



**Brynhyfryd Chapel, Thomas Street,  
Treharris, CF46 5AA**

**Bat Survey Report for FCE (Wales) Ltd**



***A European Protected Species Licence will be required  
for works to be undertaken on the roof of the property***

|                                             |                                                                                                                                                                                                                                                                |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Report type</b>                          | Bat Survey Report                                                                                                                                                                                                                                              |
| <b>Report reference</b>                     | IG2025BrynhyfrydChapel                                                                                                                                                                                                                                         |
| <b>Site</b>                                 | Brynhyfryd Chapel, Thomas Street, Treharris, CF46 5AA                                                                                                                                                                                                          |
| <b>Grid reference</b>                       | ST 09731 96822                                                                                                                                                                                                                                                 |
| <b>Client</b>                               | FCE (Wales) Ltd                                                                                                                                                                                                                                                |
| <b>Date(s)/time(s)/type(s) of survey(s)</b> | <b>Scoping survey:</b> 14 <sup>th</sup> August 2025<br><b>1<sup>st</sup> dusk emergence survey:</b> 21 <sup>st</sup> August 2025 between 20:00 and 22:23<br><b>2<sup>nd</sup> dusk emergence survey:</b> 11 <sup>th</sup> September 2025 between 19:15 & 21:40 |
| <b>Surveyor details</b>                     | <b>Scoping survey:</b> Ellie Davies and Tom Bellingham<br><b>Dusk surveys:</b> Ellie Davies, Cathy Browne, Tom Bellingham and NV cameras                                                                                                                       |
| <b>Architect</b>                            | C2J Architects                                                                                                                                                                                                                                                 |

| Version | Status | Changes                       | Name         | Position | Date       |
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## Executive summary

- ✦ Brynhyfryd Chapel (the property) is a detached west facing two storey chapel with a smaller single storey extension to the rear. The chapel is constructed of stone walls. The soffits/fascia/barge boards are a mix of timber and uPVC and all windows are either bricked up or covered with poly-carb sheeting. It is subject to proposed plans for a conversion into 6 flats. The walls are in good condition but there are wall top gaps and missing stone blocks. The windows and doors are intact and remain closed when not in use, with no gaps around any of the frames. The main roof has some missing slates, and an area of raised dry verge to the rear of the chapel. The roof of the single storey extension has slipped and raised slates and gaps underneath the ridge tiles.
- ✦ On 14<sup>th</sup> August 2025, I&G Ecological Consulting Ltd undertook a daytime bat scoping survey of the property. As a result of the findings, dusk emergence surveys were undertaken on 21<sup>st</sup> August 2025 and 11<sup>th</sup> September 2025. The weather conditions present at the property were conducive to bat activity and access was available to all parts of the property.
- ✦ This report confirms the findings of these surveys, completed in accordance with current best practice (Collins, J. (Ed.) 2023) and conducted by experienced, licensed ecologists and assistants.
- ✦ The property is located in the town of Treharris in the Taf Bargoed Valley. **It is within favourable bat habitat but is not within 10km of a site designated for its bat interest.**
- ✦ During the scoping survey, no live or dead bats were found, however there was no access inside the chapel due to fire damage. Therefore, two dusk surveys were carried out. The building has **confirmed** potential to support roosting bats and a **confirmed** risk of bats using the features present. During the dusk surveys three ***Common pipistrelle*** were seen to exit the wall top gap on the western gable end.
- ✦ In relation to a **Roost Characterisation Assessment**, from the evidence gathered it is considered that the loft of the building is being used as a **roost** by a **small number (three confirmed) of *Pipistrellus pipistrellus***.
- ✦ **Mitigation measures will need to be implemented for bats.** Biodiversity enhancement measures are also required for bats and birds to ensure the development complies with the Environment (Wales) Act 2016, Future Wales 2040, and PPW (Edition 12, 2024). Recommendations are as follows (all nests are to be confirmed vacant before works commence). See appendix 5 for plans and appendix 8 for examples and advice on siting. **The plans to be submitted are to show all bat and bird mitigation/enhancement measures as well as any proposed external lighting.**
  - ✦ **Recommendation 1 (Site Bat Enhancement):** Prior to works commencing, x 1 Beaumaris Woodstone bat box (or similar) to be affixed to the rear (eastern) gable end.
  - ✦ **Recommendation 2 (Bat Mitigation):** access will be retained on the front western gable end to allow for wall top roosting.
  - ✦ **Recommendation 3 (Bird Enhancement):** 1x Sparrow terrace to be affixed to the rear (eastern) gable end.
  - ✦ **Recommendation 3 (Broadscale Enhancement):** Greater ecological benefit could be delivered by planting up any gardens with wildlife friendly plants and retaining any mature trees.

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# 1. Introduction

## 1.1 Scope and purpose of survey

1.1.1 Any sign of use of a site by bats is enough to confirm that the space has 'bat interest' and is enough to confirm the importance of the location to bat species. All species, as well as their resting places, are protected by law and the site is protected even when bats are not present. See appendix 1 for an introduction to bat surveys, including the aims of the scoping survey, appendix 2 for an overview of the legislation, and appendix 3 for information on roost types and survey timings. Appendix 4 lists all surveyors who undertake work for I&G Ecological Consulting Ltd and includes their experience.

1.1.2 This report confirms the results of, and conclusions and recommendations from, the surveys undertaken. It aims to provide the local planning authority with sufficient information to enable a full assessment of the potential ecological impacts of the proposed development. The CIEEM Guidelines for Ecological Report Writing (2017) state that it is important that the structure and content of a report should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development. This report has therefore been written in line with these guidelines.

1.1.3 For the purposes of this survey report, the site boundary is defined as the buildings and surfaces within the overall site footprint.

## 1.2 Site characteristics and proposed works

1.2.1 Brynhyfryd Chapel (the property) is located in the town of Treharris in the Taf Bargoed Valley. It is situated within favourable bat habitat, with several woodland sites – including ancient woodland sites – within 2km in all directions. There are also small agricultural fields (a mix of unimproved, semi-improved and improved) within 2km with mature hedgerows that provide connectivity. In relation to watercourses, 210m to the south-west is the river corridor of the Afon Taff. Additionally, located approximately 1.9km south-east is Nelson Bog SSSI.

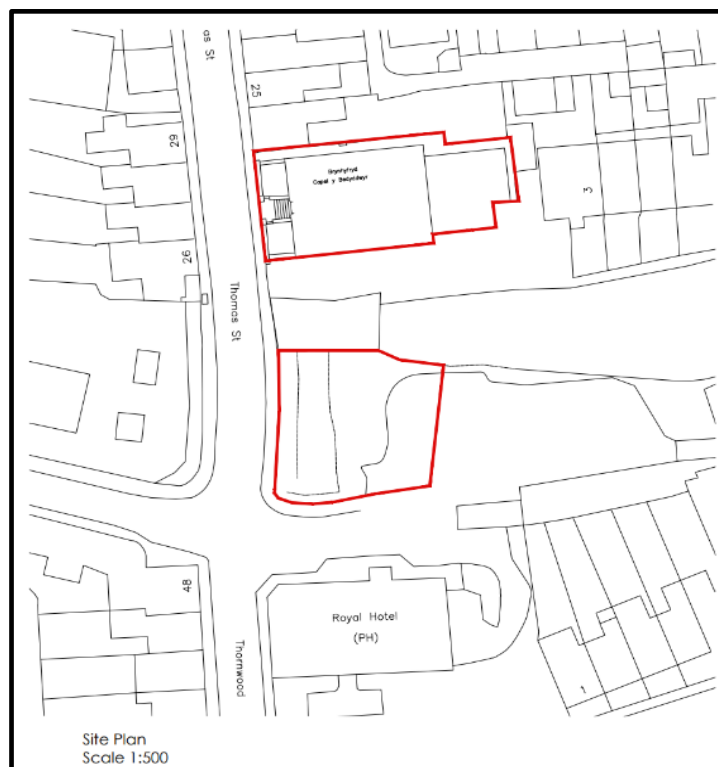


1.2.2 The property is subject to proposed plans for a conversion into 6 flats. Figure 1 shows an aerial view of the property, figure 2 on the following page shows the wider environment, and figure 3 shows a site plan. Additional plan drawings are included in appendix 5.

**Figure 1:** Aerial view of the property – the dwelling is outlined in red (from Bing Maps)



**Figure 2:** Map showing the wider environment. The property is indicated by a red pin.



**Figure 3:** Site plan

## 2. Desk study methods and results

### 2.1 Methods

2.1.1 A 2km search area is used which covers the predicted zone of influence of the proposed development. Where bats are found to be present, any sites within 10km which are designated for their bat interest will also be noted. The reasons for the site designations have also been considered when discussing potential impacts on the biodiversity of these sites. DataMapWales is used to establish the proximity of National and International Statutory Designations, particularly in relation to designations for bat interest. Species searches are also conducted through the Local Records Centre (LRC) where appropriate. An online search of planning applications at the property is undertaken to understand its planning history, especially relating to bats.

### 2.2 Results

2.2.1 No statutory or non-statutory protected features of ecological significance are present within nor adjacent to the property. Within 2km, approximately 1.9km south-east is Nelson Bog SSSI, which is not designated for its bat interest. There are no sites designated for their bat species within 10km of the chapel. The nearest site designated for its bat interest is Mynyddoedd Llangynidr a Llangatwg, Cefn yr Ystrad a Chomin Merthyr SSSI (12.3km north), where the caves within are known to support hibernating bats, including Lesser Horseshoe bats. Also, within 2km there are several Ancient Woodland Sites, the closest being an Ancient Semi Natural Woodland Site 95m to the south-east. See Figure 4 for sites within 2km with the location of the property being shown by a red pin.

