriculturist. Stephen is a member of the Bat Conservation Trust (102994) and a member of Clwyd Bat Group. Stephen has been a Licenced Bat Worker since May 2007 and a Licenced Amphibian Worker since March 2011 and currently holds bat licences with NRW and NE (NRW[S087991/1], NE[2015-16936-CLS-CLS]) and GCN licences with NRW and NE (NRW[78772a:OTH:SA:2018], NE[2016-19908-CLS-CLS]).

2.6 Copyright

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3.0 DATA COLLECTION

3.1 Site Description

The barn at Ty Mawr, Pontfadog, Llangollen, Wrexham, LL20 7AS, is located at Grid Reference SJ23303825. The site is located approx. 200m to the North of the village of Pontfadog, in the Ceiriog Valley. The B4500 is approx. 200m to the South.

The River Ceiriog lies approx. 200m to the South of the site, with flows into the River Dee. Other small watercourses are in the locality. The surrounding landscape has pasture fields, trees and hedgerows. Areas of woodland are in the locality, including Coed Brongyll (approx. 250m to Southwest) and Coed Pen Craig (approx. 250m to South). All these landscape features provide good habitat for foraging bats.

The Cofnod (Local Ecological Records Centre) website was accessed (www.cofnod.org.uk) and a Cofnod Data Request [E08436] was made for a data search for bats and roof-nesting birds within a 500m radius of the site. Due to the sensitivity of the data, specific records for protected species cannot be disclosed, but there are records of Brown Long-eared, Pipistrelle spp. and an unknown bat species bats within 500m radius of the site. Records of bird species include Blue Tit, Great Tit, House Martin, House Sparrow, Swallow, Swift and Wren. Designated sites within 500m radius include River Dee [SSSI], River Dee and Bala Lake [SAC], Coed Brongyll (Wildlife Site), Coed Pen Graig (Wildlife Site), Coed Garth (Wildlife Site), Cilcochwyn (Wildlife Site) and several Ancient Semi Natural Woodland sites.



Figure 1: Aerial photograph of Ty Mawr, Pontfadog, showing good connectivity in the surrounding landscape.



3.0 DATA COLLECTION (continued)

3.2 Methodology

3.2.1 Bats

A day-time building survey was carried out on 24 September 2019, by licensed bat worker, Stephen Cutmore. The structure of the building was visually examined, utilising a high powered torch and an endoscope. The walls (both internal and external), floor, and all accessible roof spaces, crevices and other potential roosting areas were methodically closely visually examined for signs of bat occupation, in the form of droppings, feeding remains, staining around crevices, as well for the animals themselves. The building was also assessed for potential habitat for roosting bats.

3.2.2 Other protected species

The building was visually examined for the presence of and evidence of recent use by birds.

3.2.3 Emergence surveys

Due to the Covid-19 pandemic, there was a delay before further emergence surveys were carried out on 15 and 31 August 2020, by Stephen Cutmore and three assistant surveyors. The surveyors took up strategic positions around the building, which was visually monitored to check for any emerging bats. Electronic bat detectors (Anabat Walkabout), were used to record and analyse the frequencies of bat echo-location calls. The observed flight pattern of the observed bats and the frequency of the echolocation calls enabled the species of bat to be identified.

3.3 Results

3.3.1 Bat scoping survey

Description

The detached barn/outbuilding has stone walls supporting a traditional timber roof, covered with natural slates. The ground floor is comprised of a former milking parlour and storage rooms. The upper floor is a hayloft.

Ground floor of barn

No bats were encountered, but this was expected, due to the time of year. No evidence of recent bat activity was observed, in the form of bat droppings etc.

Upper floor of barn

The South pitch of the roof has 1F bitumastic felt beneath the slates, whilst the North pitch has no underfelt. A moderate level of natural light is penetrating the upper level through the broken window in the East gable-end. No bats were encountered. Evidence of recent bat activity was observed in the form of scattered bat droppings on the floor, near the West gable-end and some scattered discarded butterfly wings near the East gable-end. The smooth, tapered droppings approx. 9mm length appear to be *Pipistrelle* spp.



3.0 DATA COLLECTION (continued)

3.3 Results

3.3.1 Bat scoping survey

External walls and roof

No evidence of recent bat activity was observed, in the form of bat droppings on the walls, window sills etc. A few gaps were observed beneath slates and ridge tiles and beneath the eaves and wall. A few gaps were observed in the exterior stonework.

Potential for bats

The barn was assessed as having a moderate potential for bats. The surrounding habitat was assessed as having a high potential for bats.

3.3.2 Nesting birds

There was evidence of nesting birds observed in the ground floor and in the upper level of the barn, in the form of Swallow nests (*Hirundo rustica*).

3.3.3 Emergence surveys

1st survey evening emergence 15 August 2020

The emergence survey started at 20.42hrs, with sunset time of 20.38hrs. The starting air temperature was recorded as 19°C. The weather was dry, overcast with 70% cloud cover. There was a gentle breeze.

The survey was stopped at 22.10hrs, with a finishing temperature of 17°C.

The first bat was detected at 20.0641hrs and observed foraging over the field to the South of the barn. Echolocation calls recorded [45kHz] identified it as a Common Pipistrelle (*Pipistrellus pipistrellus*).

At 20.47hrs a bat was detected foraging over the field to the South of the barn. Echolocation calls recorded [55kHz] identified it as a Soprano Pipistrelle (*Pipistrellus pygmaeus*).

At 20.48hrs a Common Pipistrelle was observed emerging from the eaves at the South corner near the West gable-end. At 20.50hrs and 20.54hrs two Common Pipistrelles were observed emerging from the apex of the West gable-end. At 20.56hrs a Common Pipistrelle was observed emerging from the eaves of the South elevation, near the slit openings towards the West gable-end.

At 20.51hrs a bat was observed flying high over the site. Echolocation calls recorded [18kHz] identified it as a Noctule (*Nyctalus noctula*). This bat was observed making frequent foraging/commuting passes over the site during the survey.

At 21.06hrs a bat was observed emerging from the window above the middle door of the North elevation of the barn. Echolocation calls recorded [47kHz] identified it as a Myotis species. The call was analysed using Anabat Insight software, which identified it as a Whiskered (*Myotis mystacinus*). This bat made several foraging/commuting passes around the barn during the survey.



3.0 DATA COLLECTION (continued)

3.3 Results

3.3.3 Emergence surveys

1st survey evening emergence 15 August 2020

At 21.20hrs a bat was observed flying from the trees by the stream, to the East of the barn. The bat was very quiet and no call was recorded. At 21.35hrs the bat was observed foraging along the road/track to the North of the barn. The fluttering flight and large ears observed, together with the echolocation call recorded [33kHz] and analysis with Anabat Insight, identified it as a Brown Long-eared (*Plecotus auritus*).

The Pipistrelle species bats constantly foraged around the barn (North and South sides) throughout the survey.

2nd survey evening emergence 31 August 2020

The emergence survey started at 19.45hrs, with sunset time of 20.01hrs. The starting air temperature was recorded as 14°C. The weather was dry and overcast with 80% cloud cover. There was a gentle breeze.

The survey was stopped at 21.30hrs, with a finishing temperature of 14°C.

The first bat detected at 19.45hrs was a Common Pipistrelle, observed emerging from the apex of the West gable-end of the barn. At 20.14hrs another Common Pipistrelle emerged from the same location.

