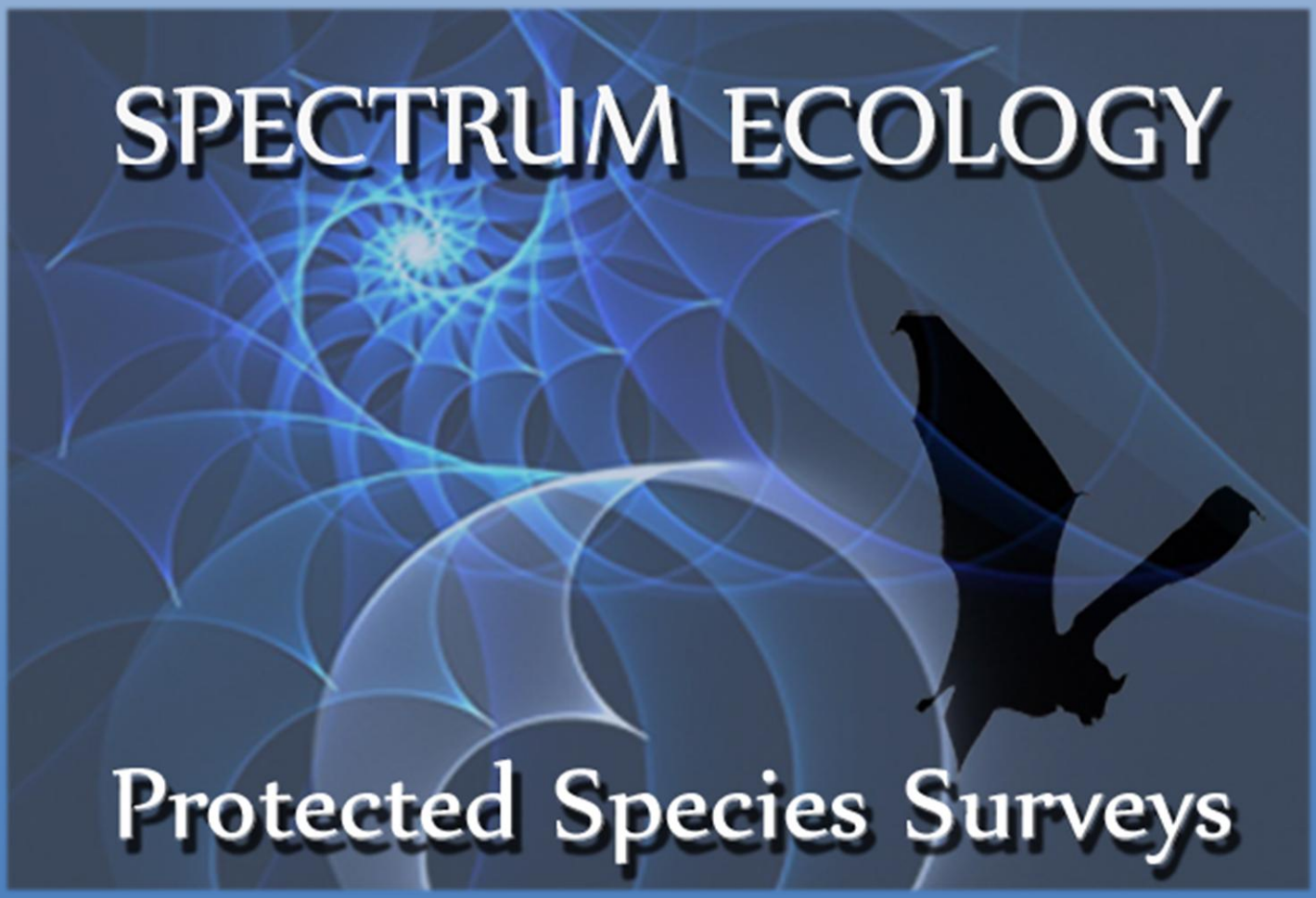


Bat Roost and Emergence Survey

Coed y Colwn Barn | Llanbethery | Vale of Glamorgan |

Report Prepared for:

Mrs Jane White

Higher End, Llanbethery,

Vale of Glamorgan, CF62 3AN

June 2014

SPECTRUM ECOLOGY

Protected Species Surveys

Porthcawl, Mid Glamorgan,

Wales, CF36 5SG

Report on survey for Bat Roost sites

In

Coed y Colwn Barn
Llanbethery
Vale of Glamorgan

Report by
Leigh Tuck & Dan Lock
Licensed Bat workers
For
Jane White
Higher End
Llanbethery
Vale of Glamorgan
CF62 3AN

Contents

1. Executive Summary

1.1 This report documents the findings and recommendations following supplementary surveys to a Full Bat Survey originally undertaken in September 2011. The original 2011 surveys are referred to within the current document and have been taken into consideration when making recommendations. The supplementary surveys were undertaken at the request and specification of the county ecologist as a requirement of a planning application by Mrs. Jane White. The full report documenting the September 2011 surveys is available on request.