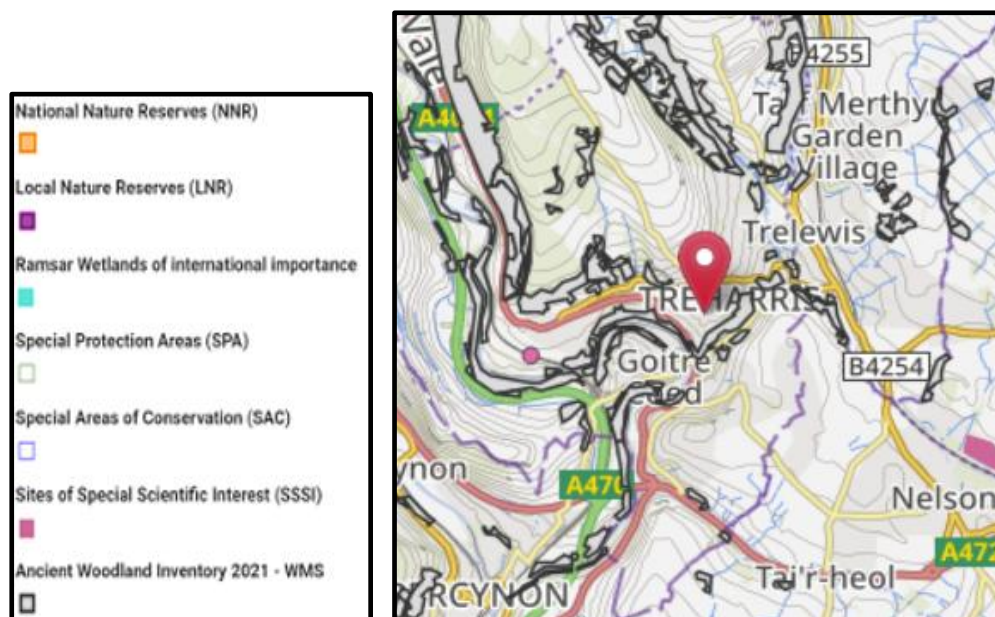


Figure 4: Designated sites within 2km (taken from DataMapWales)

2.2.2 The LRC data search conducted in September 2025 reported records for the following bat species within 2km of the site:

- ✦ **Myotis species:** 90 records, the closest being in 2011, recorded from 572m away.
- ✦ **Pipistrellus species:** 164 records, the closest being in 2011, Common pipistrelle suspected emerging from chapel.
- ✦ **Plecotus species:** 35 records, the closest being in 2011, recorded from 11m away.
- ✦ **Rhinolophus species:** 4 records, the closest being in 2022, recorded from 1,627m away.
- ✦ **Nyctalus species:** 36 records, the closest being in 2013, recorded from 210m away.
- ✦ **Eptesicus species:** 3 records. The closest being in 2017, recorded from 1,918m away.

2.2.3 An online search reported no previous applications for the property.

### 3. Field survey methods and results

#### 3.1 Methods

3.1.1 A Preliminary Roost Assessment (PRA) was undertaken on 14<sup>th</sup> August 2025 to identify Potential Roost Features (PRF). Details of the equipment used by I&G Ecological Consulting Ltd can be found in appendix 1. The survey was undertaken by Ellie Davies and Tom Bellingham.

3.1.2 In relation to survey limitations, many of the UK species of bat are crevice dwelling, and bats or signs of bats can be difficult to find within a building. In addition, there may be areas that are inaccessible to the surveyor. Externally, sufficient access was available to enable a thorough survey from ground level while internal access was available to all areas. In addition, two activity surveys were undertaken in good weather conditions to understand how bats may be using the surrounding area. Using the equipment available, all accessible areas were thoroughly surveyed to maximise effectiveness.

3.1.3 Two dusk emergence surveys were undertaken. The first one was undertaken on 21<sup>st</sup> August 2025 and the surveyors were Ellie Davies, Cathy Browne and Tom Bellingham. Sunset was at 20:23, the survey started at 20:00 and ended at 22:23. The weather remained dry for the survey but was overcast before sunset, humidity was around 64%, there was a light north-easterly breeze of 2mph, and the temperature started at 17°C and ended at 16°C.

3.1.4 The 2<sup>nd</sup> dusk emergence survey was undertaken on 11<sup>th</sup> September 2025 and the surveyors were Ellie Davies, Cathy Browne and Tom Bellingham. Sunset was at 19:37, the survey started at 19:15 and ended at 21:40. The weather remained dry for the survey but was overcast before sunset, humidity was around 75%, there was a south-westerly breeze of 9mph, and the temperature started at 14°C and ended at 14°C.



3.1.5 Figure 5 shows the position of surveyors and night vision (NV) camera during the activity surveys. Each surveyor had a Magenta 5 or an Elekon Batscanner bat detector to assist in identification and detection of bats and their behaviour. **Surveyors moved along the elevation they were watching during the surveys.**

**Figure 5:** Surveyor positions during the activity surveys (from Bing Maps).

### 3.2 Survey results

3.2.1 The PRA found that the building is a detached west facing two storey chapel with a smaller single storey extension to the rear. The chapel is constructed of heavily vegetated stone walls. The soffits/fascia/barge boards are uPVC and all windows are either bricked up or covered with poly-carb sheets. It is subject to proposed plans for a conversion to 6 flats. The walls are in good condition but there are wall top gaps and missing stone blocks. The windows and doors are intact and remain closed when not in use, with no gaps around any of the frames. The main roof had some missing slates, and an area of raised dry verge to the rear of the chapel. The roof of the single storey extension has slipped and raised slates and gaps underneath the ridge tiles. As a result of all the findings, the property has **confirmed** potential to support a small number of roosting bats and a **confirmed** risk of bats using the features present. Site survey images are included in appendix 6.

3.2.2 Figure 6 shows the flight lines of bats detected and the times they were detected. The species detected during the surveys, and the nature of their activity was as follows:

- ✧ ***P. pipistrelle***: During the 1<sup>st</sup> dusk survey two bat was seen to leave a wall top gap at the apex of the western gable end while during the 2<sup>nd</sup> dusk survey one bat was seen leaving the same gap. The earliest emergence was 36 minutes after sunset on the 1<sup>st</sup> dusk survey and bats were detected foraging and commuting around the area for up to 30 minutes after the final emergence and up to 15 minutes before the first emergence.
- ✧ ***P. pygmaeus***: No bats were seen to either leave or enter any part of the chapel. The only activity was one individual during the 1<sup>st</sup> dusk survey commuting to the south of the chapel 37 minutes after sunset.

3.2.3 **Flight activity summary**: During the activity surveys up to three **Common pipistrelle** were seen to leave the dwelling and this species, and **Soprano pipistrelle** was detected foraging and commuting around the area.

3.2.4 **No evidence of nesting birds** was found and no signs of the presence of Owl were found.



**Figure 6:** Aerial map showing the flight lines of bats detected (from Bing Maps)

21/08/2025: Sunset was at 20:23, the survey started at 20:00 and ended at 22:23

11/09/2025: Sunset was at 19:37, the survey started at 19:15 and ended at 21:40

## 4. Interpretation, conclusions and recommendations

### 4.1 Interpretation and conclusions

4.1.1 Using the findings of the desk study and field surveys, it is **concluded that the property is located within favourable bat habitat but is not within 10km of a site designated for its bat interest.**

4.1.2 **Roost Characterisation Assessment:** from the evidence gathered it is considered that the loft is being used as a **roost** by a **small number (three confirmed) of *Pipistrellus pipistrellus***. A summary of the evidence is as follows:

✧ ***P. pipistrellus*:** There are no sites within 10km designated for this species, and there are roost records from within 2km. During the scoping survey no live or dead bats were found, however there was no access internally due to fire damage. Three Common pipistrelle bats were seen emerging from the wall top gap on the western gable end. Also, during the dusk surveys bats were detected foraging and commuting to the south of the chapel for up to 30 minutes after the final emergence and up to 15 minutes before the first emergence.

4.1.3 **Roost significance:** In relation to roost status and significance, the data included in Tables 3.1, 3.2, 5.1 and 6.1 (see appendix 7) of the Bat Mitigation guidelines (Reason & Wray, 2023) were used, and focus was placed upon the need for appropriate – but proportionate – mitigation.

✧ ***P. pipistrellus*** are considered to be a common bat species and are a species of Least Concern on the IUCN Red List of Threatened species but they are UK priority bat species. Nationally, they are a priority species and have been the subject of a Species Action Plan under the UK Biodiversity Action Plan, the populations are considered to be stable and their conservation status is favourable. As a result, the roosts are considered to be of low conservation significance. See appendix 8 which shows roost status and resulting mitigation/compensation requirements. Using this it can be considered that the proposed mitigation is considered suitable as it provides mitigation measures on the building as well as providing additional enhancement on the buildings and around the site.

