



Bat & Bird Survey Report

Sunny Bank Farm, Pen-y-bryn

Ref: 793B

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1.0 INTRODUCTION

- 1.1 J W Ecological Limited were commissioned in September 2010 to undertake a bat and bird survey of a barn at Sunny Bank Farm, Pen-y-bryn, Penycae, Wrexham (SJ 26495 44875). See site location plan D/JWE/793/001 (Appendix 1).
- 1.2 The aims of the survey were to:
- Identify any evidence of bat usage.
 - Assess bat roost potential.
 - Identify any evidence of Barn Owl usage.
 - Assess the likely impact of the loss of the structure on local bat and Barn Owl populations.

2.0 BACKGROUND TO THE PROPOSALS

- 2.1 The proposals will involve the conversion of the southern part of the barn to residential use.

3.0 SITE LOCATION AND DESCRIPTION

- 3.1 Sunny Bank Farm is located to the north of Pen-y-Bryn, near Acrefair, Wrexham.
- 3.2 The site comprises a detached house, an L-shaped stone barn (the subject of the survey) and a number of additional agricultural buildings.
- 3.3 The barn under survey is two-storey and of stone construction with a pitched corrugated asbestos sheet roof (see photographs 1 and 2, Appendix 2). The building has a second floor at its southern and northern ends (see photograph 3, Appendix 2) with the central section being open to the roof (see photograph 4, Appendix 2). A small stone lean-to is located on the western side of the building.



4.0 DESKTOP STUDY

- 4.1 Ecological data and records of protected species were requested/gathered from the following sources (Table 1):

Table 1: Desktop Study Sources

Consultee/Source of Information	Information Supplied
NBN Gateway	Protected species records within 500 metres of the proposed development site.
Natural England	Magic Map (www.magic.gov.uk) was consulted to check for protected sites within 500 metres of the proposed development.
UK Biodiversity Action Plan	Identification of national priority species and habitats known to occur in the region.
Local Biodiversity Action Plan	Identification of local priority species and habitats known to occur in the area.

Protected Sites

- 4.2 No statutorily designated nature conservation sites are located on or adjacent to the survey area. The Berwyn a Mynyddoedd De Clwyd / Berwyn and South Clwyd Mountains SAC and Ruabon/Llantysilio Mountains and Minera SSSI is located approximately 750 metres west of the site.

Bat and Barn Owl Records

- 4.3 Desktop studies revealed no records of Bats or Barn Owls within 1 kilometre of the site.



5.0 LEGISLATIVE AND PLANNING CONTEXT

5.1 This is a brief summary of the ecological planning and legislative context in Wales. This is general advice only and does not relate specifically to the site being assessed.

5.2 Bats

All species of bat and their breeding sites or resting places (roosts) are protected under Regulation 41 of The Conservation of Habitats and Species Regulations 2010 and Section 9 of the Wildlife and Countryside Act 1981 (as amended). Under the legislation it is an offence to:

- intentionally kill, injure or handle a bat;
- to possess a bat (whether live or dead);
- disturb a roosting bat;
- sell or offer a bat for sale without a licence;
- damage, destroy or obstruct access to any place used by bats for shelter, whether they are present or not.

The potential fine for each offence is £5,000. If more than one bat is involved, the fine is £5,000 per bat. An offender can also be imprisoned for up to six months.

Where bats are found to occur on a development site, and there is considered to be a reasonable possibility that a roost may be damaged or destroyed or that bats using a roost will be disturbed, a licence must be obtained from the Welsh Assembly.

5.3 Barn Owls

All birds, their nests and eggs are protected by law under Part 1 of the Wildlife and Countryside Act 1981 (as amended). Barns Owls are afforded special protection through inclusion in Schedule 1 of the Act.

Under the legislation it is an offence to:

- Intentionally kill, injure, or take (handle) any wild barn owl.
- Intentionally take, damage or destroy any wild barn owl nest whilst it is in use or being 'built' (barn owls do not 'build' a nest but may make a nest scrape).
- Intentionally take or destroy any wild barn owl egg.
- Possess or control a wild barn owl (dead or alive), or egg, (unless it can be shown that it was obtained legally).
- Intentionally or recklessly disturb any wild barn owl whilst 'building' a nest or whilst in, on or near a nest containing eggs or young.
- Intentionally or recklessly disturb any dependent young of wild barn owls.