1.2 The initial assessment for the current bat survey in Coed y Colwn Barn, Llanbethery, Vale of Glamorgan, located at grid reference ST038707 was carried out on the 2nd May 2014. A detailed scoping survey inspection was made of the building and no initial evidence was found to indicate that the site was used as a roost for bats.

1.3 The barn however was found to contain the numerous features with potential for use by bats. These included gaps in and under roof panels and ridge tiles, cracks and gaps in masonry and around all window and doorways, holes and gaps in soffits and gaps between the roof eaves and external walls. It should also be noted that all windows and doors had long since decayed and only 1 partial door remained leaving the building open to the elements.

1.4 A number of birds' nests (3) were observed in the joists below the upper floor and in the void beneath the eaves on the upper floor, with all nests occupied by swallows. Furthermore there were over 50 faecal pellets on the upper floor that on initial inspection were determined to be relatively fresh (within the last 2 months). There was also a pile of deteriorated pellets which had broken down into one large mound which was estimated to be over 3 years old judging by the colour and level of deterioration. Further investigation led to the conclusion that the pellets were likely to come from a Kestrel. All the instances of usage by birds highlights ease of access and potential for use by bats.

1.5 Sunrise / sunset bat emergence and activity surveys were then carried out on the 2nd May 2014 and again on the 11th June 2014. The observations were conducted of areas highlighted as potential access points in the scoping survey.

1.6 During the course of these surveys, no bats were seen entering or exiting the building. The surveys indicated therefore, that the building was not currently being used as a roost site. Further, the lack of positive bat activity signs during the scoping survey indicates that the building has not been used in the recent past and has no significance as an historical roost. The current surveys therefore help confirm the findings of the original 2011 surveys, during which no evidence was found to suggest use by bats.

1.7 A small number of bats were detected in the vicinity of the building during the sunset / sunrise surveys. Some of these bats (<6 passes in total) were seen to commute down the linear lane to the north of the property. This activity primarily involved foraging pipistrelle bats, observed just after sunset and seen to be passing around the building itself and along the lane towards the wooded area. The surveyors believe the lane to be a bat commuting route of minor local importance, which links the wooded area to the north west to the small river system to the south east. The environment immediately surrounding the property is relatively poor foraging habitat, being largely improved agricultural land.

1.8 Bats are highly mobile animals and may set up new roosts at any time. Despite the absence of any positive signs with regard to the building then, the high potential features noted in **1.3** must be taken into account. Therefore, as a precautionary measure, during any works on the building, especially in respect to operations such as removal of roofing materials and fascias etc. if any bats are found or if there is any reason to believe that a bat roost has been established in the interim, as a legal requirement, all works should cease immediately while further advice is sought from the local office of Natural Resources Wales.

1.9 Also due to the fact that there is now a known flight path within 10m of the building, contractors should be alert to the possibility of encountering such bat roosts unexpectedly during development work. In the unlikely event that such a bat roost is found, work on the structure should stop while further advice is sought from the local office of the Natural Resources Wales.

1.10 It is proposed to comprehensively refurbish and re-design the building. As the surveys indicated the building is not being used by bats, it is considered that works on the existing structure are not likely to cause disturbance to bats.

1.11 Any conservation measures undertaken with regards to the design of the building and / or implemented within the surrounding grounds should ideally aim to augment existing conditions for the bats.

As a consequence it is considered that a European Protected Species Development Licence will NOT be required from the Welsh Government.

However, points 1.8, 1.9 and 1.11 above should be taken in to account and works should proceed according to recommendations and best practice.

2. Background

2.1 Mrs Jane White is seeking planning permission to undertake re-development work to Coed y Colwn Barn, Llanbethery, Vale of Glamorgan, located at grid reference ST038707. The development will involve major works to the main structure of the building and all roof sections.

2.2 An original survey was commissioned by Mrs White on the recommendation of the Local Authority's Planning Department as part of the Authority's planning guidelines on protected species. The original survey took place in September 2011. However due to various circumstances the original survey was not used in time to accompany a planning application and on advice from the County Ecologist from the Local Authority it was determined that further survey effort was required. The new surveys took place on the 2nd May and the 11th June 2014 and it was deemed that one dusk survey and one dawn survey would be enough survey effort to augment the 2011 surveys. The surveyors then determined that at least 1 months gap should be left between the surveys to get a comprehensive picture of any bat usage.

2.3 Mrs White commissioned Mr. Leigh Tuck and Mr. Daniel Lock, Licensed Bat Workers, to undertake a detailed survey for the presence of bats. This report documents the results of surveys undertaken on the 2nd May 2014 and the 11th June 2014. In addition it makes recommendations on how the work might proceed and conservation measures which might be taken to ensure that bats are fully considered in any proposals.