4.1.4 In relation to use of the property at other times of the year by those species considered to be roosting:

✧ ***P. pipistrellus*** will use small cracks and crevices within cavity walls in a church roof or bell tower, a quiet place in a large house, a hollow tree, or rock crevice where small groups will form clusters. These species have a relatively flexible winter hibernation strategy and will fly when the weather is mild. They will also use bat boxes to hibernate. It is therefore considered that there is low to moderate potential for this bat species to be hibernating in the buildings. In addition, the measures to be put in place (e.g., inspection prior to works commencing and timing to avoid sub-optimal weather conditions such as when bats may be in deep torpor) will ensure that any risk is minimised.

4.1.5 *Crevise-dwelling bats* such as ***P. pipistrellus*** can crawl into roosts via small gaps in the range of 15–20mm high by 20–50mm wide. The roost area should maintain a crevice of this approximate size gap that the bats can roost between. The area this roost provision covers can be small but about 1m<sup>2</sup> would be useful for summer nursery roosts. The height of entry can be from 2–7m. All bats and their roosts, irrespective of the number of bats, species, and whether bats are present or not, receive protection from the Conservation of Habitats and Species Regulations 2017 and the Wildlife and Countryside Act 1981 (as amended). As a result, in the absence of mitigation, the proposed works could result in the destruction of bat roosts for two species of bat as well as the potential disturbance, killing and/or injury of bats. Destruction of a roost is an absolute offence under the above legislation and **therefore, an EPS derogation licence must be obtained from Natural Resources Wales for the works to be legally undertaken on the roof of the dwelling.**

4.1.6 Enforceable conditions of the EPS licence will require the maintenance of mitigation measures to minimise the risk of disturbance, killing or injury of bats (i.e. timing and methods of demolition works), and compensation measures to ensure continued bat roosting provision at the site and that the site is enhanced for protected species. These are outlined in section 4.2 and detailed in 5.1.

4.1.7 There are not considered to be any survey limitations which would impact upon the findings and recommendations of this report.

## 4.2 Recommendations

4.2.1 As noted in section 4.1 above, all bats and their roosts are protected under the Conservation of Habitats and Species Regulations 2017, and the Wildlife and Countryside Act 1981 (as amended). An EPS licence must be obtained for the works to legally proceed.

4.2.2 *P. auritus* are a species of principal importance in Wales. With regards to such species (Biodiversity Action Plan (BAP) species) in Wales, under section 42 of the Natural Environment and Rural Communities Act 2006, and sections 6 and 7 of The Environment (Wales) Act 2016 – the LPA must ‘have regard’ to the conservation of their biodiversity in considering the planning application. In the Environment (Wales) Act 2016 Section 6 *places a duty upon Local Authorities to enhance biodiversity and the resilience of ecosystems* and 7 to *Creating local biodiversity lists and a duty to take steps to maintain and enhance biodiversity*.

4.2.3 Measures will be required to help meet obligations within The Environment (Wales) Act 2016, Future Wales 2040, and Planning Policy Wales 12<sup>th</sup> Edition (2024); as well as compensate for the loss of roosting opportunity. Excellent long-term enhancement can be delivered, see appendix 8 for proposals and examples. Mitigation measures (against the risk of disturbing, killing, or injuring bats during the works), and compensation measures (to provide continued bat roosting provision at the site) will need to be implemented as conditions of the licence. Recommendations are as follows and **plans for the location of all bat/bird provision are to be submitted:**

- ✦ **Recommendation 1 (Site Bat Enhancement):** Prior to works commencing, x 1 Beaumaris Woodstone bat box (or similar) to be affixed to the rear (eastern) gable end.
- ✦ **Recommendation 2 (Bat Mitigation):** access will be retained on the front western gable end to allow for wall top roosting.
- ✦ **Recommendation 3 (Bird Enhancement):** 1x Sparrow terrace to be affixed to the rear (eastern) gable end.
- ✦ **Recommendation 4 (Broadscale Enhancement):** Greater ecological benefit could be delivered by planting up any gardens with wildlife friendly plants and retaining any mature trees.

4.2.4 An outline Method Statement has been included (see 5.1) to enable the LPA to have ‘*regard to the requirements of the Habitats Directive... in the exercise of their functions in considering the planning application*’. A full Method Statement will be prepared as part of an EPS licence application to be submitted to Natural Resources Wales.

4.2.5 All wild birds and their nests (when in use), eggs and dependent young are afforded protection under the Wildlife and Countryside Act 1981 (as amended), nesting season is generally from 1st March until 31st July and works cannot be conducted whilst birds are nesting. No evidence of nesting birds or signs of Owl were found but any nests found must be confirmed vacant before work commences.

4.2.6 This ecological **report will remain valid** for a period of 24 months from the date of the last survey i.e. **until 11/09/2027** (CIEEM, 2019). A further scoping survey may be required to update the site information if planning is not obtained or works do not commence within that period, especially if the property to be developed has fallen into further disrepair.

## 5. Outline method statement for planning and mitigation/compensation measures

### 5.1 Outline method statement for planning and mitigation/compensation measures

5.1.1 As there are bats present at the property, an outline method statement for both the LPA and the licence application is required; this will inform the ecologist undertaking the licensing work. If bats are discovered during any stage, then work must stop and NRW called for advice/ guidance.

5.1.2 This Outline Mitigation Strategy will form the basis of the EPS Method Statement to be submitted to Natural Resources Wales following the receipt of planning permission. It aims to address the timing and methods of activities; provision of new bat roosts and site enhancement; impact on, and maintenance of, existing roosts; lighting and habitat provisions; and monitoring.

#### Timing and methods of activity

5.1.3 All contractors will receive a toolbox talk prior to the commencement of works to outline the status of the building, conditions of the licence and Method Statement. High risk works will be directly supervised by a licensed bat ecologist.

5.1.4 All roof/roofware works will be undertaken carefully by hand and in the presence of a licensed bat ecologist. Whilst no bats were seen to leave/enter any gaps, it is always possible that they may be using identified PRFs.

5.1.5 It is not anticipated that any bats will need to be excluded or captured during the works. However, measures will be included in the Method Statement to be produced for the EPS licence and mitigation and enhancement will be in place prior to any works commencing. See table 1 on the following page for a provisional timetable of works.

#### Maintaining bat roost provision

5.1.6 As per **recommendation 1 (Site Bat Enhancement)**, prior to works commencing, x 1 Beaumaris Woodstone bat box (or similar) to be affixed to the south-western gable end. In addition, as per **Recommendation 2 (Bat Mitigation)**: access will be retained on the front western gable end to allow for wall top roosting.

Table 1: Provisional timetable of works

| Stage | Dates                                                          | Works                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0     | From receipt of planning permission to receipt of EPS licence. | <ul style="list-style-type: none"> <li>NO works to the roof of the property. This includes works to the site subject to development which may impact on this area.</li> <li><b>Recommendation 1 (Site Bat Enhancement): Prior to works commencing,</b> x 1 Beaumaris Woodstone (or similar) bat box to be affixed to the south-western gable end</li> </ul> <p><b><i>The above are all to be inspected by the named ecologist on the EPS (Bats) Licence prior to any licensable works commencing.</i></b></p>                                                                                                                                                                                                                    |
| 1     | From receipt of EPS licence                                    | <ul style="list-style-type: none"> <li>Toolbox talks.</li> <li>If works are to commence within the active bat season a survey will be undertaken immediately prior to works commencing.</li> </ul> <p><b><i>Licensable works to be completed:</i></b></p> <ul style="list-style-type: none"> <li>Ecologist to be on site to check when all works that will impact upon the roost is taking place i.e., works to the roof and roofware.</li> </ul> <p><b><i>Bat mitigation and enhancement measures to be completed under licence:</i></b></p> <ul style="list-style-type: none"> <li><b>Recommendation 2 (Bat Mitigation):</b> access will be retained on the front western gable end to allow for wall top roosting.</li> </ul> |

|   |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   |                         | <p><b>Other enhancement measures to be completed:</b></p> <ul style="list-style-type: none"> <li><b>Recommendation 3 (Broadscale Site Enhancement):</b> As far as possible, all mature hedgerows and trees on site are to be retained (and any lost are to be replaced with native species) to enhance wider ecological benefit and connectivity to the surrounding habitat. In addition, all new planting is to be of native species that offer benefit to wildlife. See <a href="#">17 bats &amp; hedges leaflet.pdf (hedgelink.org.uk)</a>. Advice within <a href="#">developers-1.pdf (britishhedgehogs.org.uk)</a> is to be followed, ensuring measures are provided (<a href="#">Help a Hedgehog – The Wildlife Trust of South and West Wales (welshwildlife.org)</a>)</li> </ul> |
| 2 | Completion of all works | <ul style="list-style-type: none"> <li>In addition to inspecting the bat box prior to works commencing, once works are complete, an inspection to confirm bat measures have been provided correctly will be undertaken.</li> <li>Reporting to NRW/Welsh Government within 4 weeks of completion of works by the named ecologist.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                             |

5.1.7 Any new timbers/timber products must be checked to ensure that chemicals toxic to bats are not used (TIN 092) and the only lining membrane for areas that bats may encounter is 1F traditional bitumen membrane. Research has demonstrated that **none** of the modern breathable membranes currently on the market are safe to use where bat roost mitigation is provided.

#### Lighting and Habitat provisions

5.1.8 Current **lighting** plans for the site are not known but should any be proposed, they must ensure that exterior lighting is kept to a minimum to prevent any adverse impacts on bats. In particular, there is to be no exterior lighting on or near the bat mitigation and any external lighting around the recommended enhancement measures must be carefully designed to avoid any impact upon bats (Institution of Lighting Professionals, Guidance Note GN08/23). Any external lighting scheme proposed for this application must comply with the lighting principles outlined within the guidance referenced above. See appendix 2 for additional information.

