



Bat & Bird Survey Report

Oakwood Barn, Bowling Bank

Ref: 830

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SUMMARY

The building under survey is a single-storey L-shaped brick barn with a pitched slate roof. The barn was assessed to have moderate to high potential for bats.

A daytime bat and bird survey of the barn was undertaken in December 2010. During the surveys approximately 60 droppings characteristic of the Pipistrelle bats were identified associated with the western gable wall of the southern part of the barn. Significant roosting potential for bats was also identified in the form of gaps beneath roof and ridge tiles, gaps along the eaves of the buildings and a space between the roof tiles and interior boards along the southern section of the barn. Habitats adjacent to the site have good suitability for bats with suitable foraging habitat available nearby and mature hedgerow field boundaries which may be used as navigational corridors by bats.

Dusk/dawn bat activity surveys of the barn were undertaken in June/July 2011. During these surveys up to two Common Pipistrelle bats were recorded roosting on site associated with the eastern and western gables of the southern section of the barn.

The findings of the survey indicate the presence of a small Common Pipistrelle bat roost in the barn. 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.

No evidence of Barn Owl activity was identified on site and no issues are thought to exist for the proposals with regard to this species.

Extensive evidence of nesting birds was found throughout the barn, particularly in the open-sided northern section. 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.



1.0 INTRODUCTION

- 1.1 J W Ecological Limited were commissioned in December 2010 to undertake a bat and bird survey of a barn building adjacent to Oakwood Barn, Bowling bank, Wrexham (SJ 40699 48981). See site location plan D/JWE/830/001 (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.
 - Identify any further survey or mitigation requirements.
 - 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 barn to residential use.

3.0 SITE LOCATION AND DESCRIPTION

- 3.1 The building to be converted is located to the west of Oakwood Barn in Bowling Bank, Wrexham.
- 3.2 The building under survey is an L-shaped single-storey brick barn with a pitched slate roof (see photograph 1, Appendix 2).
- 3.3 The northern part of the barn is open on its eastern side and is currently used as a garage (see photograph 2, Appendix 2). The roof is of king-post construction and has no felt on the interior (see photograph 3, Appendix 2).
- 3.4 The southern part of the barn (see photograph 4, Appendix 2) is divided into three sections on the interior. The far western section is used as a store area (see photograph 5, Appendix 2). This part of the barn has a brick floor and the interior of the roof is lined with bitumen felt. The central section of the southern part of the barn has a concrete floor, king-post roof and a plaster-boarded ceiling (see photograph 6, Appendix 2). There are three windows on the northern side of this section of the building and one on the southern side. The eastern section of the southern part of the barn has a concrete floor and the roof is lined with bitumen felt (see photograph 7, Appendix 2). The roof on this part of the barn appears to have been renewed at some point and new steel purlins have been installed. The gable walls of this section of the barn have also been partially rebuilt with breezeblock.
- 3.5 On the exterior of the barn there are timber fascia boards along all sides of the southern part of the building and along the eastern and western sides of the northern part of the barn. The brickwork is in a generally good state of repair on both the interior and exterior of the barn with few gaps or crevices. Two decorative brickwork vents are located on the western gable of the southern part of the barn (see photograph 8, Appendix 2).
- 3.6 The barn building is bordered by mature gardens to the north (see photograph 9, Appendix 2), a gravel yard to the east, an access road and other converted barns to the south and a road to the west. The habitats in the wider survey area are predominantly improved grassland fields with mature hedgerow boundaries (see photograph 10, Appendix 2). The River Dee lies approximately 950 metres east of the site.



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.
Countryside Council for Wales	The CCW online protected sites register 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 The boundary of the River Dee Site of Special Scientific Interest (SSSI) lies approximately 450 metres east of the site. The River Dee Special Area for Conservation (SAC) lies approximately 950 metres east of the survey area.