3. Constraints

3.1 No problems were encountered in finding or accessing the site. All roof voids were fully accessible.

3.2 The poor condition of some elements of the building and a covering of Ivy on the east and west gable ends imposed limitations on how thoroughly various features could be investigated. Such inaccessible features included the ridge tiles and the western gable end, which is in poor repair and has potential for roosting bats. Although these areas could not be investigated at close hand due to the overriding health & safety concerns, the potential external access points to the interior were noted and investigated as far as possible with the additional use of a high powered spot-lamp, close focusing monocular and electronic 'see-snake' endoscope.

3.3 All potential access features were the focus for the subsequent bat detector surveys. By taking up surveying positions within the immediate grounds as well as in elevated positions on a number of hay bales near the property excellent views of the whole property were possible, including all of the potential access features present.

3.4 As a result of the above, the surveyors are confident that the assessment of Coed y Colwn Barn, Llanbethery was as thorough as can be expected.

4. Surveyor Experience

4.1 The principle surveyors and authors of this report, were Daniel Lock & Leigh Tuck (Licence Numbers 55038:OTH:CSAB:2014 & 54225:OTH:CSAB:2014 respectively), both Natural Resources Wales licensed bat workers with over five years licensed experience. Both have a wide and extensive experience in countryside management and protected species and have worked on many projects related to bat conservation. They have experience undertaking surveys as part of the National Bat Monitoring Programme, as well as undertaking numerous building and tree surveys for bats.

4.2 The Spectrum Ecology team of Dan Lock and Leigh Tuck have now both held a bat license for 5 years and have become recognised figures in the bat surveying arena, especially with local authorities such as Bridgend County Borough Council and the government body, Natural Resources Wales, previously Countryside Council for Wales.
This wealth of experience and resultant expertise allows us to produce good quality reports, mitigation documents and habitat management plans to assist clients with any ecology or biodiversity related plans within their projects. As well as producing numerous bat reports annually for private individuals and organisations, we have also been involved in providing training, guidance and advice in such matters to local authorities across Wales.

In 2010 we delivered Protected Species Awareness training over 3 days to Officers and Principle Officers across Bridgend County Borough Council. We were integral in developing BCBC's Tree Safety Policy & advised on the development of the protocol for Bats in bridges (for Highways, when surveying for defects etc). We have also assisted the Authority on numerous occasions in obtaining derogation licences from CCW / WG (now NRW) by carrying out bat surveys & developing mitigation measures / method statements.
Current and previous clients include Bridgend County Borough Council's regeneration department, Carmarthenshire Colleges and a number of private clients.