At 20.05hrs a Soprano Pipistrelle was observed emerging from the right-hand side of the East gable-end of the barn. At 20.12hrs another Soprano Pipistrelle emerged from the same location.

At 20.14hrs a Noctule bat was observed flying high over the field to the North of the barn. This bat made frequent foraging/commuting passes over the field during the survey.

At 20.25hrs a Whiskered bat was observed emerging from the window above the middle door of the North elevation of the barn.

At 20.57hrs a bat was observed foraging in the field to the South of the barn. Echolocation calls recorded [47kHz] identified it as a Myotis species. The call was analysed with the Anabat Insight software, which identified it as a Natterer's (*Myotis nattereri*).

At 20.52hrs a bat was observed emerging from the barn to the Northwest of the barn. Echolocation calls recorded [108kHz] identified it as a Lesser Horseshoe (*Rhinolophus hipposideros*).

The Pipistrelle species bats spent most of the survey constantly foraging around the barn and field to the South.



4.0 SITE EVALUATION

During the scoping survey no bats were encountered (not surprising due to the time of year). Evidence of recent bat activity was observed in the form of scattered bat droppings on the floor, near the West gable-end and some scattered discarded butterfly wings near the East gable-end. The smooth, tapered droppings approx. 9mm length appear to be *Pipistrelle* spp.

During the emergence surveys, up to 4 x Common Pipistrelles, 2 x Soprano Pipistrelles and 1 x Whiskered were observed emerging from the barn. A Brown Long-eared, Noctule and Natterer's bats were detected foraging in the vicinity. 1 x Lesser Horseshoe bat was observed emerging from the barn to the Northwest of the barn being surveyed (no works proposed for this other barn).

The River Ceiriog lies approx. 200m to the South of the site, with flows into the River Dee. Other small watercourses are in the locality. The surrounding landscape has pasture fields, trees and hedgerows. Areas of woodland are in the locality, including Coed Brongyll (approx. 250m to Southwest) and Coed Pen Craig (approx. 250m to South). All these landscape features provide good habitat for foraging bats.

The Cofnod Data Request [E08436] shows there are records of Brown Long-eared, *Pipistrelle* spp. and an unknown bat species bats within 500m radius of the site.

The barn/outbuilding was assessed as having a moderate potential for bats. The surrounding habitat was assessed as having a high potential for bats.

5.0 IMPACT ASSESSMENT

5.1 Short-term impact

Disturbance through increased human presence, noise and changes in site layout may have a detrimental effect on bats. Bats could be killed or abandon roost if works start when present between spring and summer. If works started in winter and not completed by spring, bats would have no roost to return to. Timing of operation will minimise disturbance.

5.2 Long-term impact – roost losses

Small day-roosts for up to up to 4 x Common Pipistrelles, 2 x Soprano Pipistrelles and 1 x Whiskered bats will be disturbed/destroyed during the proposed development to the barn, which would have a low impact on the locally recorded population. Providing alternative roosts as compensation and incorporating bat-friendly roost opportunities into the proposed development will minimise the impact on the bats and likely have a positive impact on locally recorded bats.

5.3 Long-term impact – fragmentation and isolation

Any loss of linear features (hedges, treelines), which provide important flightlines would be negative. Only one small Elder near the East gable-end of the barn is likely to be removed. A post-construction landscape scheme will include new tree/shrub planting, which will improve biodiversity on the site.



4.0 SITE EVALUATION (continued)

5.4 Post-development interference impacts

Any bright, artificial lighting on roost entrances and flightlines would be negative. Any lighting should be low level, with illumination directed downwards to minimise impact (see 7.7 below).

5.5 Predicted scale of impact

The impact on individual bats of all species concerned would be high and the impact on the favourable conservation status of locally recorded bats would be low. It is essential that appropriate compensation and mitigation measures are implemented and that Reasonable Avoidance Measures are followed, in order to minimise the impact on locally recorded bats.

6.0 CONCLUSIONS

6.1 Bats

Evidence of recent bat activity was observed in the form of scattered bat droppings on the floor, near the West gable-end and some scattered discarded butterfly wings near the East gable-end. The smooth, tapered droppings approx. 9mm length appear to be Pipistrelle spp.

During the emergence surveys a number of crevice-dwelling bat species were observed emerging from the barn. The barn at Ty Mawr, Pontfadog is therefore a confirmed roost, being used by up to 4 x Common Pipistrelles, 2 x Soprano Pipistrelles and 1 x Whiskered as small day-roosts. A Brown Long-eared, Noctule and Natterer's bats were also detected foraging in the vicinity. 1 x Lesser Horseshoe bat was observed emerging from the barn to the Northwest of the barn being surveyed (no works proposed for this other barn).

The proposed works is change of use from farm building/barn and convert to holiday accommodation. This proposed work would result in the disturbance/destruction of small day-roosts, therefore a derogation licence will be required from Natural Resources Wales, to avoid an offence being committed.

Mitigation in the form of compensation will be required. If suitable mitigation is provided, Reasonable Avoidance Measures in the form of timing of operations are implemented and bat-friendly features are incorporated into the development as enhancements, the proposed scheme is likely to have a low impact on the favourable conservation status of the locally recorded bats and likely have a positive effect on locally recorded bats.

6.2 Nesting birds

There was evidence of nesting birds observed in the ground floor and in the upper level of the barn, in the form of Swallow nests (*Hirundo rustica*). Birds are protected by European and UK legislation. Any proposed development works which may affect nesting birds should be carried out between October – March to avoid the nesting season.



7.0 MITIGATION AND RECOMMENDATIONS

The proposed development work will result in the disturbance/destruction of a confirmed roost being used by up to 4 x Common Pipistrelles, 2 x Soprano Pipistrelles and 1 x Whiskered as small day-roosts. Mitigation in the form of compensation must be provided, to minimise the impact on bats.

7.1 COMPENSATION

Mitigation in the form of compensation is required, to provide an alternative 'like-for-like' bat roost on the site. The replacement roost should 1) match the existing roost in terms of size, height and aspect; 2) have a thermal regime suitable for the target species; 3) be situated as close as possible to the roost being lost and; 4) have an entrance close to the existing flight lines and appropriate habitat, to maximise chances of the bats finding and adopting it.

Two wall-mounted bat boxes should be provided prior to works commencing, to provide alternative roosts for the bats whilst the development work occurs. These could be fixed to the external walls of the farmhouse to the West of the barn, or to the walls of the agricultural barn to the Northwest of the barn. This other barn provides suitable habitat for roosting bats, so would also provide additional alternative roost opportunities and also provide a suitable night-time feeding perch/resting place for the Brown Long-eared, Natterer's and Lesser Horseshoe bats also detected foraging in the vicinity.

The compensation measures could be achieved by providing bat access into the roof of the barn during the proposed work (e.g. gaps beneath slates and ridge tiles and between walls and eaves). If the roof requires stripping and re-slating, the re-roofing work should be completed between October-April, so that a replacement roost for the crevice-dwelling bat species is available for when the bats emerge from hibernation.

7.2 REASONABLE AVOIDANCE MEASURES

General recommendations

Timing of the development works is crucial. The optimum time for work involving a summer roost (where bats are present but without dependable young) is 1st September – 1st May. If there is a possibility it is a maternity roost (where baby bats are born and reared), the optimum time for works is 1st October - 1st May.