5.1.9 Where **external lighting** is necessary, this should utilise a number of key design points to limit any impact, as follows: Low level lighting pointed towards the ground; LED bulbs to be used of 2700 Kelvin (*p.18 of the lighting guidelines referenced above*) and below (warm white light and not daylight); use of light shields and hoods to direct the light downwards and prevent vertical and horizontal light spill; and use of passive infrared (PIR) motion sensors on timers to ensure lights only come on when necessary, especially important for the more light sensitive bat species such as horseshoe bats.

5.1.10 Habitat. There are no known plans to significantly alter the more favourable habitat on the eastern side of the property. Suitable designs and measurements may be found within the publication '*Biodiversity for low and zero carbon buildings – a technical guide for new build*' (Williams, 2010). In relation to **Recommendation 3 (Broadscale Site Enhancement)**, measures to provide net benefits are to be implemented. These include measures for retention of mature trees of ecological value as well as the planting of native hedgerow species, wild space, woodland trees and shrubs, wetlands, meadow turf, green roofs, hedgehog measures, insect hotels, wood piles, and other measures., meadow turf, green roofs, hedgehog measures, insect hotels, wood piles, and other measures. See [17 bats & hedges leaflet.pdf \(hedgelink.org.uk\)](#). Advice within [developers-1.pdf \(britishhedgehogs.org.uk\)](#) is to be followed as well as [Help a Hedgehog – The Wildlife Trust of South and West Wales \(welshwildlife.org\)](#).

5.1.11 Monitoring. In addition to inspecting the bat boxes in trees prior to works commencing, once works are complete, an inspection will be undertaken to confirm bat measures have been implemented.

5.1.12 Maintenance. The installation of bat mitigation and enhancement measures are to be completed prior to/during the development, and the patency and viability of the roosts will be examined and reported on as required. These will all be checked by the licensed ecologist as part of the agreed monitoring scheme within the EPS (Bats) Method Statement to be prepared as part of the licence application. Post development and monitoring, the bat measures will be retained and maintained by the owner, along with the surrounding vegetation. If ownership changes then the requirement to maintain any mitigation/enhancement measures is to be included in the relevant legal documents. The bat boxes are self-maintaining and do not require any management but are to be replaced if damaged, after discussion with a licensed bat ecologist/NRW.

## Appendix 1: An introduction to bat surveys

### A note on bat surveys

- ✧ All bats and their roosts, irrespective of the number of bats, species, and whether bats are present or not, are fully protected by the Conservation of Habitats and Species Regulations 2017 and the Wildlife and Countryside Act 1981 (as amended). Bats are the only mammal capable of true flight. They are notoriously difficult to survey for as they cannot be heard unaided and are difficult to see due to their nocturnal behaviour. They are also small and can live in the smallest of crevices, so may often be overlooked because of their size.
- ✧ Wales has relatively high numbers of most of the species that occur in Britain; the rural landscape with its abundance of wooded areas, river valleys and hedgerows means that buildings are commonly used as roosting sites by bats. This is particularly the case for older buildings (typically with stone walls and slate roofs) that are located close to good feeding areas, on the edge of settlements, or that are rarely disturbed.
- ✧ Bats may also change their resting and feeding places regularly throughout the year, depending on the time of year and weather conditions. Thus, other signs of use are also looked for such as their droppings or signs of feeding.
- ✧ To gain an understanding as to how bats are using a building, a survey may also involve dusk and/or dawn observations which may need to be repeated at different times throughout the year. These surveys are aided by both Night vision Camcorders (Sony) and Pulsar Helion XP 50 and Flir Infra Cam thermal devices. The NV cameras are often aimed at potential PRFs with suitable Infra-red illuminators and left in situ for the survey or manned – depending on staff levels. The footage is then watched for bat activity upon our return to office to ascertain bat use if any. The thermal cameras are mainly used by staff to make bat detection more likely (if they 're present) as they're highly sensitive and can even detect animals in the fog and high above in the sky. Images will be included in the report where they add any detail.
- ✧ The search buffers implemented as part of the survey are considered to more than adequately cover the predicted zone of influence of the proposed development. The reasons for the site designations have also been considered when discussing potential impacts on the biodiversity of these sites. If the sites are designated for their bat or bird interest, this will be mentioned.
- ✧ Survey methodologies are implemented as appropriate, based on the surveyors' assessment of the site features and with particular reference to the advice in Bat Surveys for Professional Ecologists: Good practice guidelines, 4<sup>th</sup> edition (Collins, J. (Ed.), 2023) & The Bat Workers' Manual, 3rd edition. (Mitchell-Jones, A.J., & McLeish, A.P. (Ed.), 2004). Reports are written with reference to the CIEEM (2017) Guidelines as well as BS42020.
- ✧ A PRA visit (scoping survey) is used to identify all potential access and egress points for bats in the building, and to identify crevices and possible dwelling places. Internal and external inspections are aided using powerful binoculars and close-focussing monoculars, as well as ladders, high powered Cree flashlights and head-torches. We also have thermal imaging cameras and night vision devices at our disposal as well as full spectrum photographic cameras which can photograph a bat in complete darkness with an infrared flash. Exploitable crevices are also endoscoped with either a hand-held digital scope or a smart phone compatible scope. Digital thermometers and hygrometers are also at our disposal.
- ✧ The survey consists of a visual inspection of the interior and exterior of the building for evidence of bat use, including droppings, smells, feeding remains, staining, and scratching around roost exit and entry points. Potential features conducive (but not necessarily predictive) to bat presence include voids in the stonework, wooden beams, any associated rot holes, gaps behind soffits or within walls and fascia boards, raised tiles, any raised render, and any sufficiently large

crevices. The general condition of the building is examined, including the structure of the roof, condition of walls, the potential for disturbance, and the position of the building in relation to connectivity to good bat habitat.

✦ If positive bat signs are discovered, or the construction style suggests cryptic bats *may* be present, a passive bat recorder is deployed within the space of the building surveyed. These commonly record all bats from within and to the exterior of a building as they have extremely sensitive microphones so clusters of calls or high frequency of calls over short periods that are repeated (not just a vocal (Chatty) bat passing the microphone once on a foraging /socialising expedition) may indicate a presence within the building. Supporting evidence is then needed to make a decision, such as bats seen during surveys, droppings and feeding signs as well as building suitability for a given species. For example, we have had clear sonograms for Serotine bats (*Eptesicus serotinus*) from a loft space deployed recorder where no gaps existed anywhere and no droppings from serotines were present. These large bats must have been present elsewhere on site or use the site for foraging.

✦ The outcomes have been used to specify whether further surveys are required, or to establish the need for, and extent of, any mitigation or compensation measures required as part of the proposed works.

✦ If positive signs of bat activity are found then it will be necessary to assess whether a licence is needed at all (damage and disturbance to the roost and harm to bats can be avoided through thoughtful and planned working practices), or whether a licence is recommended as damage, disturbance or harm are unlikely to be avoided.

## Appendix 2: Overview of the legislation

- ✧ All bats and their roosts, irrespective of the number of bats, species, and whether bats are present or not, are fully protected by the Conservation of Habitats and Species Regulations 2017 and the Wildlife and Countryside Act 1981 (as amended).
- ✧ There is a risk that works could result in the damage or destruction of a bat roost or roosts, the disturbance of bats, and the potential killing or injury of bats, sufficient survey effort (where indicated) helps to minimise this risk.
- ✧ All wild birds, their nests, eggs, and dependent young are afforded protection under the Wildlife and Countryside Act 1981 (as amended), with the bird nesting season generally from 1st March until 31st August.
- ✧ Technical Advice Note (TAN) 5 (Welsh Government, 2009) specifically provides advice about how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation. The TAN provides advice for local planning authorities on the key principles of positive planning for nature conservation; nature conservation and Local Development Plans; nature conservation in development management procedures; development affecting protected internationally and nationally designated sites and habitats; and development affecting protected and priority habitats and species. Under Section 2.4 within the TAN 5, 'when deciding planning applications that may affect nature conservation local planning authorities should':
  - Pay particular attention to the principles of sustainable development, including respect for environmental limits, applying the precautionary principle, using scientific knowledge to aid decision making and taking account of the full range of costs and benefits in a long-term perspective;
  - Contribute to the protection and improvement of the environment, so as to improve the quality of life and protect local and global ecosystems, seeking to avoid irreversible harmful effects on the natural environment;
  - Promote the conservation and enhancement of statutorily designated areas and undeveloped coast;
  - Ensure that appropriate weight is attached to designated sites of international, national and local importance;
  - Protect wildlife and natural features in the wider environment, with appropriate weight attached to priority habitats and species in Biodiversity Action Plans;
  - Ensure that all material considerations are taken into account, and decisions are informed by adequate information about the potential effects of development on nature conservation;
  - Ensure that the range and population of protected species is sustained; and
  - Adopt a step-wise approach to avoid harm to nature conservation, minimise unavoidable harm by mitigation measures, offset residual harm by compensation measures and look for new opportunities to enhance nature conservation; where there may be significant harmful effects local planning authorities will need to be satisfied that any reasonable alternative sites that would result in less or no harm have been fully considered.
- ✧ Bats are listed under Schedule 5 and 6 of the Wildlife and Countryside Act 1981 and protected under sections 9 and 11 (as amended by the Countryside and Rights of Way (CROW) Act 2000).
- ✧ The Environmental Damage (Prevention & Remediation) Regulations 2009 – A protected species and its habitat are protected under this legislation as well as others.