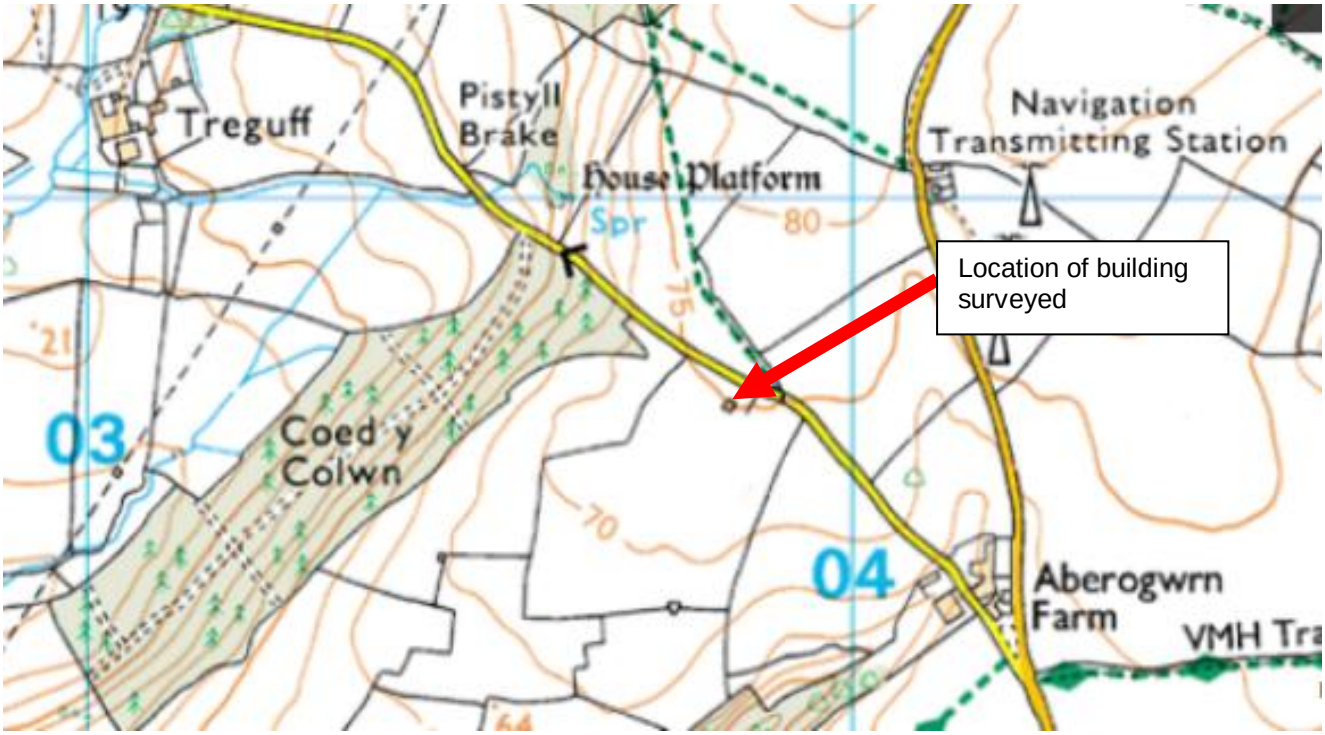
5. Site Description

5.1 The property is a detached, two storey Hay loft and animal pen barn built in the early 1900's. The barn is constructed of stone and brick and is in a slightly decayed but stable condition. The structure appears sound with the many areas exhibiting signs of cracking and exposed bricks with cracks and gaps. The roof is intact and comprised concrete asbestos sheets with no underlay. The majority of the facia, soffit and barge boards were in disrepair leading to numerous gaps and potential access points around the dilapidated roof section.

5.2 The footprint of the building is approx 4 metres wide and 12 metres long and is a typical agricultural building, with the ground floor layout functional for livestock use consisting of concrete pens with feeding troughs and the upper floor used for hay storage.

5.3 The property is situated within a very rural, agricultural landscape, accessed via a country lane and surrounded on all sides by improved field systems and mature hedgerows.

5.4 Location Map of Coed y Colwn Barn, Llanbethery



6. Survey Methodology

6.1 The principal aim was to survey the structure of the building for the presence of bats roost sites and to carry out evening/dawn emergence/bat detector surveys. First an external examination was made of the design and structure of the building to assess the suitability for use by bats and for potential access points. Evidence such as bat droppings (faeces) or urine staining on window frames, doors, walls or other surfaces were looked for.

6.2 The building was then inspected internally and a search was carried out for the presence of bats or the remains of dead bats and for signs of bats such as droppings, urine staining, staining on timbers and discarded fragments of insects such as moth wings. The survey was carried out with the aid of a close focusing monocular, Cluson CB2 Deluxe spot lamp and a digital endoscope.

6.3 One evening and one sunrise bat activity survey were carried out to record any bats emerging from / entering the structure. These were carried out with the aid of two Batbox Duet heterodyne / frequency division bat detectors. The observation was conducted primarily of areas highlighted as potential access points in the building survey. The surveyors also deployed a Wildlife Acoustics SM2BAT+ Ultrasonic recorder on the upper floor of the building for the two surveys.

7. Site Survey

7.1 As already noted, the initial survey was undertaken on the 5th May 2014. A detailed 'scoping survey' inspection was made of the exterior and interior of the building and no evidence was found to indicate that the site was used as a roost site by bats.

7.2 Potential roosting/access locations were noted as part of the scoping survey. These mostly concentrated around the raised ridge tiles and roof panels, gaps and cracks in the masonry (particularly around window openings and doorways) and gaps behind fascias, soffits, and barge boards. These potential locations are noted in appendix 2. These points were the primary focus for observation during the sunrise / sunset emergence and bat activity surveys.

7.3 As noted in the Constraints section of this report and in the previous survey, certain external sections of the roof could not be thoroughly investigated for evidence of bat activity. In particular, these included the ridge tiles and the western gable end, which is in poor repair, has a dense covering of ivy and has potential for roosting bats. However, with the use of the spot lamp close focusing monocular and where possible the electronic endoscope, a reasonably thorough assessment was able to be made.

7.4 The original building assessment was undertaken on the 5th May 2014 and the evening bat detector assessment was undertaken later on that day. Sunset was established to be 20:41 hrs British Summer Time. The weather was warm and calm. Cloud cover was 100%. The temperature was recorded as being 11.5ºC at sunset and 11ºC at 21:45 hrs and the wind speed was 5mph in a North easterly direction for the duration of the survey. The survey started at 20:00 hrs and the survey was concluded at 22:50 hrs.

No bats were detected emerging from the property.

7.5 The sunrise survey was undertaken on the 11th June 2014. Official sunrise was established to be at 04:59 hrs British Summer Time. The weather was good with the wind recorded at 10mph in west-south-westerly direction, low cloud cover at around 80%. The temperature was 14ºC at 03:50hrs and rose to 15ºC at the end of the survey. The survey started at 03:50 hrs and was concluded at 05.30hrs.

No bats were detected entering the property, and no swarming activity was recorded.