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 16th December 2010.
- 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 Weather conditions were changeable for the survey with occasional heavy rain. The temperature was 3°C.
- 6.5 A high-powered torch (1,000,000 candles), close focusing binoculars and a Provision300 endoscope were used to aid in the survey.
- 6.6 Two dawn and one dusk bat activity survey of the barn were undertaken in June/July 2011.
- 6.7 A dawn bat survey of the barn was undertaken on the morning of the 9th 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 building at dawn. Sunrise was at 04.45 and the temperature at dawn was 10°C. Bat detectors were connected to MP3 recording devices with all recordings being analysed later using BatSound software.
- 6.8 A repeat dawn bat survey of the building was undertaken on the morning of the 19th 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 building at dawn. Sunrise was at 04.43 and the temperature at dawn was 8°C.
- 6.9 A dusk bat emergence survey of the building was undertaken by Joseph Whittick and two experienced assistants on the evening of the 1st July 2011. 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 2 hours afterwards. Sunset was at 21.36 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. Bat detectors were connected to MP3 recording devices with all recordings being analysed later using BatSound software.



7.0 BARN OWL SURVEY METHODS

- 7.1 A Barn Owl survey was undertaken by Joseph Whittick BSc (Hons.) MIEEM on the 16th December 2010.
- 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 LIMITATIONS

- 8.1 The initial survey was undertaken in December when bats are least likely to be visible in roosts. Surveys at this time of year are still however effective for assessing bat roosting potential and identifying signs of past activity (eg. droppings) on the interior of buildings (BCT, 2007).



9.0 BAT SURVEY RESULTS

9.1 Building construction and suitability for bats

The barn offers suitable roosting opportunities for bats species, particularly crevice dwelling species such as the Pipistrelles. On the exterior of the barn gaps suitable as roosting sites and entrance points for bats exist beneath numerous roof slates and ridge tiles. These gaps could allow bats access to roost beneath roof tiles, in the space beneath the ridge tiles or in the gap between the roofing felt and/or plasterboard on the southern part of the building.

The walls of the barn are generally well pointed on both the interior and exterior offering few roosting opportunities for bats. Two decorative brickwork vents which give access to the small cavity in the walls of the barn are however present in the western gable end of the southern part of the building (see photograph 8, Appendix 2). Small gaps suitable as roosting sites for bats were also identified in the joints of the larger roof timbers of the barn.

Timber fascia boards extend along the edge of the majority of the roof. There is a large gap behind the fascia which gives bats access to the tops of the walls of the barn. Bats could roost behind the fascia itself or access the small cavity in the walls of the barn from this location.

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

The building is assessed as having moderate to high potential to support roosting bats.

9.2 Evidence of Bats

Approximately 50 droppings characteristic of the Pipistrelle bats were found in the southern-most of the two decorative brickwork vents on the western gable of the southern part of the barn (see photographs 11 and 12, Appendix 2). A further 11 droppings characteristic of the Pipistrelle bats were found on the interior of the barn adjacent to the western gable wall of the southern part of the barn directly behind the vent (see photograph 13, Appendix 3). The vents are sealed on the interior indicating that the droppings have been deposited by bats roosting on the top of the gable wall.

The droppings in the vent could indicate that bats are entering the wall cavity in this location however the vent is only 1.5 metres off the ground which is relatively low for a bat entrance point. The droppings could also potentially have been deposited in the vent by travelling through the wall cavity from bats roosting at the top of the wall. Access from the exterior to the top of the gable wall is available via a gap behind the fascia board along the top of the western gable.

Approximately 20 dusty moth and butterfly wings were found in the north-eastern corner of the central section of the southern part of the barn (see photograph 14, Appendix 2). A scattering of no more than 10 additional butterfly wings were found throughout the southern part of the barn. No bat droppings were found associated with the moth and butterfly wings however the wings could indicate the presence of an old feeding perch of a species such as the Brown long-eared bat (*Plecotus auritus*).

The results of the bat survey are shown on drawing D/JWE/830/002 (Appendix 1).

9.3 Habitats

Habitats adjacent to the site have good suitability for bats with mature hedgerows suitable as commuting routes and suitable foraging habitat nearby. The River Dee, which represents high quality foraging habitat for bats, is located approximately 950 metres east of the survey area and is connected to the site by mature hedgerows.