The amendments to the European Habitat Regulations came into force in August 2007, which means that the 'incidental result defence', which previously covered acts that were the incidental result of an otherwise lawful operation, such as a planning permission, has now been removed. Therefore, if any bats are encountered, work should stop immediately and not resume until advised by an ecologist. If any bats are discovered, Natural Resources Wales must be notified as to what bat species and numbers were encountered and what action has been taken.

Any proposed development works which may affect nesting birds should be carried out between October – March to avoid the nesting season.



7.0 MITIGATION AND RECOMMENDATIONS (continued)

7.3 BAT ROOSTING OPPORTUNITIES

It is recommended that bat friendly features be incorporated into the proposed development, in order to keep in line with the Local Biodiversity Action Plans. To provide suitable conditions for bats, the use of warm roofs should be avoided. Traditional cold roofs with air circulation should be used. Whichever roof construction is to be used (closed eaves with a fascia; eaves with a soffit; barge board with or without soffit; closed verge pointed with undercloak), gaps (10-20mm) should be left by the fascia/soffit/undercloak for bats to gain access to the inner gable walls.

If suitable roosting opportunities for bats are to be incorporated into the roof structure of the proposed development, traditional hessian backed 1F bitumastic underfelt **must** be used. Results of recent research commissioned by The Bat Conservation Trust (http://www.bats.org.uk/pages/breathable_roof_membranes.html) has concluded that Breathable Roofing Membrane (BRM) poses a serious threat to bats, due to loose spun-bond filaments becoming entangled around bats feet and wings, resulting in bats becoming immobilised and eventually dying. The functionality and longevity of BRM can also be affected in those parts altered by the presence of bats.

Another method that could be designed into the roof construction is the use of 'Slate-line' bat tiles installed on the north and south-facing roof sections, to allow bats access to the space between the slates and roofing felt (available from Summit Slate Supplies, Welshpool <http://www.summitslate.co.uk/>). Approximately five ridge tiles should have 20mm high x 100mm long gaps cut in one of the lower edges, to allow access for bats, or alternatively leave gaps in the mortar (see *Appendix 5 – Mitigation Details*).

Another alternative is to install Schwegler 1FQ wall-mounted bat boxes (75) [available from www.wildcareshop.com], which should be fixed to the South or West-facing external wall, high enough (2m) to avoid predation by cats. Another option is to incorporate bat bricks into the structure, to provide a contained roost space for crevice-dwelling bat species.

If a loft void is to be incorporated within the roof structure of the converted barn, biodiversity enhancements could be made by providing a bat loft and including bat-friendly features. Lesser Horseshoe and Brown Long-eared bats were also detected foraging in the vicinity of the barn. Being roof void dwelling species, they require timber joists or beams and roofing felt on which to roost, but the loft void should not be trussed, in order to allow unobstructed flight. To provide access for Brown Long-eared bats, a small 3-sided flap [75mm x 30mm] should be cut into the underfelt and allowed to hang down, near the top of the bat slate, immediately adjacent to a rafter or wall, so that the bats can climb back out. Lesser Horseshoe bats require a 'fly-in' access to a roost, which could be provided as a small 'letterbox' opening in the gable-end, no more than 500mm above the level of the loft floor (with an opening 300mm wide x 225mm high), or as a small lead covered or slated open dormer (500mm wide and 300mm deep), with the entrance sloping upwards with a smooth metal sheet lining on all interior sides to prevent predator entry. The dormer should be set low on the roof so the interior entrance of the tunnel is no more than 500mm above the level of the loft floor.



7.0 MITIGATION AND RECOMMENDATIONS (continued)

7.3 BAT ROOSTING OPPORTUNITIES

Two simple crevice boxes could be provided. The crevice boxes are constructed from untreated rough sawn boards (1.5m long x 15cm deep, with a gap of 22mm between the boards as the roosting space) and hung from the underside of the roof, as near to the apex/ridge board of the loft void as possible. The 22mm battens should be fixed between the boards at either end and along the top edge, to leave the underside open for bat access.

Any bat-friendly features to be incorporated in the new development should be detailed on the development plans/drawings.

7.4 LINING THE INTERIOR WALLS

Where there are large gaps or cracks in the stonework of the walls, there is a potential for use by crevice-dwelling bats, especially over winter. It would be appropriate to prepare the inside face of all external walls to receive the Lime Green system for insulating historic buildings (<https://www.lime-green.co.uk/>). This consists of an 80mm thick wood fibre insulation board finished with a lime plaster of 12mm thickness. The wood fibre insulation board should be fixed to wooden battens, leaving a minimum 10mm void between the insulation board and the wall.

7.5 ROOF INSULATION

Any new insulation (e.g. Kingspan sheets), to be installed in the roof sections to incorporate bat-friendly features, should be fixed to a counter batten, attached to the underside of the rafters. Care must be taken to ensure that a 50mm airspace between the insulation and the slates/tiles is maintained for bat access.

7.6 TIMBER TREATMENT

Any timber treatment to protect against insects, fungal growth or weathering in areas with potential to be accessed by bats, should only be carried out utilising chemicals from the Natural Resources Wales approved list. A list of Approved Products is available at <https://www.gov.uk/guidance/bat-roosts-use-of-chemical-pest-control-products-and-timber-treatments-in-or-near-them>, which provides links to Timber Treatment Table 1. If the product is not listed, check the active ingredients listed in Timber Treatment Tables 2-7.

You can't use chemical products in or near a known bat roost if there are bats present. The best time to apply treatments is usually between autumn and spring.

Pre-treated timber products

Pre-treated timber products are not included in the tables mentioned above. You can use timber that's been pre-treated off-site, because the chemicals are injected deep into the timber leaving lower concentrations on the surface which isn't harmful to bats. However you shouldn't apply products used to pre-treat timber on-site, because the active ingredients will be more concentrated on the timber surface and may be harmful to bats.

Stains and preservatives

Decorative wood finishes, like stains or wood preservative, can be used around bat roosts as long as you only use them on external timber.



7.0 MITIGATION AND RECOMMENDATIONS (continued)

7.7 LIGHTING

Bats can be disturbed by bright, artificial lighting. Where lighting is essential in the vicinity of any proposed new development, subdued lighting should be used and the illumination should be directed downwards (upward light ratio 0%). LED luminaires should be used where possible, with a warm white spectrum (<2700Kelvin) to minimise blue light component. Luminaires should have peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats. The use of motion sensor-triggered security lighting with short (1 min) timers, is preferable to permanent lighting. If roosting opportunities are to be incorporated into the new development, it is essential that roost access points and flightlines used for foraging/commuting (e.g. hedgerows, lines of trees) are not illuminated. The use of soft landscaping and fencing [supported by concrete posts to ensure long-term contribution] can be used to screen light spill. The latest Guide Note 08/18 can be downloaded at www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/

7.8 BIRD NESTING OPPORTUNITIES

Consideration should be given to providing some simple measures that would have a positive conservation benefit on local bird populations. These may be in the form of eaves built to be suitable for house martins. Suitable crevices left unsealed in exterior stonework or brickwork provides potential for nesting house sparrows. Provision for Swallows could be made in the nearby barn to the Northwest, by installing starter platforms in the form of 90mm x 90mm wooden battens fixed 450mm down from the roof apex. Bird boxes could be installed on the exterior walls of the development, or in mature trees in the vicinity to benefit local bird populations. Planting native species hedgerows and areas of shrubs and trees would provide suitable habitat and food sources for birds.