7.6 Although no bats were detected entering / exiting the building, during the dusk and dawn surveys, 5 passes of a Common pipistrelle *Pipistrellus pipistrellus* bat and 1 pass of Myotis sp. was detected commuting/foraging up and down the lane which runs in a east / west direction at the immediate north of the property and around the land to the south of the property. The activity was logged as follows:

Dusk

21:10 hrs Pipistrelle pass from east to west - south of property

21:25 hrs Pipistrelle pass from west to east - north of property along lane

21:26 hrs Myotis sp. pass from east to west - south of property to the lane

21:30 hrs Pipistrelle pass from west to east - north of property along lane

Dawn

03:51hrs Pipistrelle pass from west to east - south of property

04:19hrs Pipistrelle pass from east to west - south of property

No bat activity or calls triggered the SM2BAT+ into the recording mode inside the building on either survey.

7.7 As a result of the information highlighted above in section **7.6**, the surveyors believe the lane to be a bat commuting route of local importance.

8. Historical and Other Relevant Information

8.1 A check with the local bat group was made but no response had been received by the time of writing this report.

8.2 Coed y Colwn barn is currently not occupied but is used on a regular basis by the farm nearby for storage, resulting in frequent disturbance.

8.3 An aerial photograph which shows Coed y Colwn Barn in a wider landscape context.

9. Ecology of Bats

9.1 There are 18 species of bats of which 17 are known to be breeding in the United Kingdom. Most of them are regarded as threatened due to a variety of factors including habitat loss and disturbance/damage to roosts. Of these species a number regularly use buildings or trees at certain times of year in order to find safe secure roost sites.

9.2 Bats are highly mobile flying mammals which in the United Kingdom, feed entirely on insects. Having evolved over seventy million years they have developed sophisticated mechanisms to allow them to effectively 'see' in the dark by using sound. Called echo location this system allows them to track and hunt down small moving insects whilst in flight, rather like radar does in a modern military fighter aircraft

9.3 In winter, when their prey is scarce, British bats hibernate in the cool parts of caves, buildings and tree cavities. They may wake occasionally and will feed if evening temperatures are greater than 7°C, when flying insects will be active. Generally however, activity in winter is very limited and bats only become fully active in spring.

9.4 In late spring female bats will gather together in maternity roosts in order to give birth and rear their single baby in June. Such maternity roosts are often near to foraging areas in order to minimise energy usage as flight requires vast energy resources.

9.5 Whilst females form maternity colonies, usually in warmer roofs or trees, male bats tend to seek out cooler sites which may not be so close to the foraging areas. Males are often solitary and do not exhibit the social behaviour that marks out females during the birthing period.

9.6 Several British bat species are known to rely heavily on buildings to roost. The Common pipistrelle, *Pipistrellus pipistrellus,* appears to be well represented in Vale of Glamorgan county and might normally be expected to be encountered in built structures. The Soprano pipistrelle, *Pipistrellus pygmaeus*, is another species which commonly roosts in buildings as will the Brown long-eared bat, *Plecotus auritus*. Another two bat species, which can often be found in buildings are the closely related Whiskered, *Myotis mystacinus*, and Brandt's bats, *M. brandtii*.

10. Relevant Legislation

10.1 The marked decline of all British bats has resulted in their being given protection under the Wildlife and Countryside Act 1981. Section 9 of the Act (through provisions in Schedule 5) made it illegal to intentionally kill, injure or take any British bat. It also made it an offence to intentionally damage or destroy their place of rest (the roost).

10.2 Further all bat species are protected under Annex IV of the European Communities Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, which requires the United Kingdom government to provide bats with strict protection. This is currently done through the Conservation of Habitats and Species Regulations 2010.

10.3 Conservation (Natural Habitats, &c.) (Amendment) Regulations 2007 regulation 7 (4) makes a number of important changes to the Wildlife and Countryside Act 1981. One of the most significant is the addition of the word 'recklessly' within offences under Section 9 (4) of

the Wildlife and Countryside Act. This covers all bat species.

10.4 Natural Environment and Rural Communities (NERC) Act, 2006 Section 40 places a duty on public authorities to conserve biodiversity. This section states that (1) Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity, and (3) Conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat.

11. Discussion

11.1 The original preliminary scoping survey carried out on the 16th September 2011 revealed no evidence to suggest the site was being used as a bat roost. This was again confirmed on the 5th May 2014 as conditions within the building remained the same. During the original September 2011 surveys, no bats were seen or detected emerging from or entering the building. During the current evening and dawn emergence / bat activity surveys carried out on the 5th May 2014 and the 11th June 2014, again no bats were detected emerging from or entering the building. A number (<2 with 5 passes) of Common pipistrelle bats were observed foraging within the immediate vicinity of the building and a single Myotis species bat was also observed heading towards the nearby lane / commuting route on the evening emergence survey. The dawn emergence / bat activity survey revealed no bats entering the building and no swarming activity was detected around the building itself.

11.2 As the above surveys found no evidence of bats using the building, it is considered that the proposed works will not disturb or pose a threat to bats or their roosts. It is therefore considered that a European Protected Species Development Licence will **NOT** be required to proceed.