9.4 Activity Surveys

During the dawn survey on the 9th June two Common Pipistrelle (*Pipistrellus pipistrellus*) bats were recorded returning to roost in the southern part of the barn. The bats briefly flew up and down adjacent to the western gable of this section of the building before entering behind the fascia at this end of the barn at 04.22 and 04.27. No other bats were recorded returning to roost in the barn and no bats were recorded foraging on site.

During the dawn survey on the 19th June two Common Pipistrelle bats were again recorded returning to roost behind the fascia at the western end of the southern part of the building. The bats returned at 04.24 and 04.28. No other bats were recorded returning to roost in the barn and no bats were recorded foraging on site.

During the dusk survey on the 1st July two Common Pipistrelle bats (*Pipistrellus pipistrellus*) were recorded emerging from behind the fascia at the eastern gable end of the southern section of the barn. The bats emerged at 21.43 and 21.46. No other bats were recorded emerging from the barn and no bats were recorded foraging on site. It is possible the bats recorded are the same bats recorded roosting at the western end of this section of the barn in June and have moved there roost location, possibly as a result of increased temperatures.

The results of the activity surveys are shown on drawing D/JWE/830/002 (Appendix 1).

10.0 BARN OWL SURVEY RESULTS

- 10.1 Suitable nesting platforms and access points for Barn Owls are available in the barn however no evidence of Barn Owl activity was identified in the building at the time of survey.

11.0 BIRD SURVEY RESULTS

- 11.1 Numerous old bird nests were identified on roof timbers and the tops of walls on the interior of the barn and behind the fascia boards on the exterior of the barn. The nests were particularly concentrated in the open-sided northern part of the barn.



12.0 CONCLUSIONS AND RECOMMENDATIONS

12.1 Bats

The findings of the survey indicate the presence of a small Common Pipistrelle summer bat roost associated with the eastern and western gable ends of the southern part of the building. The bats are entering the roost via gaps behind the fascia boards in these locations and then roosting on top of the gable wall and/or in the top of the wall cavity. The small number of bats present in June/July would indicate that this is not a maternity site. Given the small number and species of bat recorded on site the roost is thought to have low conservation significance.

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. 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. The basis of the license application will be the mitigation proposals produced for the local authority as part of the planning application. Outline mitigation proposals are provided in Appendix 3.

12.2 Barn Owls

No evidence of Barn Owl activity was identified on site at the time of survey. It should however be noted that Barns Owls can occasionally nest in inaccessible areas that are not visible from the ground and can 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.

12.3 Birds

Numerous old bird nests were identified in the barn at the time of survey. 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. The incorporation of a number of bird nesting boxes into the converted building would be desirable as part of the proposals in order to compensate for the loss of the existing nesting sites in the barn.

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



13.0 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*.

Bat Conservation Trust (BCT), 2007. *Bat Surveys – Good Practice Guidelines*.



APPENDIX 1

Drawings:

D/JWE/830/001 - Site Location Plan

D/JWE/830/002 – Bat Survey Results

D/JWE/830/003 – Bat Activity Survey Results





 = Site Location



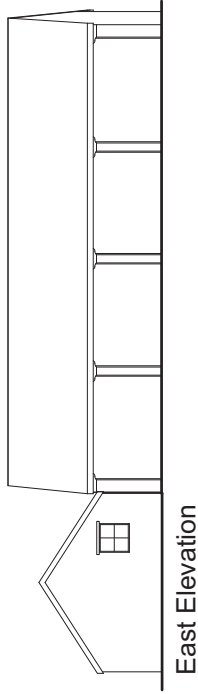
J W ECOLOGICAL LTD

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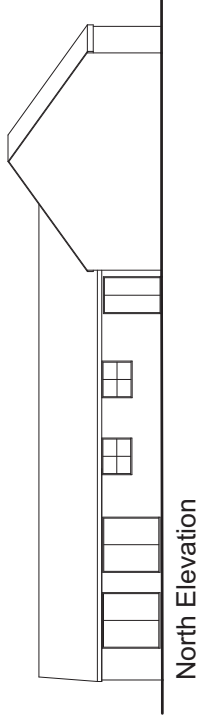
SITE: Oakwood Barn, Bowling Bank