The potential fine for each offence is £5,000. If more than one bat is involved, the fine is £5,000 per bat. An offender can also be imprisoned for six months. Disturbance may be deemed reckless if it is committed by someone who could be expected to know that the bird(s) might be present but failed to check.



5.4 Birds

All wild birds are protected by law under the Wildlife and Countryside Act 1981 (as amended) making it illegal to:

- Kill, injure or take any wild bird;
- Take, damage or destroy the nest of any wild bird while it is being built or in use;
- Take or destroy the eggs of any wild birds;
- Possess or control (eg for exhibition or sale) any wild bird or egg unless legally obtained.

Operations that will impact on areas or structures that may be used by nesting birds must be conducted, where possible, between September and February (ie outside of the nesting season). This includes:

- Clearance of scrub and trees;
- Mowing or strimming of areas likely to be used by ground-nesting species;
- Building demolition or maintenance.

Where it is not possible to undertake works outside of the nesting season checks for nesting birds should be made immediately prior to the start on site by a suitably experienced person. Where nests are found an exclusion area should be established around the nest in order to ensure that birds are not disturbed.



6.0 BAT SURVEY METHODS

- 6.1 A daytime bat survey of the barn was undertaken by Joseph Whittick BSc (Hons.) MIEEM on the 13th September 2010. A repeat daytime survey was undertaken on the 4th May 2011.
- 6.2 Joseph Whittick is an experienced bat surveyor and holds a Countryside Council for Wales Scientific bat license (Licence Number 18982:OTH:CSAB:2010).
- 6.3 During the survey the building was inspected on the interior and exterior for evidence of past or present use by bats and its suitability as a bat roost including:
- droppings;
 - feeding remains (e.g. moth and butterfly wings);
 - potential roosting sites;
 - potential entrance points;
 - discolouration around entrance points;
 - absence of cobwebs in potential roosting points.

Particular attention was paid to the ridge line and gable ends which are favoured roosting sites.

- 6.4 A dusk bat emergence survey of the building was undertaken by Joseph Whittick and an experienced assistant on the evening of the 13th September 2010. The aim of this survey was to identify any bats emerging from the building at dusk. The survey commenced 30 minutes before sunset and continued until 90 minutes afterwards at which point it became too dark to continue surveying effectively. Sunset was at 19.34 and the conditions were fair with no appreciable wind or rain. The temperature at dusk was 14°C. Surveyors were equipped with Duet bat detectors and recorded all bats seen or heard during the survey.
- 6.5 A repeat dusk bat emergence survey of the barn building was undertaken by Joseph Whittick and an experienced assistant on the evening of the 4th May 2011. The survey commenced 30 minutes before sunset and continued until two hours afterwards. Sunset was at 20.46 and the conditions were fair with no appreciable wind or rain. The temperature at dusk was 12°C. Surveyors were equipped with Duet bat detectors and recorded all bats seen or heard during the survey. A static bat detector with an attached recording device was also placed on the interior of the barn for the duration of the survey. The recording was later analysed using Bat Sound.
- 6.6 A dawn bat survey of the barn was undertaken on the morning of the 3rd June 2011 by Joseph Whittick and an experienced assistant. The survey commenced 90 minutes before sunrise and continued until 20 minutes afterwards. The aim of the survey was to record any bats returning to roost in the barn building at dawn. Sunrise was at 04.50 and the temperature at dusk was 8°C. A static bat detector with an attached recording device was also placed on the interior of the barn for the duration of the survey. The recording was later analysed using Bat Sound.