11.3 Despite the absence of any positive signs with regard to the presence of bats, the building does contain a number of features known to be made use of by roosting bats and bat activity was also observed within the immediate vicinity. Therefore, as a precautionary measure, during any works on the building, especially in respect to operations such as removal of roofing materials, if any bats are found or if there is any reason to believe that a bat roost has been established in the interim, as a legal requirement, all works should cease immediately while further advice is sought from the local office of Natural Resources Wales (see section 10.3 above).

11.4 Also due to the noted bat activity within the immediate vicinity, the fact that a flight path exists within 10m of the building and the presence of these high potential features, contractors should be alert to the possibility of encountering such bat roosts unexpectedly during development work. In the unlikely event that such a bat roost is found, work on the structure should stop while further advice is sought from the local office of Natural Resources Wales.

11.5 Although the surveys indicated that bats were not using the existing building, it does nevertheless present numerous features with potential opportunities for roosting bats. To compensate for the loss of such opportunities, it is recommended that a small number of conservation measures are implemented to ensure the favourable conservation status of the species is maintained. These will be outlined in the Recommendations section below.

12. Recommendations

12.1 No bats were seen to be using the building during the course of the surveys. It is therefore recommended that works may proceed without any derogation from the Welsh Government / Natural Resources Wales. However, due to the presence of the Pipistrelle bat activity within 10metres of the building, also due to the fact that the flight paths and foraging behaviour occurs within the vicinity (less than 15 metres) and due to the presence of features within the existing building which are known to have a potential for use by bats, the works should be carried out with caution following best practice. In order to ensure no net loss of roosting opportunities, certain steps and measures should be taken to improve the local roosting habitat for bats. These should include the precautions and conservation measures outlined below.

12.2 Specific gaps, such as around soffit boards and between roofing felt and roofing tiles should be created to allow access for crevice roosting species such as Pipistrelle. Any new barge boards, gutter plates and fascias could be left with a gap of 15mm- 20mm along the lower edge, allowing access to bats behind the board.

12.3 All contractors carrying out works should be warned verbally or in writing of the possible presence of roosting bats, and of their protected status. It should be clearly understood that in the event of any bats being found during the works, all works should cease in the affected area until appropriate expert advice has been sought.

12.4 Where possible, works should be timed to ensure they occur outside of the main bat activity period – i.e. works conducted October to March.

12.5 In any future development, all materials used should be carefully chosen to ensure that they are not toxic or harmful to bats. If it is proposed to treat timbers or use any chemical sprays, these should be with `bat friendly` compounds only, in accordance with current NRW guidelines.

12.6 In any future building development at the site, a number (2) of ridge tiles could be left un-mortared to allow access for crevice dwelling bats and a bat tile inserted in the roof covering of each aspect.