NGR: SJ 40699 48981

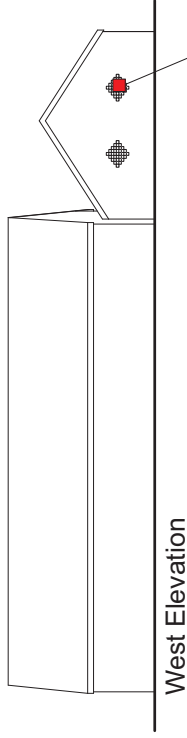
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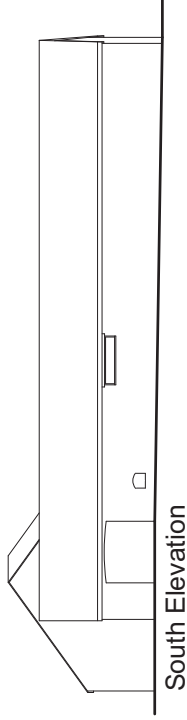
East Elevation



North Elevation

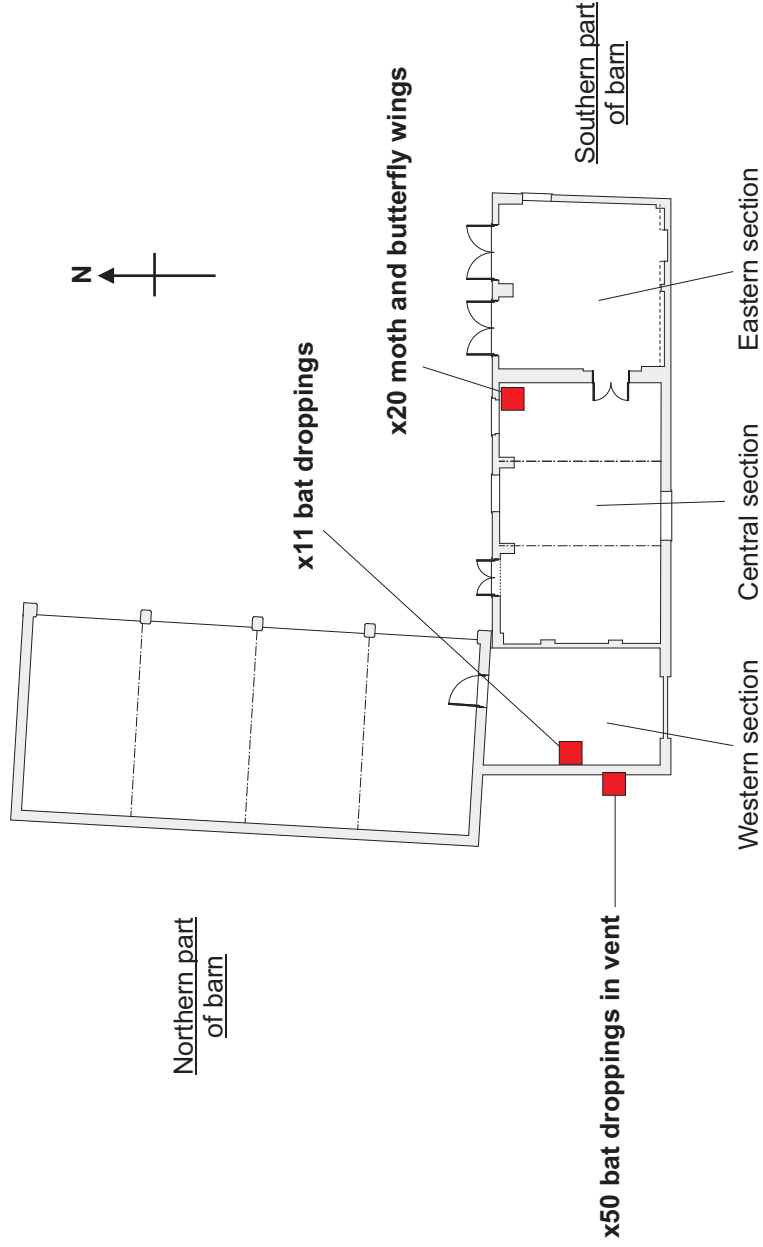


West Elevation



South Elevation

x50 bat droppings in vent