8.0 WILDLIFE AND THE LAW

8.1 EUROPEAN PROTECTED SPECIES

The Bern Convention (The convention on the conservation of European Wildlife and Natural Habitats) was adopted in 1979 and came into force in 1982. To implement this agreement, the European Community adopted the EC Habitats Directive. The EC Habitats Directive has been transposed into UK legislation by the Wildlife and Countryside Act, 1981 (as amended) and the Conservation of Habitats and Species Regulations, 2010. The Countryside and Rights of Way Act (CroW), 2000 strengthened the existing wildlife legislation in the UK. The UK has also signed the Bonn Convention (The Convention on the Conservation of Migratory Species of Wild Animals) and is therefore party to various agreements.

As from 30th November 2017 the legislation relating to European Protected Species has been consolidated into a new Regulation "The Conservation of Habitats and Species Regulations 2017".



8.0 WILDLIFE AND THE LAW (continued)

8.1.1 Bats

All 17 bat species found in the UK and their roosts are protected in the UK under Schedules 5 and 6 of the Wildlife & Countryside Act 1981 (as amended) and are therefore afforded protection under Section 9 of this Act. The Countryside Rights of Way Act (CroW) 2000 strengthened the existing wildlife legislation in the UK.

In addition, five British bat species are also listed on Annex II [and all bats are listed on Annex IV] of the EC Habitats Directive, which is transposed into national law by means of The Conservation of Habitats and Species Regulations (2017).

These are:

- Greater horseshoe bat (*Rhinolophus ferrumequinum*);
- Lesser horseshoe bat (*Rhinolophus hipposideros*);
- Bechstein's bat (*Myotis bechsteinii*);
- Barbastelle (*Barbastella barbastellus*) and
- Greater mouse-eared bat (*Myotis myotis*).

Bats are listed under Appendix III of the Bern Convention. Bats and their habitats are also listed under Appendix II of the Bonn Convention and therefore the UK has an obligation to protect their habitat, including links to important feeding areas. The UK had designated maternity and hibernacula areas as Special Areas of Conservation (SACs) under the Habitats Directive. Implementation of the UK Biodiversity Action Plan also includes action for a number bat species and the habitats which support them.

8.1.2 Legislation relating to European Protected Species

In relation to a development a person commits an offence if they –

- Deliberately captures, injures or kills a European Protected Species
- Deliberately or recklessly disturbs wild animals of any such species in such a way as to be likely significant to affect:
 - (i) the ability of any significant group of animals to survive, breed, or rear or nurture their young; or
 - (ii) the local distribution or abundance of that species;
- Damages or destroys a breeding site or resting place (even if unintentional or when the animal is not present)
- Intentionally or recklessly obstructs access to a structure or place used for protection or shelter
- This legislation applies, regardless of the life stage (including eggs).

A European Protected Species Licence is required to carry out any activity that would otherwise involve committing an offence.

To avoid disturbance during habitat management, a written strategy is required following guidance provided by Natural Resources Wales. If the guidance is followed and major disturbance can be avoided, then a licence is not required.



8.0 WILDLIFE AND THE LAW (continued)

8.1.3 European Protected Species Licences

At the present time, Natural Resources Wales requires the following three ‘tests’ to be met, in order that a licence may be granted.

Test 1. Regulation 53 (2) (e) states that licences granted to ‘preserve public health, or public safety or other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment’.

Test 2. Regulation 53 (9) (a) states that a licence may not be granted unless the licensing authority is satisfied ‘that there is no reasonable alternative’.

Test 3. Regulation 53 (9) (b) states that a licence cannot be issued unless the licensing authority is satisfied that the action proposed ‘will not be detrimental to the maintenance of the species concerned at a favourable conservation status in its natural range’.

8.1.4 Recent changes in Licences

Following a recent intervention from the European Court, there have been significant changes in the interpretation of the way licences are issued. In considering a licence request, Natural Resources Wales will seek information relating to the size and importance of the population/colony and will require evidence to demonstrate that the species will be maintained ‘at a favourable conservation status in their natural range’. In effect, this means that to obtain a licence, Natural Resources Wales must be satisfied that the applicant will implement mitigation to safeguard (and ideally enhance) the population concerned. Natural Resources Wales will need to see evidence that the development work which will disturb/destroy a roost site will be undertaken using current best practice, also that the bats can be provided with an alternative roost site on or in the immediate area.

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8.0 WILDLIFE AND THE LAW (continued)

8.1.5 Important EPSL Information

Please note that a European Protected Species Licence can only be obtained once planning permission has been granted. When assessing planning applications where a European Protected Species could be affected by proposed works, the local Planning Authority must take into account the potential impacts on the species concerned. In practice this could make further survey work (such as emergence surveys in the case of bats) essential prior to planning permission being granted. Alternatively the LPA may grant planning permission whilst imposing planning conditions to undertake further survey work. The local Planning Authority must also have regard for the three ‘tests’ as outlined above – Regulations 53 (2) (e), 53 (9) (a) and 53 (9) (b). Once planning permission has been granted a European Protected Species Licence application can be submitted to Natural Resources Wales. The application requires detailed Method Statements to be produced by a qualified bat ecologist to demonstrate how Regulation 53 (9) (b) can be satisfied. The applicant will also need to complete a Reasoned Statement form demonstrating (with evidence) that Regulations 53 (2) (e) and 53 (9) (a) are satisfied. This involves producing evidence to show that no reasonable alternative to the proposed action is available and that the action must take place to either ‘preserve public health, or public safety or other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment.

8.2 OTHER PROTECTED SPECIES - NESTING BIRDS

All wild birds are protected under Part 1 of the Wildlife and Countryside Act, 1981 (as amended). Therefore in the UK it is an offence to:

- Take, damage or destroy the nest of any wild bird whilst it is being built or in use.
- Kill, injure or take any wild bird.
- Take or destroy the eggs of any wild bird.

To avoid committing an offence no works should be carried out on a structure/feature that is being used by nesting birds. Nesting is deemed to be over when the young have fully fledged. Certain species which are listed in Schedule 1 of the Wildlife and Countryside Act receive special protection. In these cases any form of intentional or reckless disturbance when they are nesting or rearing dependent young, constitutes an offence. Any disturbance of nesting birds between 1st March-30th September could constitute a criminal offence.



8.0 WILDLIFE AND THE LAW (continued)

8.3 ENVIRONMENT (WALES) ACT 2016

This Act sets out Wales' approach to planning and managing natural resources at a national and local level with a general purpose linked to statutory 'principles of sustainable management of natural resources' defined within the Act.

The Environment (Wales) Act introduces a new, enhanced Biodiversity and Resilience of Ecosystem Duty on public bodies to ensure that biodiversity is an integral part of decision making. The Duty will replace the existing Natural Environment and Rural Communities (NERC) Act 2006 Duty. Public authorities will be required to report on the actions they are taking to improve biodiversity and promote ecosystem resilience. Section 6 of the Act places a duty on public authorities to seek to maintain and enhance biological diversity (referred to as biodiversity). All public bodies, statutory undertakers, Ministers of the Crown and other public office holders are required to apply the duty when they are carrying on any functions in Wales, or in relation to Wales. Section 7 of the Act is similar to the duty in *section 42 of the NERC Act 2006* which it replaces. It places a duty on the Welsh Ministers to publish, review and revise lists of living organisms and types of habitat in Wales, which they consider are of key significance to sustain and improve biodiversity in relation to Wales.