- ✧ The Conservation of Habitats and Species Regulations 2017 – (regulation 43) fully protects all bats and their roosts, making it **an offence to deliberately kill, injure or capture** (take) bats; *to deliberately disturb bats; damage or destroy bat roosts* or resting places (this is considered an ‘Absolute Offence’ as damage and destruction may detrimentally effect the Continuous Ecological Functionality of that roost/resting place); possess or transport a bat or any part of a bat; sell (or offer for sale) or exchange bats or parts of bats.
- ✧ Bats are also protected by: Appendix III of the Bern Convention; Appendix II of the Bonn Convention (including the Convention's Agreement on the conservation of Bats in Europe); Natural Environment and Rural Communities Act 2006 (in England); and The Environment (Wales) Act 2016: specifically, Sections 6 (*places a duty upon Local Authorities to enhance biodiversity and the **resilience of ecosystems***) and 7 (*Creating local biodiversity lists and a duty to take steps to **maintain and enhance biodiversity***).
- ✧ For any offence to occur a derogation or **European Protected Species (EPS) licence** must be gained from Natural Resources Wales. To gain an EPS Licence, they must be satisfied that;
  - i. granting the licence would not be detrimental to the Favourable Conservation Status (FCS) of the populations of species concerned within its natural range;
  - ii. the derogation (licence) is in the public interest of Health and Safety or for other reasons of over-riding public interest, including those of a socio-economic nature or will have a benefit of primary importance to the environment; and
  - iii. there is no satisfactory alternative to the derogation which would allow the described development to proceed but which would avoid or reduce, the need for any adverse impact to the species.
- ✧ All bats are listed in Annex IV of The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and are therefore designated as *European Protected Species*. These *protected* species are afforded enhanced protection and more stringent licensing provisions than those protected by the Wildlife and Countryside Act (WACA) alone. There are also biodiversity obligations to be met within the Well-being of Future Generations (Wales) Act 2015 [WFG] and the seven well-being goals which include an emphasis on socio-economic resilience as well as protecting culture, heritage and the Welsh language. One Act does not take precedence over the other.
- ✧ Planning Policy Wales (12<sup>th</sup> Ed.) also emphasises the importance of ensuring – wherever possible – a net gain to biodiversity from any development. Future Wales (The National Plan 2040) highlights in the 10<sup>th</sup> of 11 outcomes that the aim is for a “Wales where people live...in places with biodiverse, resilient and connected ecosystems”. Highlighting the importance for creating and enhancing resilient and diverse eco-systems.
- ✧ Future Wales – the National Plan 2040 states the following:
  - Outcome 10 focuses on places with biodiverse, resilient and connected ecosystems. As such, the variety of flora and fauna found across Wales make Wales a special place. Biodiversity underpins the functioning of healthy, resilient ecosystems and the multiple benefits they provide. While biodiversity has declined in recent decades, we will reverse these losses and enhance the resilience of ecosystems. The planning system will ensure wildlife is able to thrive in healthy, diverse habitats, both in urban and rural areas, recognising and valuing the multiple benefits to people and nature.
  - Policy 9 concerns Resilient Ecological Networks and Green Infrastructure. To ensure the enhancement of biodiversity, the resilience of ecosystems and the provision of green infrastructure, the Welsh Government will work with key partners to:
    - identify areas which should be safeguarded and created as ecological networks for their importance for adaptation to climate change, for habitat protection, restoration or creation, to protect species, or which

provide key ecosystems services, to ensure they are not unduly compromised by future development; and • identify opportunities where existing and potential green infrastructure could be maximised as part of placemaking, requiring the use of nature-based solutions as a key mechanism for securing sustainable growth, ecological connectivity, social equality and well-being. Planning authorities should include these areas and/or opportunities in their development plan strategies and policies in order to promote and safeguard the functions and opportunities they provide. In all cases, action towards securing the maintenance and enhancement of biodiversity (to provide a net benefit), the resilience of ecosystems and green infrastructure assets must be demonstrated as part of development proposals through innovative, nature-based approaches to site planning and the design of the built environment.

- ✦ Institution of Lighting Professionals, Guidance Note GN08/23 (pages 29 and 30), **Appropriate luminaire specifications:** 4.29 Light sources, lamps, LEDs and their fittings come in a myriad of different specifications which a lighting professional can help to select. However, the following should be considered when choosing luminaires and their potential impact on Key Habitats and features: All luminaires should lack UV elements when manufactured. Metal halide, compact fluorescent sources should not be used; LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability; A warm white light source (2700Kelvin or lower) should be adopted to reduce blue light component Guidance Note 08/23: Bats and Artificial Lighting At Night 30 Institution of Lighting Professionals; Light sources should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012); Internal luminaires can be recessed (as opposed to using a pendant fitting) where installed in proximity to windows to reduce glare and light spill; Waymarking inground markers (low output with cowls or similar to minimise upward light spill) to delineate path edges (see Case Study 1); Column heights should be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards; Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered - See ILP GN01; Luminaires should always be mounted horizontally, with no light output above 90° and/or no upward tilt; Where appropriate, external security lighting should be set on motion sensors and set to as short a possible a timer as the risk assessment will allow. For most general residential purposes, a 1- or 2-minute timer is likely to be appropriate; Use of a Central Management System (CMS) with additional web-enabled devices to light on demand; Use of motion sensors for local authority street lighting may not be feasible unless the authority has the potential for smart metering through a CMS; The use of bollard or low-level downward-directional luminaires is strongly discouraged. This is due to a considerable range of issues, such as unacceptable glare, poor illumination efficiency, unacceptable upward light output, increased upward light scatter from surfaces and poor facial recognition which makes them unsuitable for most sites. Therefore, they should only be considered in specific cases where the lighting professional and project manager are able to resolve these issues. See Case Study 6; and Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely.

## Appendix 3: Types of bat roost and survey timings

The table below shows the recommended survey timings and is reproduced from the Good Practice Guidelines (tables 7.1 and 7.2) (4<sup>th</sup> Edition, 2023). This is for presence/absence surveys to give confidence in a negative result for structures (also recommended for trees but unlikely to give confidence in a negative result).

| Table 7.1. Recommended timings for presence/absence surveys to give confidence in a negative result for structures (also recommended for trees where other methods such as PRF inspection are not possible, but unlikely to give confidence in a negative result). To be used in tandem with Table 7.2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |                                                                                                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Low roost suitability or PRF-I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Moderate roost suitability                                                                       | High roost suitability or PRF-M                                                                  |
| May to August (structures)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | May to September <sup>a</sup> , with at least one of surveys between May and August <sup>b</sup> | May to September <sup>a</sup> , with at least two of surveys between May and August <sup>b</sup> |
| No further surveys required (trees)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                  |                                                                                                  |
| <p><b>a</b> September surveys are both weather- and location-dependent. Conditions may become more unsuitable in these months, particularly in more northerly latitudes, which may reduce the length of the survey season. September surveys are likely to miss maternity roosts due to dispersal before this time, but may pick up mating roosts.</p> <p><b>b</b> Multiple survey visits should be spread out to sample as much of the recommended survey period as possible; it is recommended that surveys are spaced at <b>least three weeks apart</b>, preferably more. Survey timings <b>should consider the prevailing conditions in the year of survey, which will vary geographically</b>. In years with a cold spring, the surveys should not be started in early May or all completed in May. The surveys should maximise the possibility of detecting maternity roosts, which can switch roosts between pregnancy and lactation, and the <b>optimum coverage includes the pre-parturition, post-parturition and mating periods</b>.</p> |                                                                                                  |                                                                                                  |

| Table 7.2. Recommended minimum number of survey visits for presence/absence surveys to give confidence in a negative result for structures (also recommended for trees but unlikely to give confidence in a negative result).                                                                                                                                                                                                                                                                                                                   |                                                          |                                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------------|
| Low roost suitability or PRF-I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Moderate roost suitability                               | High roost suitability or PRF-M                            |
| One survey visit. One dusk emergence survey <sup>a</sup> (structures).                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Two separate dusk emergence survey visits <sup>b</sup> . | Three separate dusk emergence survey visits <sup>b</sup> . |
| No further surveys required (trees).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                          |                                                            |
| <p><b>a</b> Structures that have been categorised as low potential can be problematic and the number of surveys required should be judged on a case-by-case basis (see para 5.2.44). In some cases, more than one survey may be needed, particularly where there are several buildings in this category.</p> <p><b>b</b> Multiple survey visits should be spread out to sample as much of the recommended survey period (see Table 7.1) as possible; it is recommended that surveys are spaced at least three weeks apart, preferably more.</p> |                                                          |                                                            |

<sup>a</sup> September surveys are both weather and location dependent. Conditions may become more unsuitable in these months, particularly in more northerly latitudes, which may reduce the length of the survey season. *September surveys may miss maternity roosts due to dispersal (but amount of guano, smell and other signs will suggest whether it's a likely maternity roost or not, a september survey may pick up a mating roost.*

### **Roosts required by bats**

**Hibernation sites (hibernacula).** Sheltered areas with relatively stable winter temperatures.

Underground cavities, caves, mines, cellars, hollow trees and cavities and crevices in buildings or similar structures are examples.