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

13. References

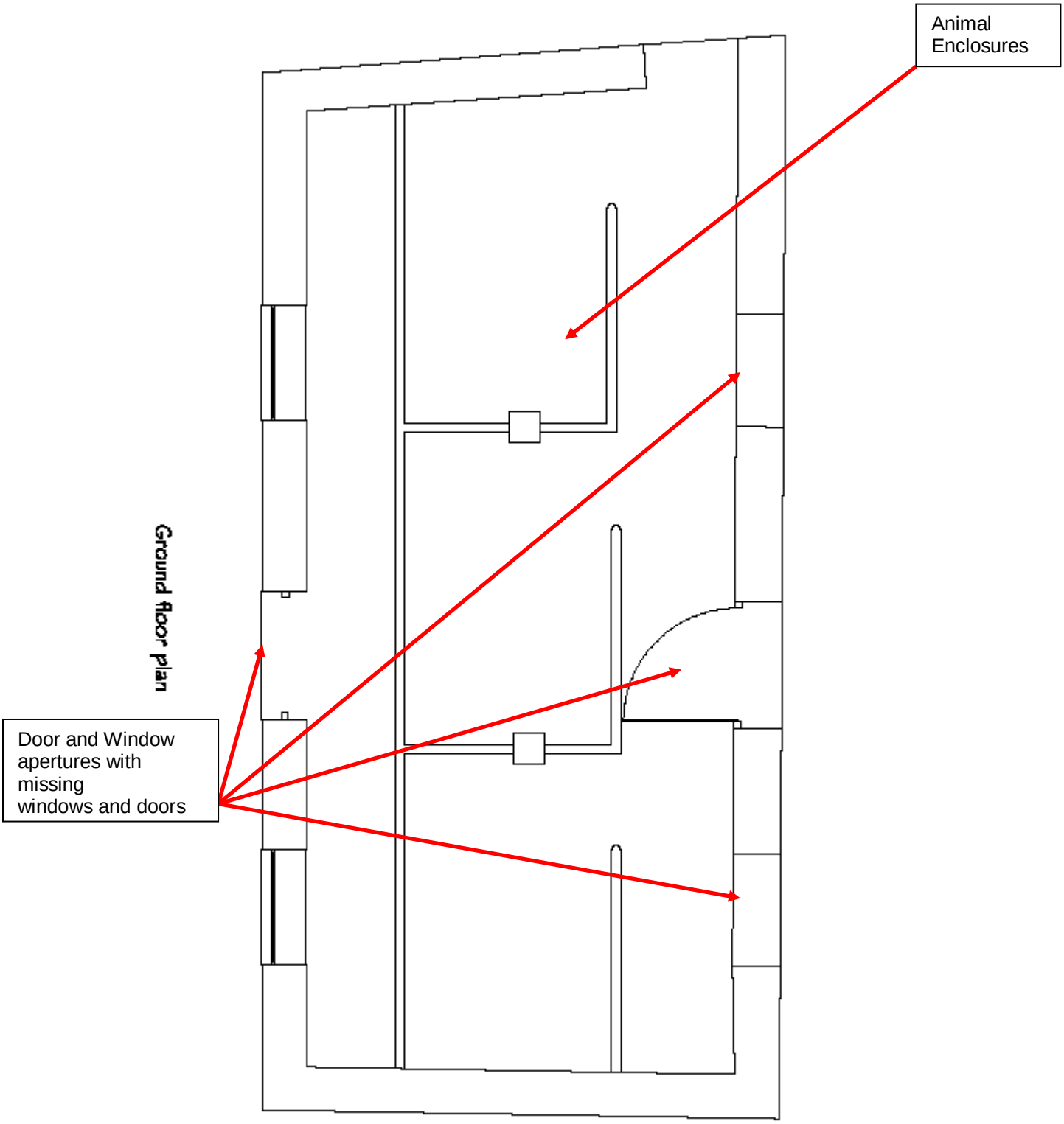
•*Bat Surveys: Good Practice Guidelines 2nd Edition - Bat Conservation Trust 2012*
•*Bats in Traditional Buildings - English Heritage, National Trust and Natural England 2009*
•*Urban Environments and Wildlife Law: A Manual for Sustainable Development – Paul A Rees 2002*
•*'Bats and the law: What to do when the law is broken', Childs, J. (2001), The Bat Conservation Trust and the Royal Society for the Protection of Birds.*
•*'Distribution Atlas of Bats in Britain and Ireland: 1980 – 1999', Richardson, P. (2000), The Bat Conservation Trust.*
•*'Focus on Bats', Mitchell-Jones, T. (1992), English Nature.*
•*3rd Edition Bat Workers' Manual - Mitchell-Jones, A.J, & McLeish, A.P. Ed. 2004*
•*Bat Mitigation Guidelines - A. J. Mitchell-Jones / English Nature / JNCC 2004*
•*'Action Plan for the Conservation of Bats in the United Kingdom', Hutson, A.M. (1993), The Bat Conservation Trust.*