8.4 PLANNING POLICY WALES FRAMEWORK

Planning Policy Wales (Edition 10, Dec 2018) sets out the Welsh Government's planning policies and how these are expected to be applied. The planning system manages the development and use of land in the public interest, contributing to improving the economic, social, environmental and cultural well-being of Wales, as required by the Well-being of Future Generations (Wales) Act 2015. It should reconcile the needs of development and conservation, securing economy, efficiency and amenity in the use of land, and protecting natural resources and the historic environment. A well-functioning planning system is fundamental for sustainable development.

8.5 KEY PRINCIPLES OF PPW (2018)

Chapter 6 'Distinct and Natural Places' provides policies for protection of biodiversity and geological conservation.

Para.6.4.3 Development proposals must consider the needs to:

- support the conservation of biodiversity, in particular the conservation of wildlife and habitats;
- ensure action in Wales contributes to meeting international responsibilities and obligations for biodiversity and habitats;
- ensure statutorily and non-statutorily designated sites are properly protected and managed;
- safeguard protected and priority species and existing biodiversity assets from impacts which directly affect their nature conservation interests and compromise the resilience of ecological networks and the components which underpin them, such as water and soil, including peat; and
- secure enhancement of and improvements to ecosystem resilience by improving diversity, condition, extent and connectivity of ecological networks.



8.0 WILDLIFE AND THE LAW (continued)

8.5 KEY PRINCIPLES OF PPW (2018)

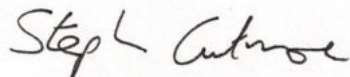
Para 6.4.22 states:

- The presence of a species protected under European or UK legislation is a material consideration when a local planning authority is considering a development proposal which, if carried out, would be likely to result in disturbance or harm to the species or its habitat.
- Local planning authorities should advise anyone submitting a planning application that they must conform with any statutory species protection provisions affecting the site concerned, and should consult Natural Resources Wales before granting permission.
- An ecological survey to confirm whether a protected species is present and an assessment of the likely impact of the development on a protected species may be required in order to inform the planning decision.

Para 6.4.23 states:

- Developments are always subject to the legislation covering European protected species regardless of whether or not they are within a designated site.
- New developments for which development works would contravene the protection afforded to European protected species require derogations from the provisions of the Habitats Directive.
- A derogation may only be authorised if there is no satisfactory alternative and if the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in its natural range.
- The development works to be authorised must be for the purposes of preserving 'public health or safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment'.
- Derogations are granted by a licence issued by Natural Resources Wales. Local planning authorities are under a duty to have regard to the requirements of the Habitats Directive in exercising their functions.
- To avoid developments with planning permission subsequently not being granted derogations in relation to European protected species, planning authorities should take the above three requirements for derogation into account when considering development proposals where a European protected species is present.

Report written and compiled by

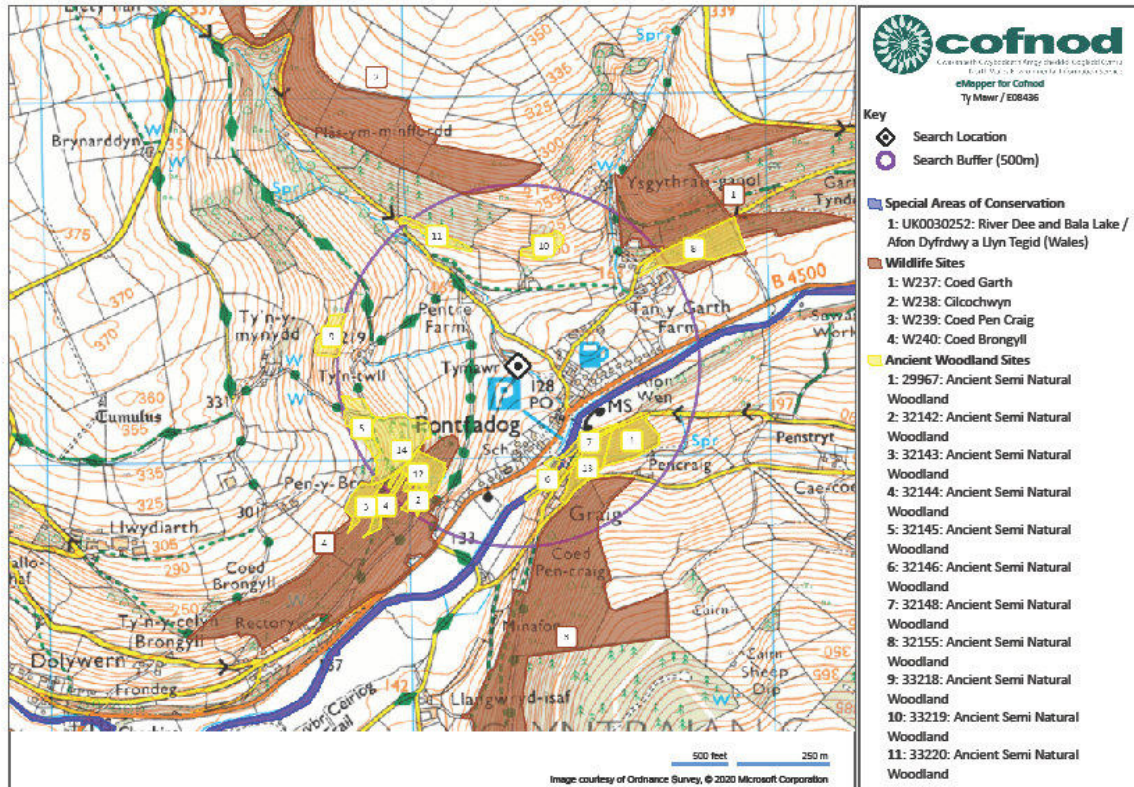
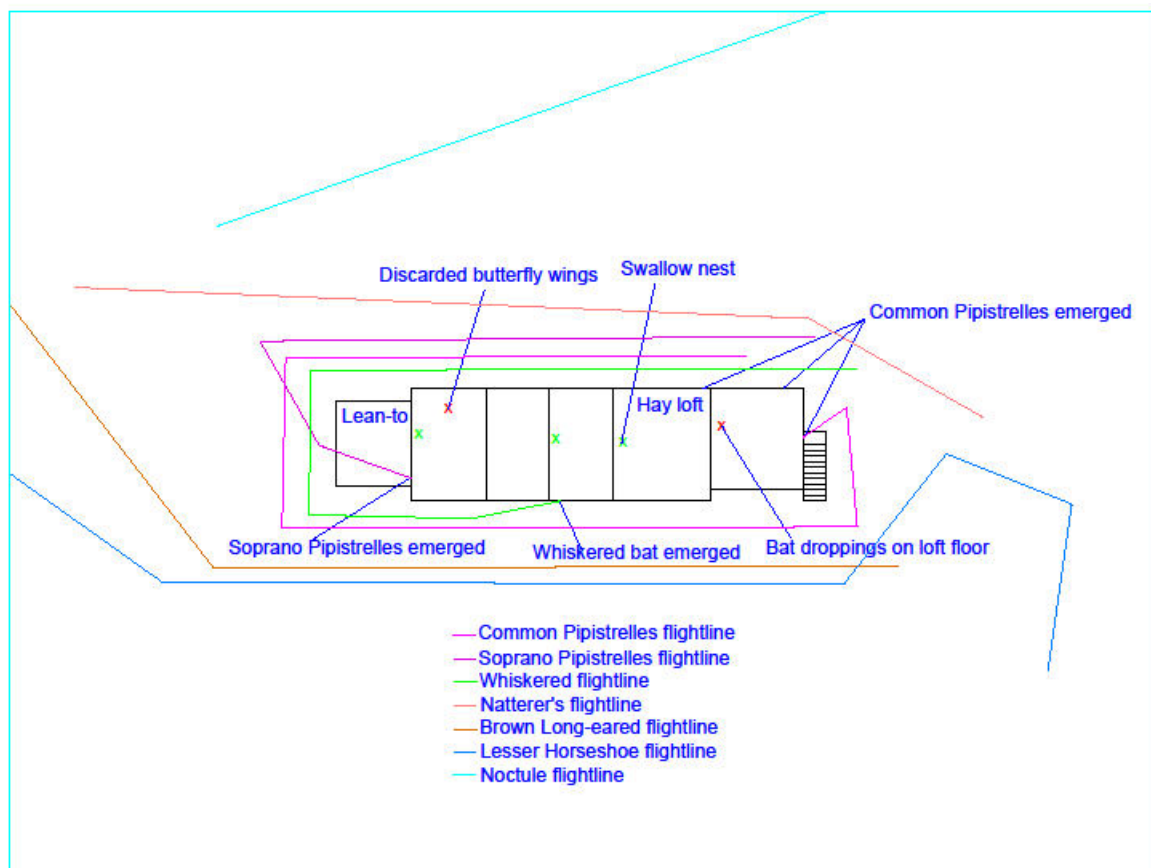