7.0 BARN OWL SURVEY METHODS

- 7.1 A Barn Owl survey was undertaken by Joseph Whittick BSc (Hons.) MIEEM on the 13th September 2010. A repeat survey was undertaken on the 4th May 2011.
- 7.2 The barn was inspected on the interior and exterior for evidence of past or present use by Barns Owls (*Tyto alba*) and its suitability as a nesting site for this species including:
- Droppings (white vertical streaks on roof beams and large white splashes on floors);
 - Pellets. Barn owls generally swallow their prey whole and regurgitate the indigestible parts (bones, fur etc.) as pellets. The colour and condition of pellets can give an indication as to when a site was last used by barn owls;
 - Feathers. Barn owl nestlings begin their initial moult at 11 months. Adult barn owls tend to shed their largest and most noticeable feathers (wing feathers) in the summer;
 - Nest debris. Barn owls do not build nests but nesting areas may contain nestling fluff and pellet debris;
 - Potential entrance points. The minimum entrance hole size required for barn owls to gain access to a building is 7cm by 7cm;
 - Suitable nesting platforms. Barn Owls need a level area to lay their eggs usually over 3 metres in length and over 3 metres off the ground. Typical nesting places include tops of walls, between bales and attic floors.

A high powered torch (1,000,000 candles) and binoculars were used to aid in the survey.



8.0 BAT SURVEY RESULTS

8.1 Building construction and suitability for bats

The barn offers suitable roosting opportunities for bats species, particularly crevice dwelling species such as the Pipistrelles. Numerous holes and crevices suitable as roosting sites were identified within the exterior stonework of the barn. Gaps also exist around window and door lintels and frames. On the interior there are fewer crevices as the walls are generally well pointed. A timber fascia with a gap behind also extends along the edge of the roof. Potential exists for bats to roost behind this fascia.

The corrugated sheet roof of the barn offers limited roosting opportunities for bats.

Potential entrance points for bats into the barn exist in the form of gaps around doors and window boards.

The large unobstructed roof space of the building has suitability for species such as the Brown long-eared bat which fly within the roost.

8.2 Evidence of Bats

Approximately 20 droppings characteristic of the Pipistrelle bat were found scattered on the interior of the barn during the daytime survey in September 2010. The droppings were not concentrated in any one location and could have been deposited by bats foraging within the barn. A similar scattering of droppings was found during the daytime survey in May 2011.

During the dusk emergence survey in September 2010 five Common Pipistrelle (*Pipistrellus pipistrellus*) bats were recorded emerging from the eastern side of the building. The bats appeared to come from behind a window lintel or part of the fascia on this side of the building (see photograph 5, Appendix 2). The first bat was recorded at 19.38 with the remaining four bats emerging from between 19.38 and 19.46.

During the dusk emergence survey in May 2011 a single Common Pipistrelle (*Pipistrellus pipistrellus*) bat was recorded emerging the fascia on the eastern side of the barn in close proximity to where bats were recorded emerging in 2010. The bat emerged at 21.12 and headed east away from the site. No other bats were recorded emerging from the building. At 21.32 a bat arrived on site from the south and foraged within the barn and over the adjacent courtyard for approximately 20 minutes before leaving the site to the north. This bat was recorded on the static bat detector inside the barn. The static detector did not record any other bats flying within the barn building.

During the dawn survey in June 2011 three Common Pipistrelle bats were recorded returning to roost in the barn building. The first bat arrived on site at 04.21 with the remaining two bats arriving shortly afterwards. The bats swarmed for approximately 5 minutes adjacent to the fascia on the eastern side of the building before entering behind the fascia. No other bats were recorded returning to roost in the building at dawn and no bats were recorded on the static detector within the barn.

The results of the bat surveys are shown on drawing D/JWE/793/002 (Appendix 1).

8.3 Habitats

Habitats adjacent to the site have good suitability for bats with mature hedgerows suitable as commuting routes and suitable foraging habitat nearby.



9.0 BARN OWL SURVEY RESULTS

- 9.1 Suitable nesting platforms and access points for Barn Owls are available however no evidence of Barn Owl activity was identified in the barn during the surveys in September 2010 or May 2011.

10.0 BIRD SURVEY RESULTS

- 10.1 A number of old passerine nests were found in the barn building during the survey in September 2010. Old Swallow nests were also found throughout the barn building.
- 10.2 In May 2011 a number of active Swallow nests and other common passerine nests were identified within the barn.