**Nursery roosts (maternity roosts).** Places usually warm, where adult females of a colony gather to give birth and rear their young. These are often traditional sites with a history of such use and include roof voids, walls, soffit boxes, hollows and cracks/splits in trees and cavities in bridges and similar structures.

**Night roosts/feeding perches.** Places where bats may gather at night away from the day roost after initial feeding. These places are often quite exposed and may not be suitable for day roosting. They are often recognisable by deposits of droppings and insect remains.

**Intermediate/dispersal roosts.** Sites where small numbers of bats may gather after hibernation before taking up residence in the nursery roost. Bats may return to these sites after dispersal from the nursery roost and before entering hibernation.

**Mating/male roosts.** Places that an individual male may defend from other males and to which he will attempt to lure females. These will include small holes/cavities in trees, stonework, caves, mines, and buildings.

### **Access, size of roost space and structure**

- *Crevise-dwelling bats* (such as Soprano pipistrelles) can crawl into roosts via small gaps in the range of 15–20mm high by 20–50mm wide. The roost area should maintain a crevice of this approximate size gap that the bats can roost between. The area this roost provision covers can be small but about 1m<sup>2</sup> would be useful for summer nursery roosts. The height of entry can be from 2–7m.
- *Roof-void dwelling bats* require similar dimensions to access the roost but typically need timber joists or beams on which to roost. The height of entry can be from 2–7m.
- *Bats needing a flying area* require the same access dimension as mentioned above, 15–20mm (h) x 20–50mm (w) situated over 2m in height. The roosting area should not be trussed, to allow flight, and should ideally (wherever possible) be of similar dimensions to the roost being replaced.
- *Horseshoe bats* need a larger access so that they can fly (instead of crawl) directly into the roost. Lesser horseshoe bats need an access of 300mm (w) x 200mm (h), while greater horseshoe bats need 400mm (w) x 300mm (h). As above, the roosting area should not be trussed, to allow flight, and should again (where possible) be of similar dimensions to the roost being replaced.

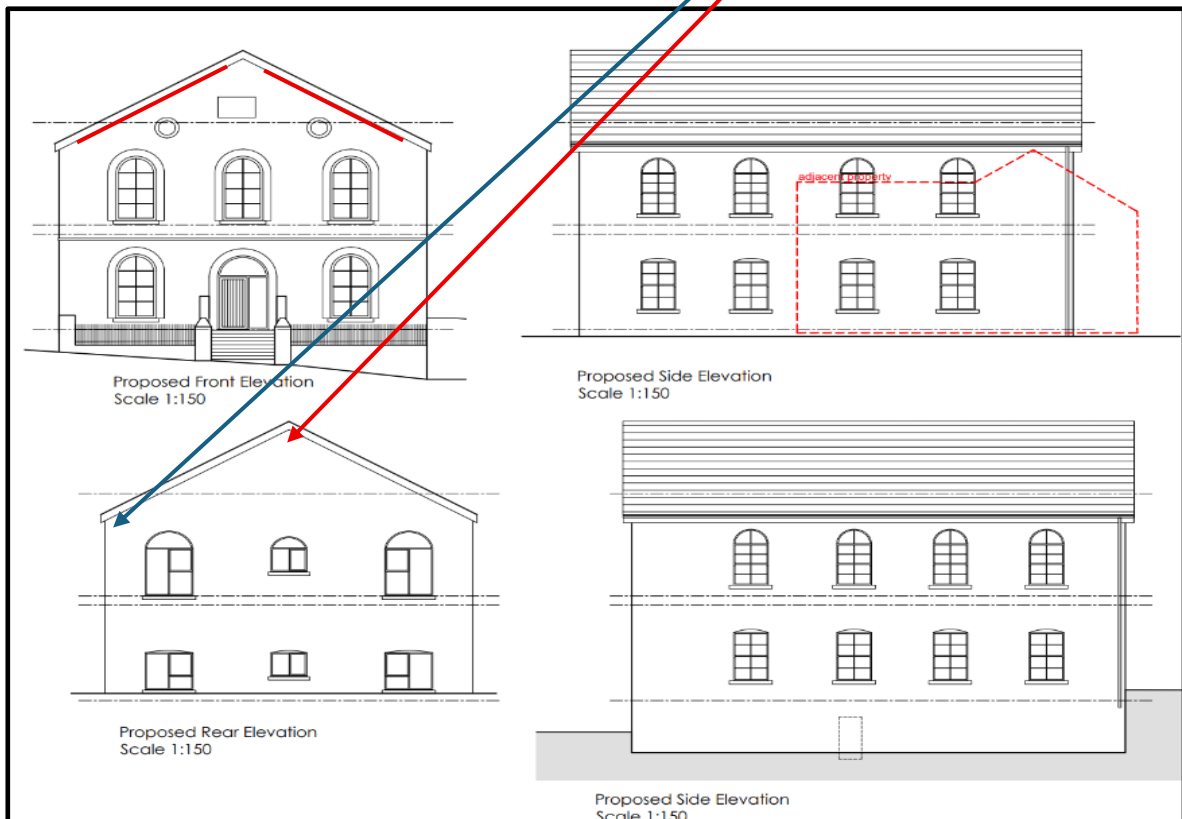
## Appendix 4: List of surveyors

| Surveyor              | Licence   | Experience/background                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mr Glyn Lloyd-Jones   | Bats      | <i>I&amp;G have held bat licences and been operating for more than a decade</i> and in that time, Glyn has gained significant experience in many survey skills and has assisted/worked with many other licensed bat surveyors as well as local bat groups. He possesses both a Bachelor's (with honours) and Master's degree in the biological sciences and is a Chartered Biologist & member of the Royal Society of Biology. He has worked for EAW, NRW and CCW for over a decade and has gained significant experience of working for regulators and conservation bodies. He also holds a Class 2 bat licence in England and has undertaken many badger, tree and herpetofaunal surveys. Natural Resources Wales Licence number S094480/1. I&G were proud to be shortlisted for a BCT roost award in 2021 and contributed to both the 2023 survey and mitigation guidelines and also sponsor the former. |
| Mr Iestyn Evans       | Bats      | Iestyn has extensive experience in conservation, habitat improvement and management and has also worked with and assisted other licensed bat workers for many years. He has also helped with local bat group surveys and assisted in data gathering for the Beacon for Bats project undertaken by the Vincent Wildlife Trust. Iestyn has also assisted the Glamorgan Bat Group and will also help supervise and mentor (if needed) members of the newly incarnated Carmarthenshire Bat Group. Natural Resources Wales Licence number S095328/1.                                                                                                                                                                                                                                                                                                                                                             |
| Miss Ceri Daugherty   | Bats      | Ceri worked at Team Leader level within the SNCO for Wales for many years, dealing with customers and negotiating with landowners. She also has practical conservation management experience as both a Countryside Ranger and a conservation volunteer. She possesses a Master's degree in Environmental Impact Assessment and a Bachelor's degree (with honours) in the natural sciences. She is a member of the Carmarthenshire Bat Group. Natural Resources Wales Licence number S095321/1.                                                                                                                                                                                                                                                                                                                                                                                                              |
| Ms Cathy Browne       | Ecologist | Cathy has a keen interest in wildlife conservation and in undertaking bat and avian surveys in particular, to this end she achieved a first-class honours degree in wildlife and practical conservation with professional studies. She has a passion for ornithology and is working to further improve her skills in this area and others in the ecology sector.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Mr Greg Evans         | Trainee   | Greg attends dusk and dawn surveys to provide extra monitoring for possible entry and exit points for bats. He is currently building his experience in this area and is a keen amateur natural historian with an enthusiasm and affinity for bats.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Miss Ellie Davies     | Ecologist | Ellie has always been passionate about wildlife and nature, to this end she achieved her Bachelor's degree in Zoology. She has a keen interest in undertaking bat surveys and is currently building on her experience to further improve her skill set and hopes to gain a personal bat licence.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Mr Mike Jones         | Assistant | Whenever we need extra assistance in observing and recording bat activity on buildings, Mike provides an excellent and reliable service.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Ms Sharon Doherty     | Assistant | Whenever we need extra assistance in observing and recording bat activity on buildings, Sharon provides an excellent and reliable service.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Ms Bonnie Illingworth | Assistant | Bonnie has been a member of the Kent Bat Group for a number of years and has undergone formal training in leading Bat Walks by Shirley Thompson, who set up The Young Batworkers group/magazine etc. She has led several educational sessions for the Scouts and local community groups. She has undertaken many bat activity surveys and has enjoyed conservation work with BCT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Ms Greta Vaiciunaite  | Assistant | Greta has a keen eye for detail and a passion for the natural sciences. She regularly helps on surveys for bats, reptiles and amphibians and seeks to gain a rounded knowledge in ecology.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Tom Bellingham        | Ecologist | Tom has an aptitude for ecology and enjoys bat, bird, botanical and woodland surveys. He is presently training to gain tree survey accreditation as well as working from ropes and is qualified to work in confined spaces.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

## Appendix 5: Site plans



**Above:** Proposed elevation plans. **Biodiversity enhancement measures:** The location for the bat box on the rear (east) gable end of the dwelling is shown by a blue arrow and the location for the sparrow terrace on the rear (east) gable end is shown by a red arrow. Gaps will be created along the weatherboarding on the front elevations to provide access to the wall tops for roosting.