Stephen Cutmore BSc (Hons)

Licensed Bat Worker (NRW[S087991/1], NE[2015-16936-CLS-CLS])



APPENDIX 1 – Site plan



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Protected Species Survey
Ty Mawr, Pontfadog

8 October 2020
page 21 of 31



APPENDIX 2 – Photographs



Photo 1: North elevation and West gable-end of barn.
[Red arrow: Common Pipistrelle, Green arrow: Whiskered]



Photo 2: South elevation of barn.
[Red arrow: Common Pipistrelle]



Photo 3: East gable-end of barn.
[Yellow arrow: Soprano Pipistrelle]

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Ref: 102020/PSS/GJ

Protected Species Survey
Ty Mawr, Pontfadog

8 October 2020
page 22 of 31



APPENDIX 2 – Photographs



Photo 4: Felt beneath slates only on South pitch of roof.



Photo 5: Bat droppings on floor of upper level near West gable-end of barn.



Photo 6: Scattered butterfly wings were observed in the upper level near the East gable-end.

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Protected Species Survey
Ty Mawr, Pontfadog

8 October 2020
page 23 of 31



APPENDIX 3 – Grading system for bat habitats

It should be noted that low suitability roosting habitats may be present in commuting/foraging habitats that are of high suitability and vice versa. Roosting habitats and commuting/foraging habitats should be assessed separately and independently.

Table 1: Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement.

Suitability	Description Roosting habitats	Commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PFRs but with none seen from the ground or features seen with only very limited roosting potential.	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated i.e not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (but not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost types only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees or scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.



APPENDIX 4 – Bat sonographs

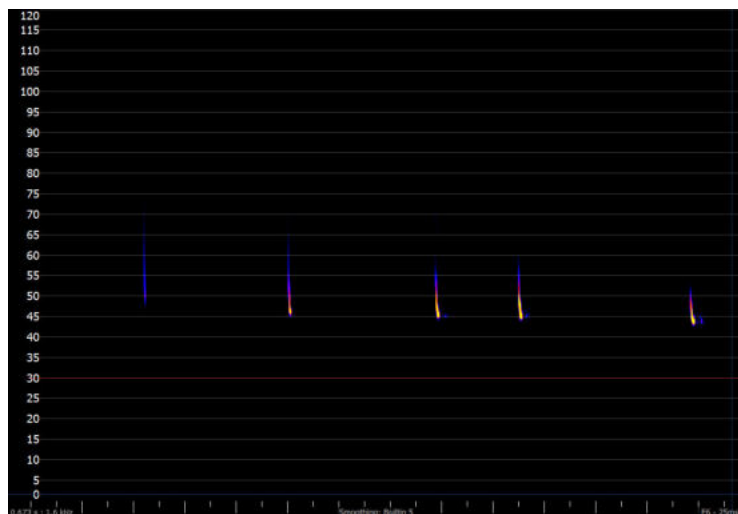


Figure 2: Common Pipistrelle [45kHz] emerging from barn.

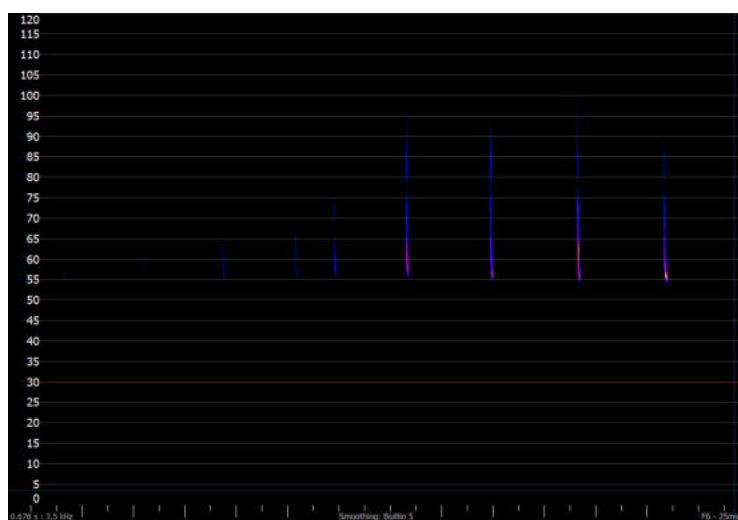


Figure 3: Soprano Pipistrelle [55kHz] emerging from the barn.

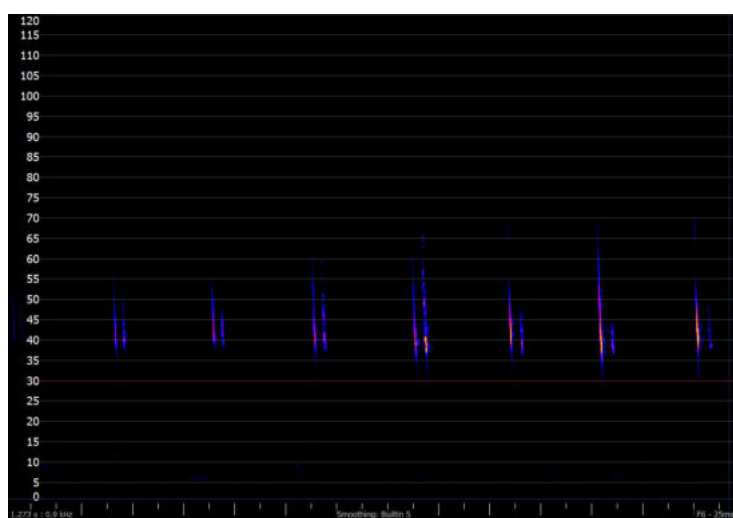


Figure 4: Whiskered [47kHz] emerging from the barn.