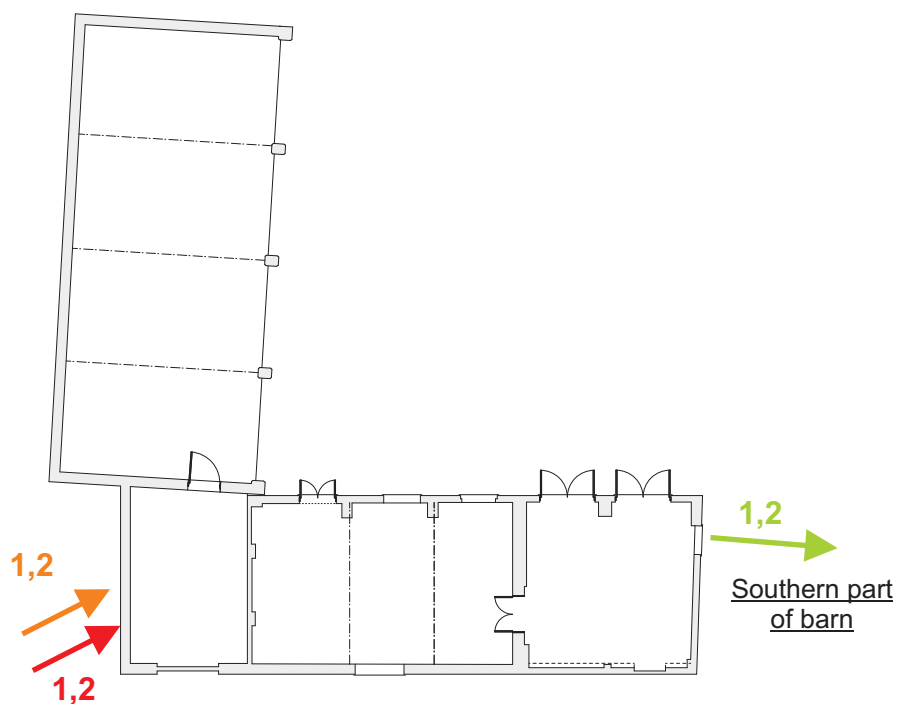


■ = Evidence of bat activity

	
J W ECOLOGICAL LTD	
TITLE: Bat Survey Results	
SITE: Oakwood Barn, Bowling Bank	
NGR: SJ 40699 48981	
DRAWING NUMBER: D/JWE/830/002	



Northern part
of barn



DAWN SURVEYS:

9th June 2011: 1 - 04.22
2 - 04.27

19th June 2011: 1 - 04.24
2 - 04.28

DUSK SURVEYS:

1st July 2011: 1 - 21.43
2 - 21.46



J W ECOLOGICAL LTD

TITLE: Bat Activity Survey Results

SITE: Oakwood Barn, Bowling Bank

NGR: SJ 40699 48981

DRAWING NUMBER: D/JWE/830/003

APPENDIX 2

Photographs



Photograph 1 – Barn under survey



Photograph 2 – Northern part of barn



Photograph 3 – Interior of northern part of barn



Photograph 4 – Southern part of barn



Photograph 5 – Interior of western section of southern part of barn



Photograph 6 – Interior of central section of southern part of barn

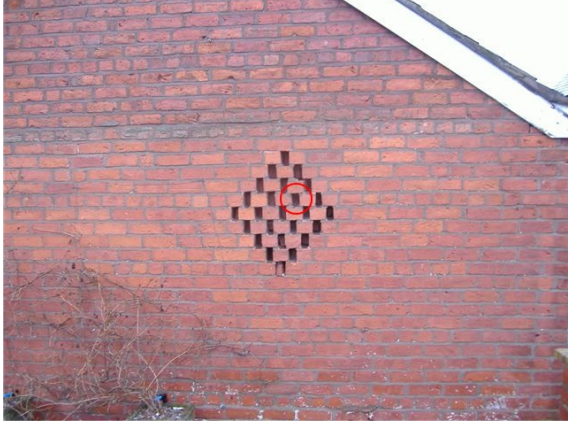


Photograph 7 – Interior of eastern section of southern part of barn



Photograph 8 – Vents on western gable of southern part of barn



Photograph 9 – Gardens to north of barn	
Photograph 10 – Improved grassland fields in wider survey area	
Photograph 11 – Bat droppings in section of brickwork vent	
Photograph 12 – Location of bat droppings in brickwork vent	



**Photograph 13 – Bat droppings
adjacent to the interior of the
western gable of the southern part
of the barn**



**Photograph 14 – Moth and butterfly
wings in the north-eastern corner of
the central section of the southern
part of the barn**



APPENDIX 3

Bat Mitigation Proposals



Licensing

As the proposals for the site will result in disturbance/modification of the existing identified roosting areas a Welsh Assembly Government bat license will be required for the works to the barn.

The license application for the barn will need to include mitigation/compensation measures for bats. Mitigation proposals are outlined below, these will be subject to agreement by CCW/WAG.

Impact Assessment

Given that the species of bat recorded on site is one of the more common species found in the area and that only small numbers were found to be roosting in the barn the roost is thought to have low conservation significance.

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

The existing roosting sites and entrance points at the top of the eastern and western gable ends of the barns will be retained/reinstated. Internally the tops of the gables will be obstructed preventing bats from entering the interior of the barn.

Long-term impacts – Roost Loss

No roost loss will occur. The existing roosting sites on top of the gable walls will be retained.

Long-term impacts – Fragmentation and Isolation

No tree or other habitat removal will take place. New external lighting will be limited.

Post-development interference impacts

No post-development interference impacts are thought to exist.

The scale of impact of the proposals is thought to be as follows:

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	√			√			√		



Timing

Works will be timed to commence between mid-September 2011 and March 2012 in order to avoid the times when bats are most likely to be present on site.

Capture and Exclusion

Removal of fascias and roofing materials on the southern part of the barn will be undertaken carefully, by hand, and under the supervision of the licensed bat worker.

If any bats are found during the removal of the roof/fascias 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 works are complete or there is no roosting potential left. 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 as near as possible to where they were originally found. 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.