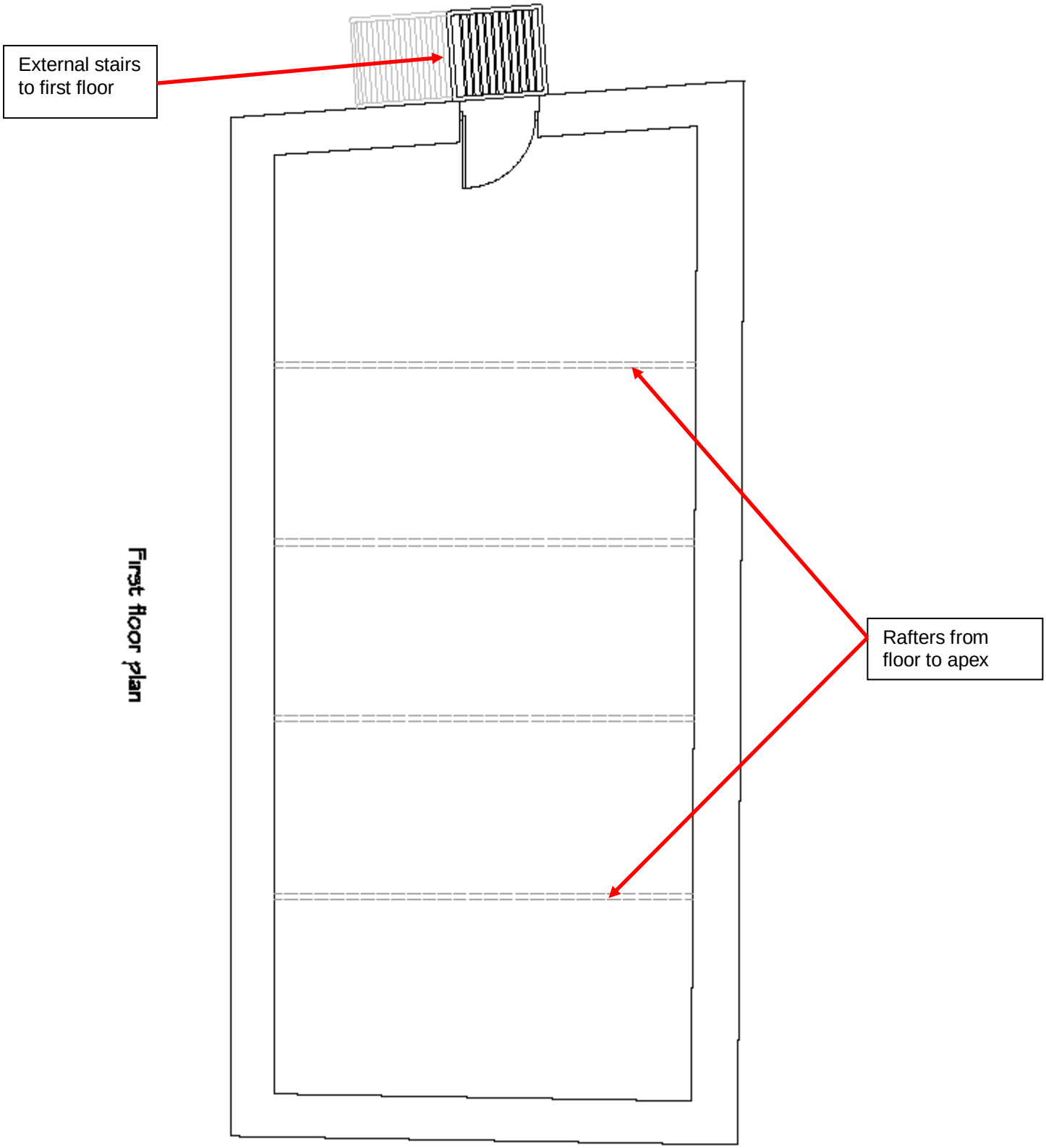
Disclaimer

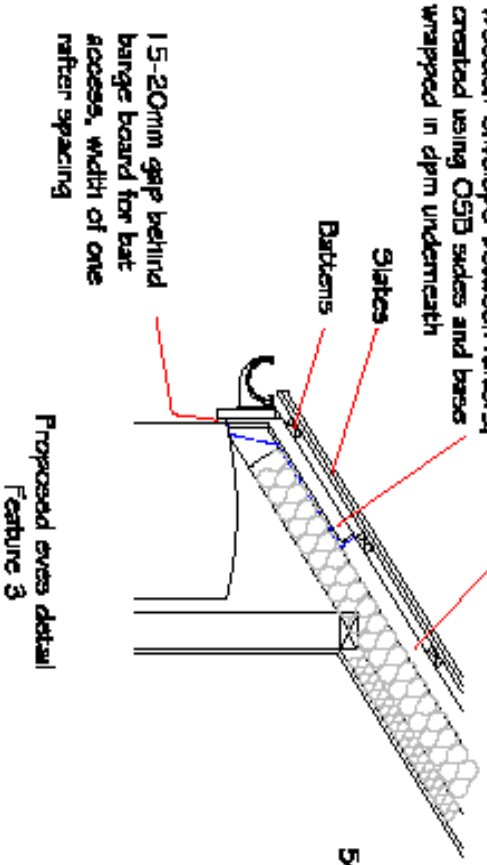
This survey was carried out and an assessment was made of the site described at a particular time. The evidence that this report contains can be used to draw conclusions as to the likely presence or absence of bats and the likely impacts of any proposed works. Every effort has been taken to provide an accurate assessment of the situation pertaining to this site at the specific time of the survey. No liability can be assumed for omissions or changes after the survey has taken place.

14. Appendices

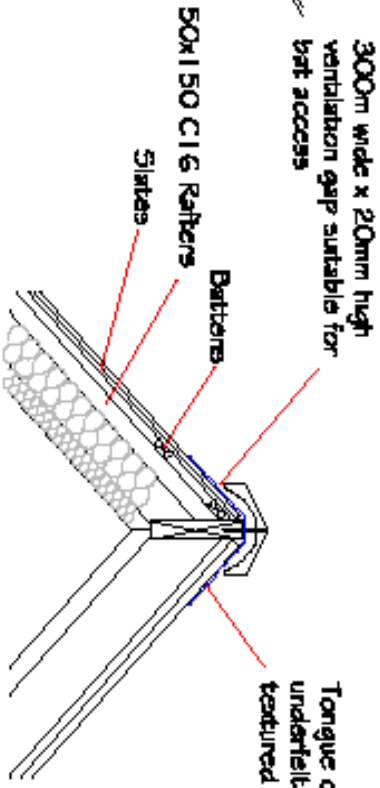
Appendix 1.Plan of the building & proposed bat access points




External stairs to first floor
Rafters from floor to apex
First floor plan



Proposed eves detail
Feature 3



Proposed bat access ridge detail
Feature 2

Appendix 2. Photographs of the building. The identified potential access points and roosting opportunities have been indicated with a red arrow.

Northern Aspect

Southern Aspect

Eastern Gable End

Western Gable End