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Ref: 102020/PSS/GJ

Protected Species Survey
Ty Mawr, Pontfadog

8 October 2020
page 25 of 31



APPENDIX 4 – Bat sonographs

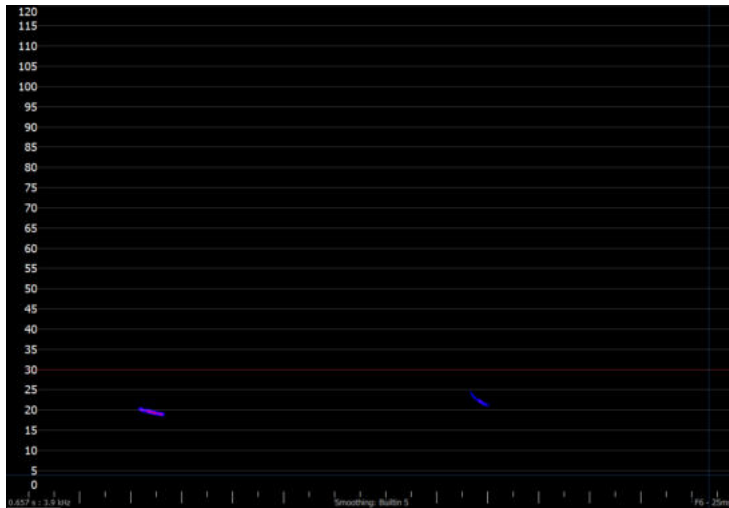


Figure 5: Noctule [18kHz] foraging over site.

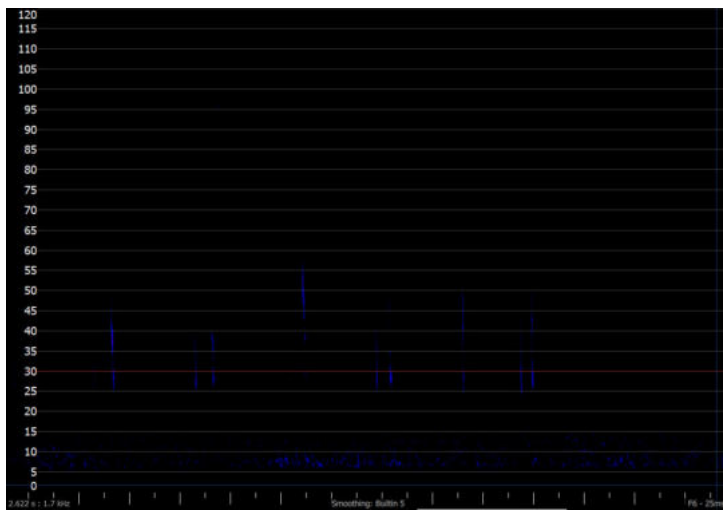


Figure 6: Brown Long-eared [33kHz] foraging near barn on 1st survey.

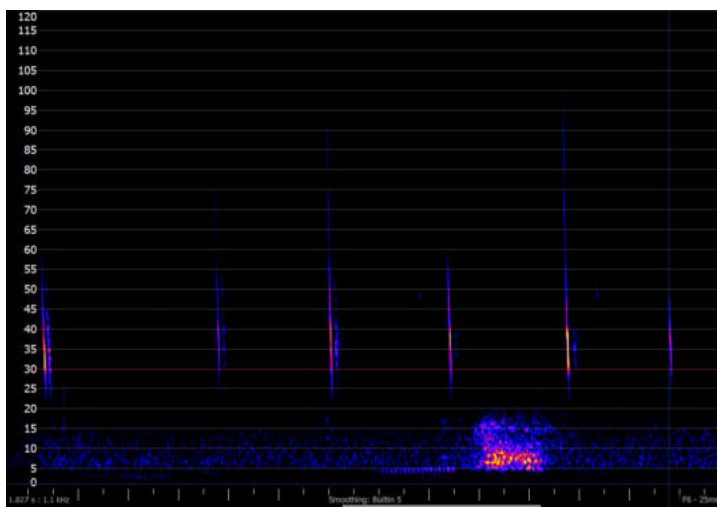


Figure 7: Natterer's [47kHz] foraging near barn on 2nd survey.