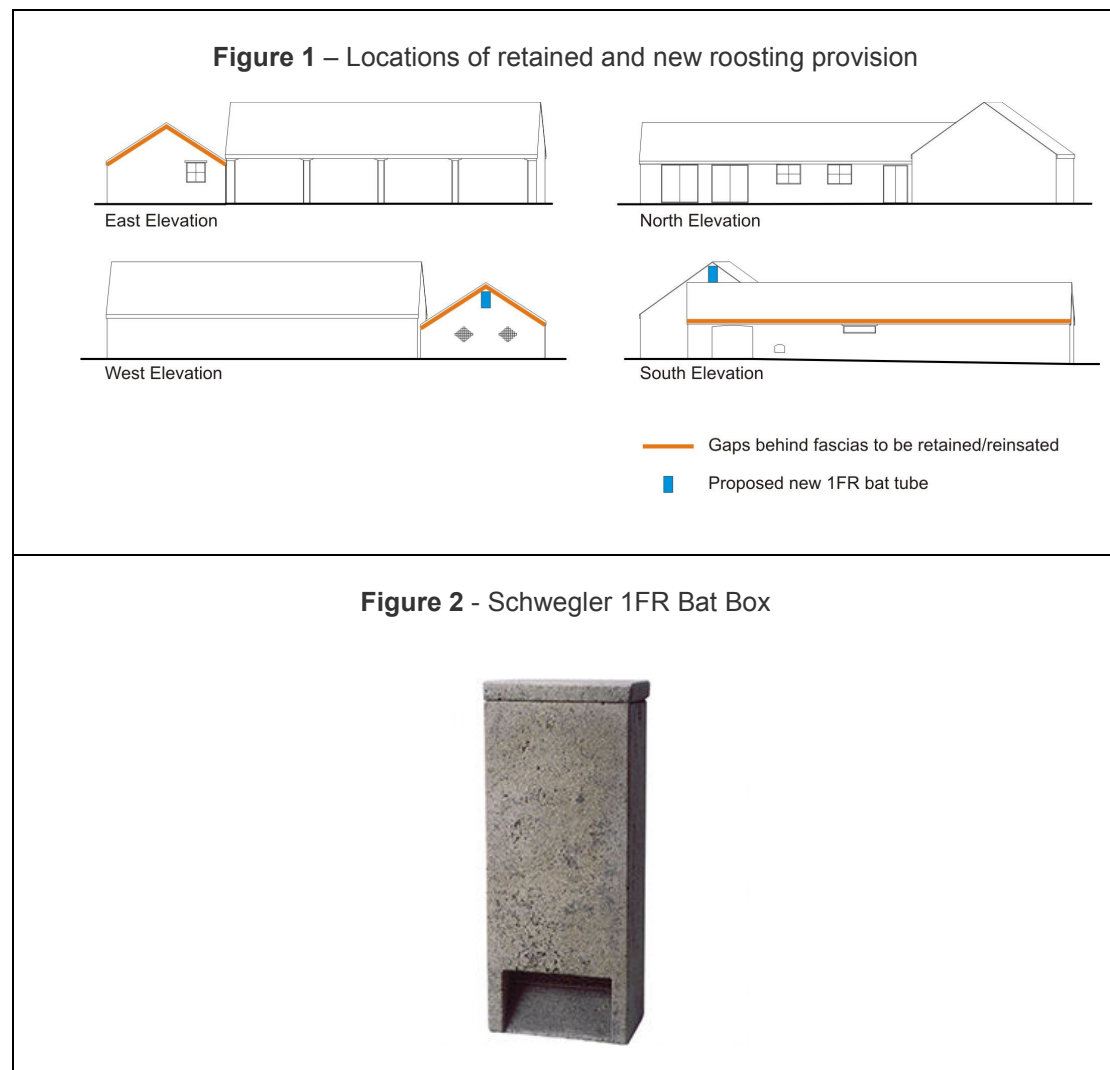
Retained & New Roosting Provision

The existing roosting areas at the top of the eastern and western gables of the southern section of the barn will be retained (see Figure 1). The existing entrance gaps behind the fascias will be retained or reinstated where fascias are to be replaced. Reinstated gaps behind fascias will have minimum dimensions of 20mm. Space will be left on top of the gable wall and access will be retained into the wall cavity. The roosting potential identified behind the existing fascia on the southern side of this section of the barn will also be retained.

Additional new permanent roosting provision for bats will be provided in the form of two Schwegler 1FR bat tubes installed at the top of the western gable of the southern part of the barn and at the top of the southern gable of the northern section of the building (see Figures 1 and 2). The bat tubes provide suitable roosting conditions for Pipistrelle bats. These gables have been chosen as the locations for the bat tubes as they are located in close proximity to the existing roost, have sufficient height for the installation of the tubes and are located where they will receive a significant amount of sunlight. The new roosting provision will be available to bats by the 1st May 2012. Bats will not be left without a roost.

No new external lighting will be placed in close proximity to the new bat roosting provision or existing features with roosting potential and lighting will be directed away from potential bat commuting routes/foraging areas.





Post-Construction Monitoring

The site will be inspected by the licensed ecologist before, during and immediately after development work is completed. A repeat daytime bat survey and dusk emergence survey of the building will be undertaken in the summer of 2012.