## Appendix 6: Site survey images



The detached west facing two storey chapel has a smaller single storey extension to the rear. The chapel is constructed of stone walls some of which are heavily vegetated. The soffits/fascia/barge boards are timber / uPVC and all windows are either bricked up or covered with poly-carb sheeting. It is subject to proposed plans for a conversion into 6 flats. The walls are in good condition but there are wall top gaps and missing stone blocks. In addition, the windows and doors are intact and remain closed when not in use, with no gaps around any of the frames. The main roof had some missing slates, and an area of raised dry verge to the rear of the chapel. The roof of the single storey extension has slipped and raised slates and gaps under the ridge tiles. The red arrow above indicates the emergence area.





**External thermal image taken at the darkest point of the survey (Collins 2023, Section 7.2.10).**

## Appendix 7: Roost status and mitigation

The figure below is Table 3.1 from the Bat Mitigation guidelines (Reason & Wray, 2023) and covers the categorisation of rarity.

**Table 3.1: Rarity category** (see para 3.4.5 and associated footnote).

| Rarity category                                            | South-west England & S Wales         | Southern England                     | South-eastern/ East Anglia to The Wash | North/mid-Wales                      | Central England/ Midlands            | Northern England                     | Southern Scotland            | Northern Scotland    | Northern Ireland             |
|------------------------------------------------------------|--------------------------------------|--------------------------------------|----------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|------------------------------|----------------------|------------------------------|
| Widespread                                                 | Ppip<br>Ppyg<br>Paur                 | Ppip<br>Ppyg<br>Paur                 | Ppip<br>Ppyg<br>Paur                   | Ppip<br>Ppyg<br>Paur                 | Ppip<br>Ppyg<br>Paur                 | Ppip<br>Ppyg<br>Paur                 | Ppip<br>Ppyg                 | Ppip<br>Ppyg         | Ppip<br>Ppyg<br>Paur         |
| Widespread in many geographies, but not as abundant in all | Mmys<br>Mbra<br>Mdau<br>Mnat<br>Nnyc | Mmys<br>Mbra<br>Mdau<br>Mnat<br>Nnyc | Mdau<br>Mnat<br>Nnyc                   | Mmys<br>Mbra<br>Mdau<br>Mnat<br>Nnyc | Mmys<br>Mbra<br>Mdau<br>Mnat<br>Nnyc | Mmys<br>Mbra<br>Mdau<br>Mnat<br>Nnyc | Mdau<br>Mnat<br>Paur         | Mdau<br>Mnat<br>Paur | Mdau<br>Mnat<br>Nlei<br>Paur |
| Rarer or restricted distribution                           | Rhip<br>Eser<br>Nlei<br>Pnat         | Malc<br>Eser<br>Nlei<br>Pnat         | Mmys<br>Mbra<br>Eser<br>Nlei<br>Pnat   | Rhip                                 | Eser<br>Nlei<br>Pnat                 | Malc<br>Nlei<br>Pnat                 | Mmys<br>Nnyc<br>Nlei<br>Pnat | Pnat                 | Mmys<br>Pnat                 |
| Rarest Annex II species and very rare                      | Rfer<br>Mbec<br>Bbar<br>Paus         | Rfer<br>Rhip<br>Mbec<br>Bbar<br>Paus | Malc<br>Bbar                           | Rfer<br>Bbar<br>Eser<br>Nlei<br>Pnat | Malc<br>Bbar                         |                                      | Mbra                         |                      |                              |

The figure below is Table 3.2 from the Bat Mitigation guidelines (Reason & Wray, 2023) and covers the assessment of roost importance.

**Table 3.2: Assessing importance of roosts<sup>a</sup>**

| Roost category: note this table relates to VALUATION and does not mean that all such sites are 'places of shelter' as referenced in the W8CA or Habitats Regulations. Inclusion in this table does not indicate that a licence <u>would</u> be required; this would be driven by roost status, any impacts and the likelihood of an offence. |                                                                                                        |                                                      |                                                                                                        |                            |                                                                                                                    |                                                                                                                                     |                                                                                                                    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Conservation status/ distribution                                                                                                                                                                                                                                                                                                            | Feeding perches; night-roosts; Individual or very small occasional/ transitional/ opportunistic roosts | Non-breeding day roosts (small numbers of species)   | Mating sites (excluding individual trees and larger swarming sites); small numbers of hibernating bats | Larger transitional roosts | Hibernation sites <sup>d</sup>                                                                                     | Autumn swarming sites [largely, vesper species which hibernate underground]                                                         | Maternity sites <sup>e</sup>                                                                                       |
| Widespread all geographies                                                                                                                                                                                                                                                                                                                   | Site                                                                                                   | Site                                                 | Site                                                                                                   | Site/Local                 | District/County [Larger hibernation sites rare in the UK]                                                          | District/County [Very large pipistrelle swarming sites as yet unknown in the UK91, but see Section 6.7]                             | Unlikely to exceed District importance unless colonies are atypically large; importance increased for assemblages. |
| Widespread in many geographies, but not as abundant in all                                                                                                                                                                                                                                                                                   | Site                                                                                                   | Site                                                 | Site, dependent on local distribution [For Myotis, see swarming site column]                           | District                   | District/County importance dependent on size <sup>b</sup> and number of species                                    | County/Regional importance dependent on size <sup>b</sup> ; importance increased for larger sites that serve larger numbers/species | Unlikely to exceed County importance unless colonies are atypically large; importance increased for assemblages.   |
| Rarer or restricted distribution                                                                                                                                                                                                                                                                                                             | Site (very well-used night roosts may be of District importance for some species)                      | Site/Local/District, dependent on local distribution | Site/Local/District, dependent on local distribution                                                   | District                   | District/County importance dependent on size <sup>b</sup> and local distribution; increased value for assemblages. | County/Regional importance on size <sup>b</sup> and local distribution; increased value for assemblages.                            | County/Regional importance on size <sup>b</sup> and local distribution; increased value for assemblages.           |
| Rarest Annex II species and very rare                                                                                                                                                                                                                                                                                                        | Site (very well-used night roosts may be of District importance for some species)                      | Site/Local/District, dependent on local distribution | Site/Local/District, dependent on local distribution                                                   | District                   | County/Regional importance on size <sup>b</sup> and local distribution; increased value for assemblages            | County/Regional importance on size <sup>b</sup> and local distribution; increased value for assemblages.                            | County/Regional importance on size <sup>b</sup> and local distribution; increased value for assemblages.           |

- Sites within or functionally linked to SACs are of International importance for Qualifying Species. Sites that could be functionally linked to SACs may or may not have that level of importance [Example: a small lesser horseshoe bat maternity roost from a multi-component 'bat' SAC may be too far away to be a direct satellite of a maternity roost within the SAC, but may be part of the same population through intermediate unidentified roosts. Sites meeting SSSI guidelines are of National importance (though note that many SSSI citations do not reflect the 'bat' importance of the sites they describe, and not all sites of National importance are designated).
- In all cases, 'size' needs to be interpreted as 'relative to typical sizes for the species'.
- Satellite roosts (i.e. alternative roosts found in close proximity to the main nursery colony) should be considered with the associated main colony.
- For tree-roosting bats that are likely to use multiple trees for breeding and then hibernate in small numbers (which means individual hibernation sites are difficult to detect and many may be missed), the **importance of the roost resource** (i.e. the collection of PRFs which are available to bats) rather than individual confirmed roosts, should be assessed.

The figure below is taken from Table 5.1 of the Bat Mitigation guidelines (Reason & Wray, 2023) and focuses upon the need for appropriate, but proportionate, mitigation.

**Table 5.1:** Proposed scale of compensation required

| Value of receptor | Roost category: note this table relates to a feature's original VALUATION and does not mean that all such sites are 'places of shelter' as referenced in the W&CA or Habitats Regulations. Inclusion in this table does not indicate that a licence <u>would</u> be required; this would be driven by any impacts and the likelihood of an offence. |                                                  |                                                                                                          |                                                              |                                                                                                                                                                                  |                                                                                                                                                                                  |                                                                                                                                                                                  |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   | Feeding perches; night-roosts<br>Individual or very small occasional/transitional /opportunistic roosts                                                                                                                                                                                                                                             | Non-breeding day roosts                          | Mating sites (excluding individual trees and larger swarming sites)<br>Small numbers of hibernating bats | Larger transitional roosts                                   | Hibernation sites                                                                                                                                                                | Autumn swarming sites (largely, vesper species which hibernate underground (Myotis, long-eared bats and barbastelle)                                                             | Maternity sites                                                                                                                                                                  |
| Site              | Flexible (in terms of timing and type)                                                                                                                                                                                                                                                                                                              | Flexible (in terms of timing and type)           | Flexible (type); do not leave bats without a roost                                                       | Flexible (in terms of timing and type)                       |                                                                                                                                                                                  |                                                                                                                                                                                  | Flexible (type); do not leave bats without a roost                                                                                                                               |
| Local             |                                                                                                                                                                                                                                                                                                                                                     |                                                  |                                                                                                          |                                                              |                                                                                                                                                                                  |                                                                                                                                                                                  |                                                                                                                                                                                  |
| District          |                                                                                                                                                                                                                                                                                                                                                     | Like-for like replacement; no timing constraints | Like-for like replacement; do not leave bats without a roost                                             | Like-for like replacement; do not leave bats without a roost | Like-for like replacement (as close as possible or better); do not leave bats without a roost                                                                                    | Like-for like replacement (as close as possible or better); do not leave bats without a roost                                                                                    | Like-for like replacement (as close as possible or better); do not leave bats without a roost                                                                                    |
| County            |                                                                                                                                                                                                                                                                                                                                                     |                                                  |                                                                                                          |                                                              | Like-for like replacement (as close as possible, or better); do not leave bats without a roost; erected (if possible) to be available in relevant season before original removed | Like-for like replacement (as close as possible, or better); do not leave bats without a roost; erected (if possible) to be available in relevant season before original removed | Like-for like replacement (as close as possible, or better); do not leave bats without a roost; erected (if possible) to be available in relevant season before original removed |
| Regional          |                                                                                                                                                                                                                                                                                                                                                     |                                                  |                                                                                                          |                                                              | Like-for like replacement (as close as possible, or better); do not leave bats without a roost; erected (if possible) to be available in relevant season before original removed | Like-for like replacement (as close as possible, or better); do not leave bats without a roost; erected (if possible) to be available in relevant season before original removed | Like-for like replacement (as close as possible, or better); do not leave bats without a roost; erected (if possible) to be available in relevant season before original removed |
| National          |                                                                                                                                                                                                                                                                                                                                                     |                                                  |                                                                                                          |                                                              | As agreed with SNCB                                                                                                                                                              | As agreed with SNCB                                                                                                                                                              | As agreed with SNCB                                                                                                                                                              |