APPENDIX 4 – Bat sonographs

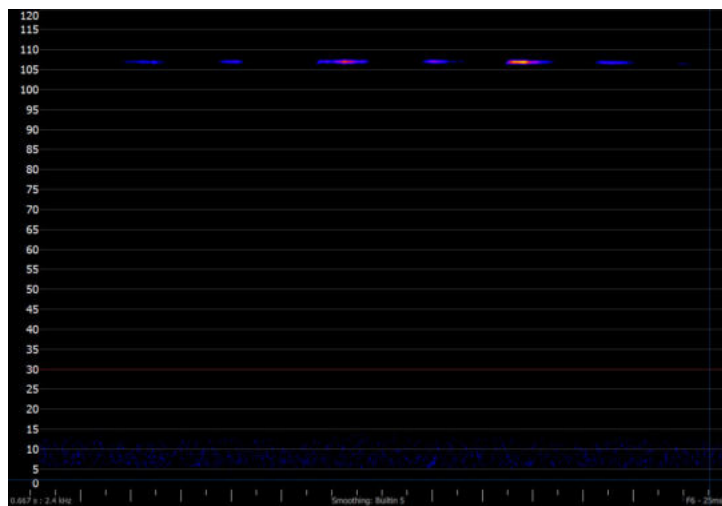


Figure 8: Lesser Horseshoe emerging from barn to Northwest of barn on 2nd survey



APPENDIX 5 – Mitigation details

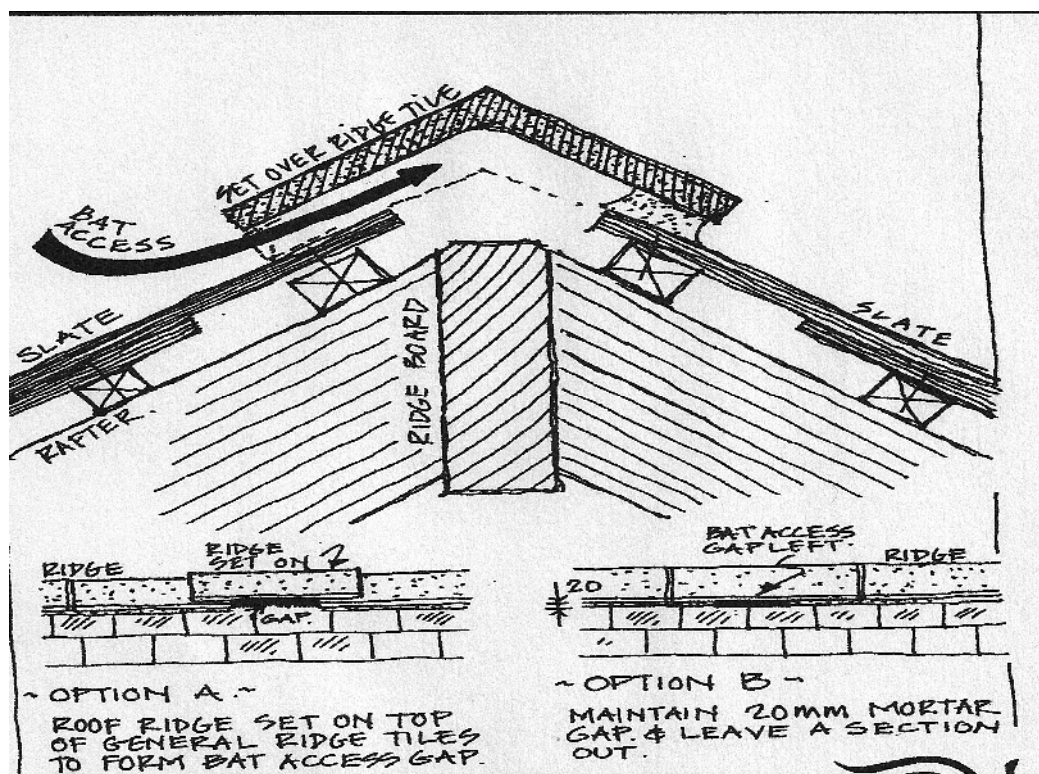


Figure 9: Ridge tile details

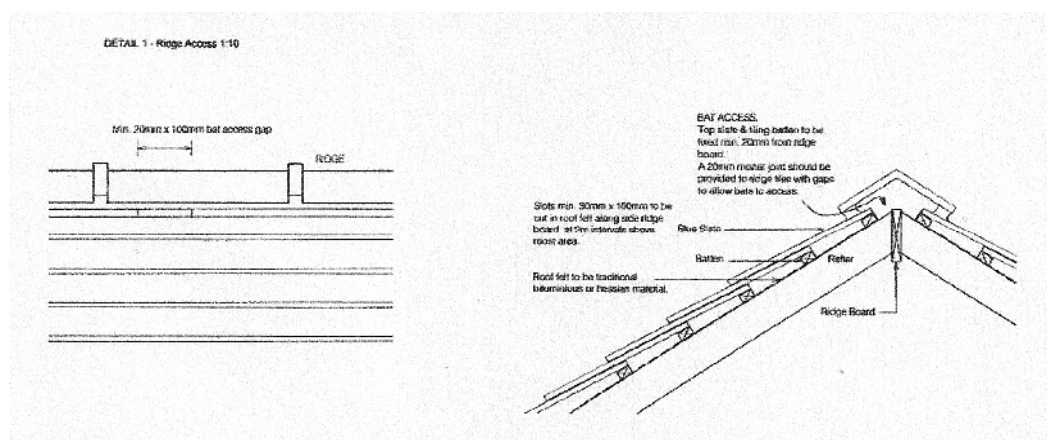


Figure 10: Ridge tile details



APPENDIX 5 – Mitigation details

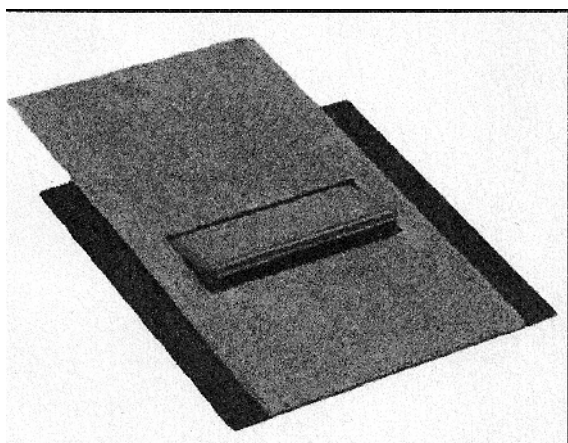


Figure 11: 'Slate-line' bat tile

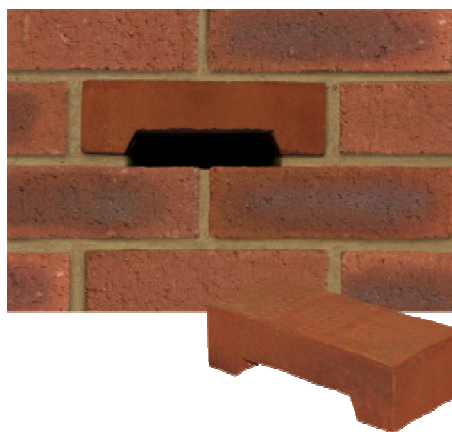


Figure 12: Ibstock type bat brick.

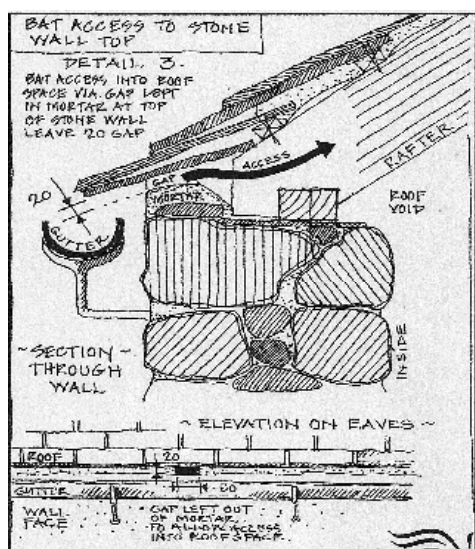


Figure 13: Bat access via eaves



Figure 14: Schwegler 1FS bat box (95).

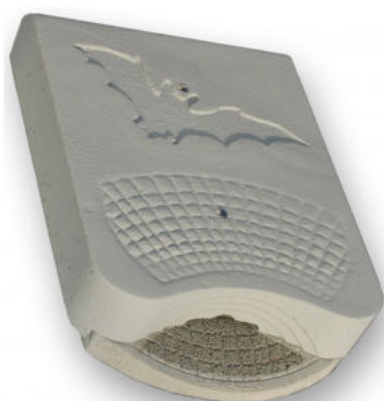


Figure 15: Schwegler (1WQ) Summer & winter roost box



Figure 16: Schwegler (1WQ) bat box fitted to wall.



APPENDIX 5 – Mitigation details



Figure 17: Lesser Horseshoe 'fly-in' entrance.



Figure 18: Lesser Horseshoe covered porch entrance.

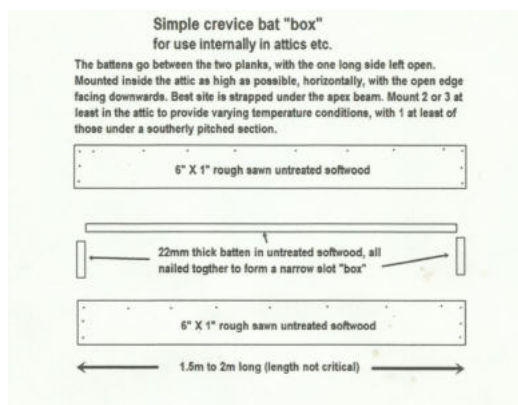


Figure 19: Simple crevice boxes design.



Figure 20: Crevice box in loft void.



APPENDIX 6: Bibliography

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