11.0 CONCLUSIONS AND RECOMMENDATIONS

11.1 Bats

Five Common Pipistrelle bats were recorded emerging from the eastern side of the building during the dusk survey in 2010 indicating the presence of a small summer or transitional roost of bats in this location. In May/June 2011 up to three Common Pipistrelles were recorded roosting in the same location behind the fascia on the eastern side of the building. As no bats were recorded flying within the barn the bats are thought to be roosting on top of the stone wall in this location. A number of Common Pipistrelle bat droppings were found on the interior of the barn scattered about the building. As no bats were recorded within the barn the droppings are thought to have been deposited by foraging bats and a Common Pipistrelle was recorded foraging within the barn during the dusk survey in 2011.

Given the findings of the surveys the barn is thought to support a small summer roost of Common Pipistrelle bats behind the fascia on the eastern side of the building. Given the number and species of bat recorded the roost is thought to have moderate importance locally and low importance regionally and nationally.

All species of bat and their roosts are protected under Regulation 41 of The Conservation of Habitats and Species Regulations 2010 and Section 9 of the Wildlife and Countryside Act 1981 (as amended). Under the legislation a license must be obtained from the Welsh Assembly for any works that would result in the loss or damage of roosting sites or for any works likely to result in disturbance or harm to roosting bats. As the proposed conversion works will lead to the disturbance and likely loss of the existing roosting area a WAG license is thought to be required. The license application will need to include mitigation/compensation measures to ensure that no bats are harmed by the proposal and that bats can continue to roost on or near the site. Outline mitigation proposals are provided in Appendix 3.

License applications take a minimum of 8 weeks to be produced and then processed by the Welsh Assembly and should therefore be applied for well in advance of the proposed start on site.

11.2 Barn Owls

No evidence of Barn Owl activity was identified on site during the surveys. It should however be noted that Barns Owls can occasionally nest in inaccessible areas that are not visible from the ground and therefore go undetected during daytime surveys. If any evidence of Barn Owl activity is found at any point during the works on site all works should cease immediately and a licensed Barn Owl specialist should be contacted.

11.3 Birds

Active Swallow and common passerines nest were identified in the barn during the survey in May 2011. If possible conversion works should commence outside of the bird nesting season (the nesting season runs from March to August inclusive) in order to avoid times when nesting birds will be present. If conversion works are to commence during the nesting season a recheck of the barn by a suitably experienced person is recommended immediately prior to the start on site. If birds are found to be nesting the nest should be left undisturbed until nesting is complete and young birds have fledged.

THESE SURVEY RESULTS ARE VALID FOR UP TO 1 YEAR AFTER WHICH RE-SURVEYS ARE RECOMMENDED



12.0 REFERENCES

English Nature 2002. *Barn Owls On Site - A Guide for Developers and Planners*.

Barn Owl Trust. Leaflet No.22. *Barn Conversions*

Mitchell-Jones, A.J, & McLeish, A.P. Ed. 2004. *Bat Workers Manual*

English Nature 2004. *Bat Mitigation Guidelines*.



APPENDIX 1

Drawings:

D/JWE/793/001 - Site Location Plan

D/JWE/793/002 – Bat Survey Results

D/JWE/793/003 – Mitigation Proposals





 = Site Location



J W ECOLOGICAL LTD

TITLE: Site Location Plan

SITE: Sunny Bank Farm

NGR: SJ 26495 44875

DRAWING NUMBER: D/JWE/793/001



Site: Sunny Bank Farm

Title: Bat Survey Results

KEY:



Dusk Survey - 13th September 2010:



Emergence times:

1 - 19.38
2 - 19.41
3 & 4 - 19.44
5 - 19.46

Dusk Survey - 4th May 2011:



Emergence times:

1 - 21.12
2 - 21.32 for 20 minutes

Dawn Survey - 3rd June 2011:



Times:

- 1 - 04.21
- 2 - 04.22
- 3 - 04.25

GRID REFERENCE:

SJ 26495 44875

SCALE:

1:500

DRAWN BY:

JW

CHECKED BY:

JM

DATE:

03/06/11

DRAWING NUMBER:

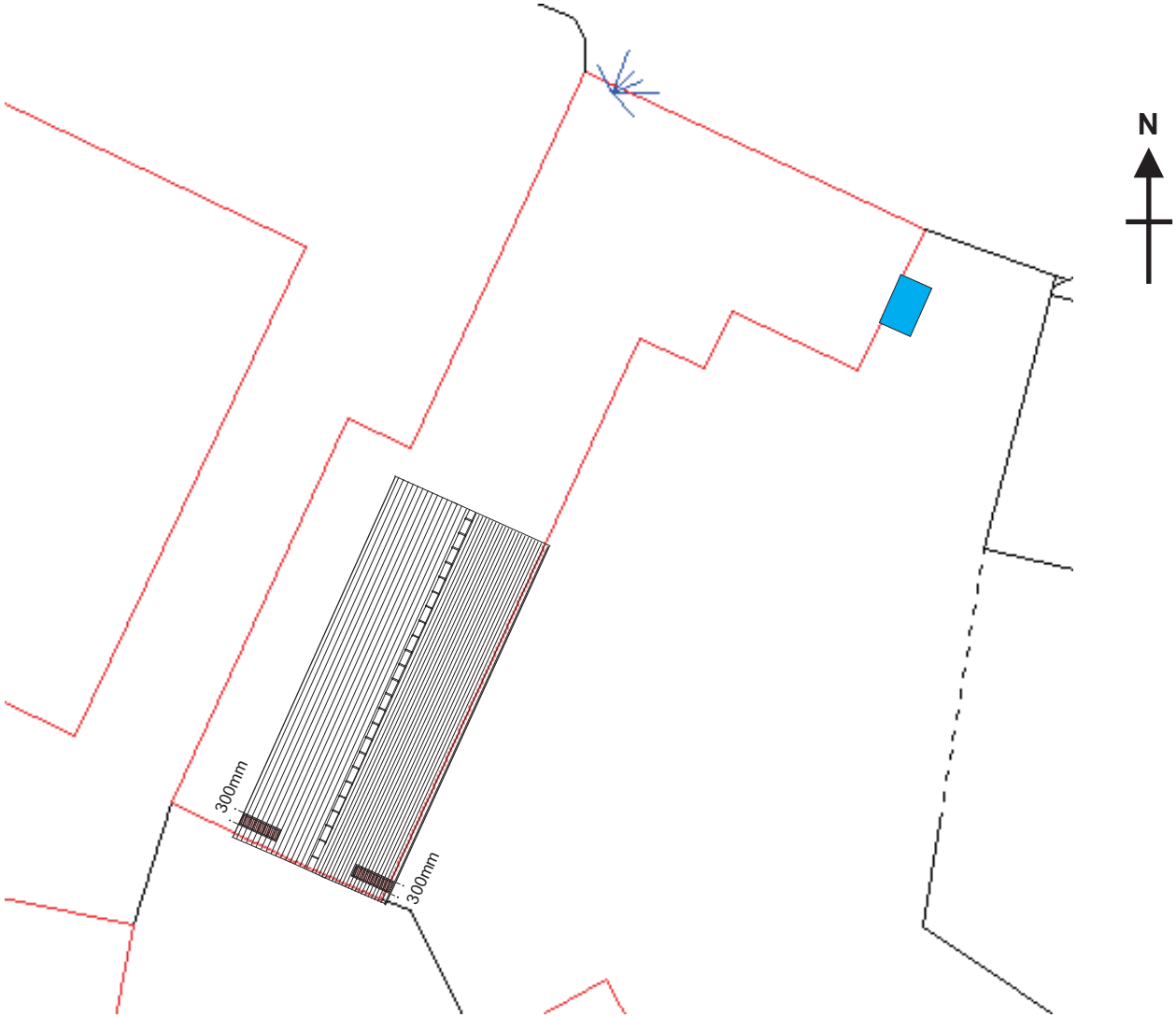
D/JWE/793/002

ISSUE:

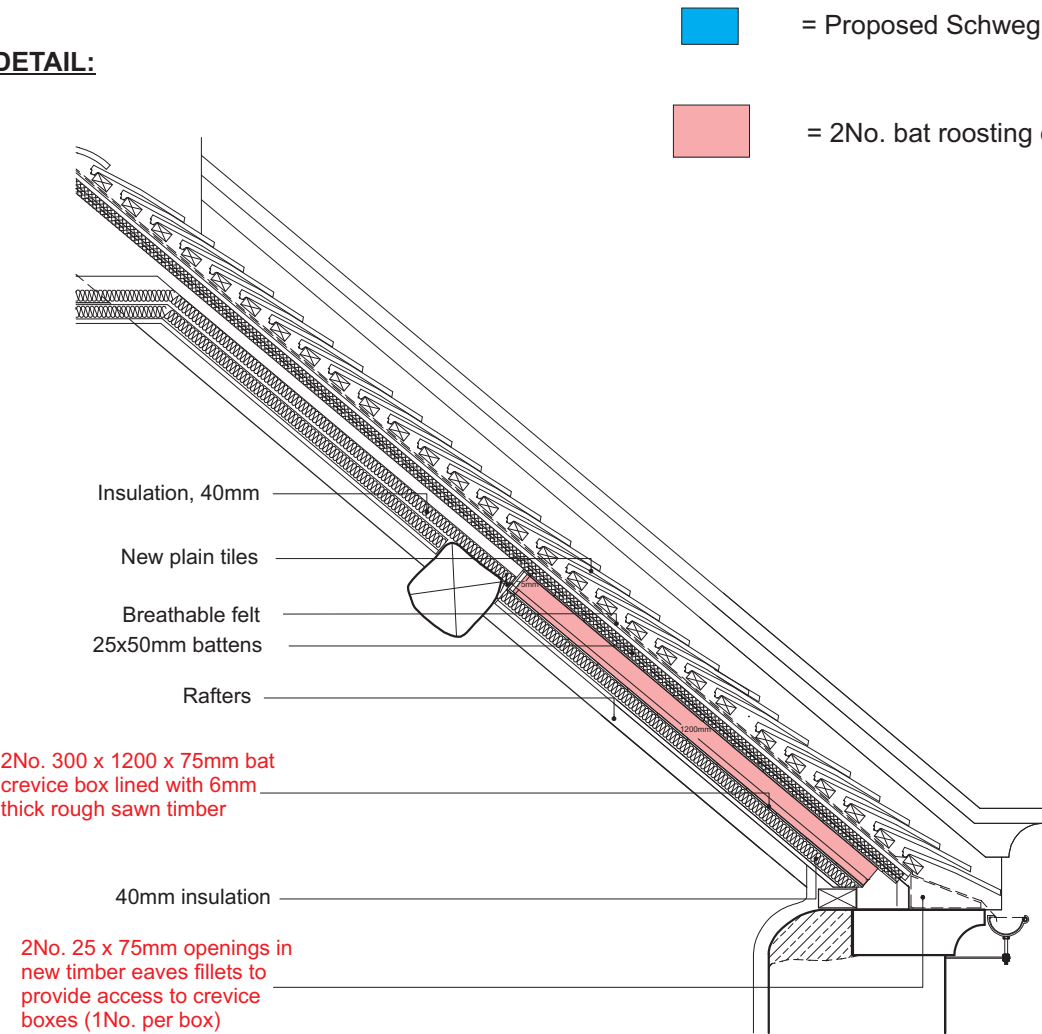
B

THIS PLAN IS ISSUED BY J W ECOLOGICAL LIMITED SUBJECT TO THE
CONDITION THAT IT IS NOT COPIED EITHER IN WHOLE OR IN PART
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AUTHORISATION IS GIVEN.

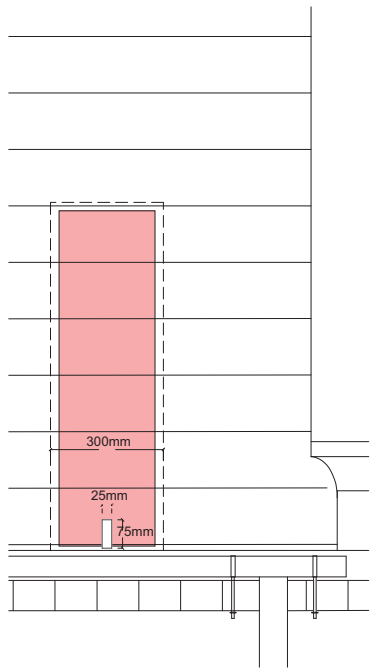
LOCATION OF NEW ROOSTING PROVISION:



BAT ROOST DETAIL:



-  = Proposed Schwegler 1FQ bat box
-  = 2No. bat roosting crevices



APPENDIX 2

Photographs



Photograph 1 – Eastern side of barn



Photograph 2 – Western side of barn



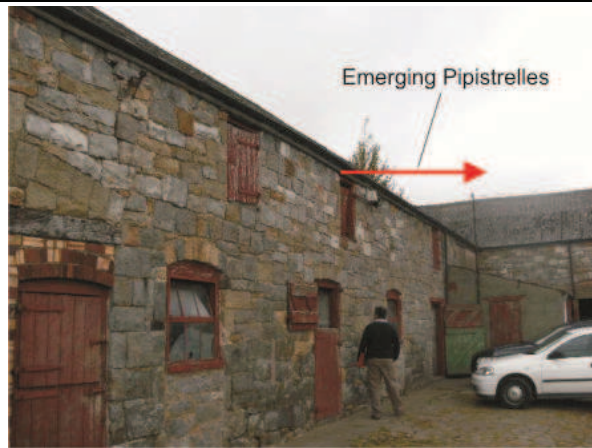
Photograph 3 – Interior of first floor of barn



Photograph 4 – Interior of central section of barn



Photograph 5 – Emerging bats



APPENDIX 3

Bat Mitigation Proposals



A. Interpretation/evaluation of survey results:

Given the findings of the surveys the barn is thought to support a small summer roost of Common Pipistrelle bats behind the fascia on the eastern side of the building. Given the number and species of bat recorded the roost is thought to have moderate importance locally and low importance regionally and nationally.

B. Impact Assessment in absence of mitigation:**Short-term impacts: Disturbance**

Short term impacts as a result of the proposals are thought to include noise and vibration during the construction works and temporary partial obstruction of the barn as a result of scaffolding. If these works were undertaken at a vulnerable time of year without the implementation of mitigation measures there is a risk of disturbance and potentially direct harm to bats.

Long-term impacts: Roost modification

No roost modification will occur, the existing roosting site will be lost as part of the conversion.

Long-term impacts: Roost lost

The existing roost area in the barn will be lost.

Long term impacts: Fragmentation and Isolation

No tree or other habitat removal will take place.

Post-development interference impacts

No post-development interference impacts are thought to exist. New external lighting will be limited.

C. Predicted Scale of Impacts:

IMPACT	SCALE								
	Local			Regional			National		
	Low	Med	High	Low	Med	High	Low	Med	High
Disturbance		√		√			√		
Roost modification	√			√			√		
Roost loss		√		√			√		
Fragmentation and isolation	√			√			√		
Post-development interference	√			√			√		



D. Works to be undertaken by ecologist

Before commencing work on the barn the contractors will be inducted by the licensed bat ecologist to make them aware of the possible presence of bats, their legal protection and the contents of the method statement. The Method Statement and license documents will be kept on site at all times. The identified roosting area will be inspected by the licensed bat worker immediately prior to the start on site.

Removal of the roof sheets of the barn and the fascia boards will be undertaken by hand under the supervision of a licensed bat ecologist. Removal of the roof and any other suitable roosting features will take place in from mid-September 2012 to the end of October 2012 in order to avoid the summer months when the largest numbers of bats are likely to be present on site and the hibernation period for bats. Timing the start of works for late September will also avoid the bird nesting season. Roofing sheets will be lifted vertically to avoid crushing any bats that may be underneath.

Where cavities in the stone work of the barn are to be filled these will be checked by the licensed bat worker using a flexible endoscope immediately prior to being filled. Where the absence of bats cannot be assumed, one-way excluders will be used on the cavities over four consecutive nights in suitable weather conditions (ie. nights when temperatures do not drop below 5°C and there is little wind or rain).

If any bats are found during the removal of the roof or other works these will be taken and cared for by a licensed bat handler. To prevent any bats found during the dismantling process from risking injury/death by returning to the building, bats will be removed by hand from the site by the bat ecologist and kept in captivity until there is no roosting potential left in the barn building (maximum of 48 hours). Any captive bats will be kept indoors in quiet undisturbed conditions and encouraged to eat mealworms by hand initially, until they become self-feeding or are released. Fresh water will always be available. Captive conditions will allow normal roosting behaviour and bats will be able to hang or roost in crevices as preferred. Individuals will be given the opportunity to fly and exercise. Any bats found roosting together will be kept together during their captivity.