In all cases, provision should be suitable for the species, and 'do not leave the bats without a roost' means 'in the season when that roost would be expected to be in use'. Ideally, such compensation would be in place **well in advance**, but it is recognised that this isn't always possible.

**Table 6.1:** Optimum season for works in different types of roosts

The period of works may be extended if the way in which the bats use the site is well understood.

| Roost type                                | Months to avoid                                                                                                            | Optimum period for carrying out works (some variation between species and weather-dependent)*                                             |
|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Maternity                                 | May-August (potentially September)                                                                                         | September to end April                                                                                                                    |
| Hibernation (not used for swarming)       | November to March                                                                                                          | April to end October [see also 6.2.14 et seq]                                                                                             |
| Hibernation and swarming site             | August to March (key); potentially July until April                                                                        | April to July (potentially later, depending on site and nature of works)                                                                  |
| Mating/swarming; not used for hibernation | August to October (key); potentially July until mid-November<br>Also April-early May in at least some species <sup>b</sup> | Mid-November – end March (potentially later, maybe species-specific)<br>Broader restrictions if site also used for hibernation: see above |
| Non-breeding summer roost                 | None                                                                                                                       | No restrictions – assuming bats can be excluded if present in small numbers or otherwise safely managed                                   |

**Table 9.2:** Indicative periods of monitoring

The point at which monitoring *begins* will be case-specific, driven by the construction programme, the type of mitigation, and the techniques used (see below).

|                                     |                    | Importance of resource affected |               |         |          |           |
|-------------------------------------|--------------------|---------------------------------|---------------|---------|----------|-----------|
|                                     |                    | Less than district              | District      | County  | Regional | National  |
| Scale of impact (before mitigation) | Less than district | Up to 1 year*                   | Up to 1 year* | 1 year* | 1 year   | 1-3 years |
|                                     | District           | n/a                             | 1 year*       | 3 years | 3 years  | 5 years   |
|                                     | County             | n/a                             | n/a           | 5 years | 5 years  | 10 years  |
|                                     | Regional           | n/a                             | n/a           | n/a     | 10 years | 10 years  |
|                                     | National           | n/a                             | n/a           | n/a     | n/a      | 10 years  |

\*Not in Year 1 (see below)

## Appendix 8: Roost compensation & enhancement measures

### Mitigation and enhancement recommendations:

- ✦ **Recommendation 1 (Site Bat Enhancement):** Prior to works commencing, x 1 Beaumaris Woodstone bat box (or similar) to be affixed to the south-western gable end.
- ✦ **Recommendation 2 (Bat Mitigation):** A dedicated bat loft is to be created within the loft with 2 x internal access points.
- ✦ **Recommendation 3 (Broadscale Enhancement):** Greater ecological benefit could be delivered by planting up any gardens with wildlife friendly plants and retaining any mature trees.

**Plans for the bat and bird box provision as well as the dedicated roost are to be submitted and must include all details of sizes, materials, access points etc.**



**Left:** The Vivaro Pro Build-in WoodStone bat box The Vivara Pro Build-in WoodStone Bat Box has been specifically designed to fit into the cavity of house walls. It features a slim sized entrance hole which can sit flush in a course of bricks to provide a discreet entry way for bats. It is manufactured from hard-wearing woodstone and plywood with removable side panels so that several boxes can be placed side by side. Position the box at least 2m above ground level away from artificial light sources. Woodstone is a mixture of sawdust from FSC wood sources and concrete, and it is designed to last for years. It is breathable so there will be no problems with condensation and maintains a consistent temperature inside, providing excellent insulation for roosting bats.

**Right:** The Beaumaris Bat Box is made from 100% WoodStone which is very durable so this product has a lifetime warranty. The attractive design is suitable for crevice roosting bats and has a rough interior to provide lots of grip. Bats need to increase their body temperature before flight so prefer warm roosting spots, which is why many of our bat boxes have a black exterior to absorb heat from the sun. WoodStone isn't just strong, it also has good thermal insulation, reducing temperature fluctuations inside the box and helping to make this an ideal roost site.



**Left:** The Harlech WoodStone bat box offers excellent insulation with a minimum of condensation for roosting bats. WoodStone® is a mixture of sawdust from FSC wood sources and concrete, and it is designed to last for years. It is breathable so there will be no problems with condensation and Woodstone maintains a consistent temperature inside, providing excellent insulation for roosting bats. Height 24cm x width 19cm x depth 18cm; Weight 4.4kg; Colour: Black with White front panel; Hook for hanging; Removable front panel for inspection/cleaning; and 10 Year Manufacturers Guarantee.

**Right:** The Improved Cavity Bat Box has the following features: FSC Certified, Suitable for the British cavity-dwelling bats including the Brown Long-Eared and natterer's, External panels precision cut from 12mm Exterior Grade FSC plywood, for improved heat insulation, Exterior surface stained black with water based wood stain for improved thermal input, whilst avoiding any possibility of deterring the bats due to vapour from the stain, Overhanging apex roof for protection from UK weather, Single large cavity inside, with varying temperature characteristics, Wide entrance with accurately sized opening. Ideal for cavity-dwelling bats and deters unwelcome birds etc., Internal ceramic heat sink ensures improved temperature stability, Improved "Bat Ladder" at base of box facilitates bats landing and climbing into box, Ladder continues inside box, while textured internal surfaces ensure bats find it easy to move around inside box and on the walls, Ladder acts as "convective heater" for box - when sun shines on ladder, warm air rises into the box, but does not come out when the outside cools, Easy and safe to erect box on walls or trees – relatively lightweight with 1 keyhole mounting hole and 2 extra screw holes for secure fixing, Floor slides out (after removing 1 screw) for cleaning or inspection where permitted, Improved draught-proofing enhances temperature stability inside box, Improved aesthetics - looks good to humans as well as bats. Suits any building or tree.



Lack of sunlight can cause bat box/house failure, and structures for summer roosting should be positioned where they are unshaded for most of the day. Summer maternity roosts (in the northern hemisphere) should have a southerly or westerly aspect.

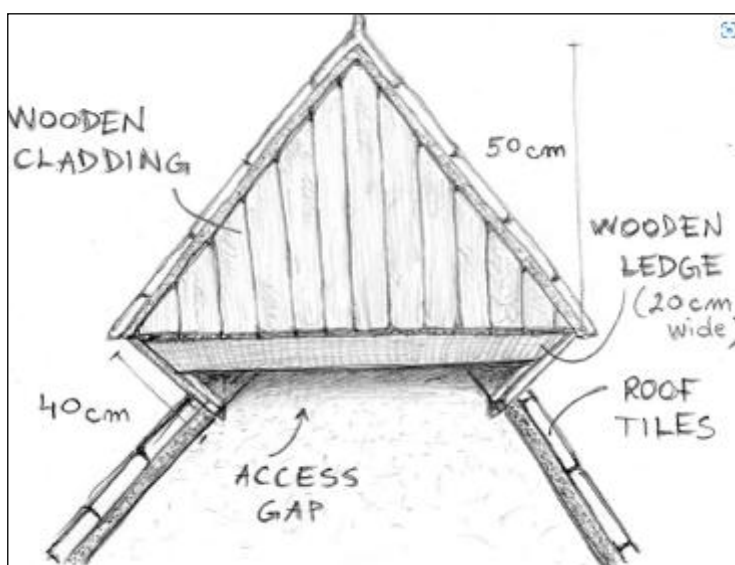


**Above:** Soffit gap examples.

Examples of Sparrow terraces (top), Swift nest boxes (middle), and Small-holed and Open-fronted nest boxes (bottom ). Siting advice can be found at [Where To Put A Bird Box | Nestboxes - The RSPB](#)



Examples of Swallow nest cups. Siting advice can be found at [Attracting Swallows to Nest Sites in Outbuildings - The RSPB](#)



## Appendix 9: I&G Ecological Consulting Ltd legal disclaimer

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All work undertaken in this report is the sole responsibility of I&G Ecological Consulting Ltd.

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