Captive bats will be released as soon as possible but not until there is no roosting potential left in the established roosts and weather conditions such as temperature, wind speed and precipitation are suitable for release. Bats will be released by hand into a newly erected Schwegler 1FQ bat box on the northern part of the barn (see section E).

If a bat is found at any other time during the works all works will cease immediately and the licensed bat worker will be contacted for advice. Builders and contractors are prohibited from handling bats.

E. Works to be undertaken by developer/land owner

Prior to the start of works on site a new Schwegler 1FQ bat box will be installed at the top of the south-western gable of the northern section of the barn (the section of the barn which will not be converted). This box will act as a receptor site for any bats found during the conversion of the southern section of the barn and as an alternative undisturbed roosting area for bats during the construction works. This box will be installed in early September 2012 and will be permanent. The location of the new bat box is shown on drawing D/JWE/793/003 (Appendix 1).



Two new dedicated roosting crevices will be incorporated into the new roof of the converted barn. The roosting crevices will have dimensions of 300mm wide by 75mm high by 1200mm long and will be located between the new breathable roofing felt and the roof insulation beneath. The crevices will be lined with untreated 6mm thick rough sawn timber in order to give a textured surface which bats can grip onto. These new roosting areas will provide suitable roosting sites for crevice dwelling species such as the Pipistrelles and Brown long-eared bats.

The new roosting crevices will be created during the re-roofing of the barn between October 2012 and the end of April 2013.

The roosting crevices will be located at the two southern corners of the roof of the barn.

Access for bats to the new roosting crevices will be via openings in the new timber eaves of the converted barn. One 25mm wide by 75mm high entrance point will be created for each of the two bat roosting crevices.

No new external lighting will be positioned in close proximity to the roosting provision.

The specification and layout of the new roosting crevices is shown on drawing D/JWE/793/003 (Appendix 1).

Additional roosting crevices will be created by ensuring that 20mm gaps are left behind the new fascias on the building. These gaps will give bats access to the top of the walls of the barn allowing them to continue to roost in this location.

F. Post-development site safeguard

Habitat/site management and maintenance

Any future works required in or around the new bat roosting crevices may require a licence and should be supervised by a licensed bat ecologist. Maintenance of the new roosting provision should be minimal and will form part of the general upkeep of the building.

Population monitoring/roost usage

The site will be inspected by the licensed ecologist before, during and immediately after development works are completed in 2013. A repeat dusk or dawn bat activity survey of the barn will be undertaken in August 2013 in order to assess the effectiveness of the mitigation/compensation measures on site.

Mechanism for ensuring delivery

All mitigation measures have been agreed with the site owner who is committed to ensuring that the works are undertaken to the necessary standard and in line with this method statement. The converted building will remain in the ownership of the current site owner.

All works on site will be supervised and monitored by Joe Whittick (the licensed ecologist) throughout the project.

Compliance monitoring to ensure that works have been completed in line with the method statement will be undertaken by Dave Bennett of Clwydian Ecology, an experienced and licensed bat specialist. A compliance check will be undertaken prior to April 2013 to ensure that new roosting provision has been created satisfactorily and will be available to bats returning to the site in spring 2013.



G. Timetable of works

Development activities and timing		
Activity	Timing	Notes
Bat box installation	Early September 2012	Installation of new 1FQ bat box to act as receptor area and as an alternative roosting site through construction works.
Start of works, removal of roof of barn	Mid-September 2012 to October 2012	Scaffolding of building, removal of roof of barn under supervision of licensed bat ecologist.
Re-roofing	October 2012 to April 2013	Re-roofing of barn, installation of new roosting areas
Compliance check	April 2013	Compliance check of new roosting provision
Works ongoing	October 2012 to September 2013	Works complete.
Population Monitoring	Summer 2013	Repeat daytime survey of barn and new roosting provision. Repeat dusk survey.

H. References

Mitchell-Jones, A.J, & McLeish, A.P. Ed. 2004. *Bat Workers Manual*

English Nature 2004. *Bat Mitigation Guidelines*.

