



**Tyn-y-Caeau, Margam Road, Margam, Port
Talbot, Neath Port Talbot, SA13 2NW**

Bat Survey Report for Recycling Plant & Machinery Ltd



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

Report type	Bat Survey Report
Report reference	IG2023TynyCaeau
Site	Tyn-y-Caeau, Margam Road, Margam, Port Talbot, Neath Port Talbot, SA13 2NW
Grid reference	SS 79267 86383
Client	Recycling Plant & Machinery Limited
Date(s)/time(s)/type(s) of survey(s)	Scoping survey: 21 st May 2023 1st Dusk emergence survey: 21 st May 2023 between 20:50 and 23:10 Dawn re-entry survey: 5 th June 2023 between 03:30 and 05:15 2nd Dusk emergence survey: 20 th June 2023 between 21:20 and 23:35 Remote recording between 21 st May and 6 th June 2023
Surveyor details	Scoping survey: Mr Glyn Lloyd-Jones, Natural Resources Wales Licence number S091520/1 and Mr Iestyn Evans, Natural Resources Wales Licence number S090746/1 Activity surveys: as above with assistance from Mr Pete Watts; Ms Bonnie Illingworth; Mr Greg Evans; and Mr Lewis Jones
Architect	Mr R. Banks, Evans Banks Planning

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Executive summary

- ✦ Tyn-y-Caeau (the property) is subject to proposed plans for change of use of to a guest house with the addition of a café and erection of rear single-storey extension. The original period **Dwelling** is a large north-west facing, predominantly two storey, detached building constructed of rendered and painted walls and has natural slate roofs. The detached, north-east facing, two storey (with subterranean rooms to the rear so this aspect is three storey) **Annexe** is constructed of smooth rendered walls with a slate roof while the detached **Outbuilding** is constructed of stone and has an unlined slate roof with a lot of vegetation coverage. There have been no material changes to the property itself since the previous surveys. The walls of the original house remain intact while the timber soffits/fascia/weatherboards are predominantly tight to the walls with only a small number of potentially exploitable gaps. The roof slates are predominantly in good condition with no missing or damaged slates, but there are areas where they have slipped; thus, creating potentially exploitable gaps, and there is also some loose lead flashing around one chimney pot to the left. The windows and doors remain generally intact with only one pane of glass in the original timber framed windows to the front still missing. The **Annexe** retains no observable exploitable gaps, but the stone **Outbuilding** has gaps at the walls top as well within the stonework.
- ✦ On 21st May 2023, I&G Ecological Consulting Ltd undertook a scoping survey. As a result of the findings dusk emergence surveys were undertaken on 21st May and 20th June 2023 and a dawn re-entry survey was undertaken on 5th June 2023. Weather conditions were conducive to bat activity and access was available to all parts.
- ✦ This report confirms the findings of these surveys, completed in accordance with current best practice (Collins, J. (Ed.) 2016) and conducted by experienced, licensed ecologists and assistants. It is to be read in conjunction with the 2022 Update Report which confirmed **Lesser horseshoe**, **Soprano pipistrelle** and **Common pipistrelle** roosts.
- ✦ The property is located to the south of Margam, 4.6km south-east of the town of Port Talbot. **It is within favourable bat habitat but is not within 10km of any site which is designated for its bat interest.**
- ✦ As part of the scoping survey of the **Annexe** and **Outbuilding**, no bats or their signs were found, and collectively they are considered to have **low to moderate** potential to support roosting bats, and a **low to moderate** risk of bats using the features present. During the activity surveys no bats were seen to leave or enter any part of either building, **no bats are using these buildings**, they receive no ecological protection under wildlife legislation, and there are no ecological constraints to the proposed works.
- ✦ As part of the 2023 scoping survey of the **Dwelling**, no bats or their signs were found, but droppings and feeding signs (peacock butterfly wings) were previously found within the hall fireplace area, which 2020 DNA analysis confirmed were from **Lesser horseshoe**. The Anabat recorded only **Lesser horseshoe** calls while during the dusk surveys **one Lesser horseshoe left the Dwelling via a missing glass pane**. In addition, **two Soprano pipistrelle** bats were seen to leave/enter via a loose slate close to a chimney pot to the left of the front elevation.
- ✦ In relation to **Roost Characterisation Assessment**, from the evidence gathered it is considered that the **Dwelling** is being/has been used as an occasional **feeding perch/night/day roost** by an **individual Lesser horseshoe**, and is being used as a summer **daytime roost** by a **small number of Soprano pipistrelle (five previously confirmed) and Common pipistrelle (two previously confirmed)**.
- ✦ **Mitigation measures will need to be implemented for bats and birds.** In addition, 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 11, February 2021). Recommendations are as follows. See appendix 5 for plans and appendix 9 for examples and siting advice. **The final plans are to show all bat and bird mitigation/enhancement measures, including dimensions and locations (and type of) access points (including human access for inspection). The location of any trees for bat/bird boxes are also to be shown on a site plan.**
 - ✦ **Recommendation 1 (Site Bat Enhancement):** Prior to works commencing, x 2 Harlech Woodstone (or similar), x and x 2 Improved Cavity (or similar) bat boxes to be affixed to mature trees at the property.
 - ✦ **Recommendation 2 (Dwelling Bat Mitigation):** Prior to works commencing, a dedicated bat house will be constructed close to the northern boundary with fly in access suitable for **Lesser horseshoe**. Soffit gaps are to be created for **Pipistrellus** species.
 - ✦ **Recommendation 3 (Annexe Bat Enhancement):** x 1 Beaumaris Woodstone (or similar) bat box to be affixed to the south-east elevation of the **Annexe**.
 - ✦ **Recommendation 4 (Broadscale Site Enhancement):** As far as possible, all mature hedgerows and trees on site are to be retained (and any lost to be replaced with native species) to enhance wider ecological benefit and connectivity to the surroundings. In addition, all new planting is to be of native species. The proposed site plan includes additional planting as well as an attenuation pond.
 - ✦ **Recommendation 5 (Annexe Bird Enhancement):** x 2 Sparrow terraces and x 1 House martin nest cup to be affixed to the north-west elevation of the **Annexe**.
 - ✦ **Recommendation 6 (Site Bird Enhancement):** Prior to works commencing, x 3 open-fronted and x 3 small-holed bird boxes to be affixed to mature trees within the curtilage of the property.

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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. Tyn-y-Caeau (the property) is located on the southern side of the community of Margam, 4.6km south-east of the town of Port Talbot. The area is heavily industrialised to the north and west but the property sits within approximately 3.5 acres of its own mature grounds and is within close proximity to further favourable bat habitat. Beyond its own boundary, to the east (on the other side of the M4 motorway) are the parklands, grasslands and woodland – including ancient woodland – of Margam Country Park. To the north-west, within 400m are the greens and roughs of British Steel (Port Talbot) Golf Club while to the south, within 300m are the grounds of Margam Crematorium. Beyond the Crematorium, just over 700m away is Eglwys Nunydd Reservoir. To the west, 800m away is a railway line while the coastline is 2.5km to the west.



1.2.2 The property is subject to proposed plans for change of use to a guest house with the addition of a café and erection of rear single-storey extension to accommodate spa facilities. Figure 1 shows an aerial view of the property while figure 2 on the following page is of the wider environment and figure 3 is a site plan. Plan drawings are included in appendix 5.

Figure 1: Aerial view of the property – the **Dwelling** is outlined in red, the **Annexe** is outlined in blue, and the **Outbuilding** is outlined in yellow (from Apple® Maps)



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2. Desk study methods and results

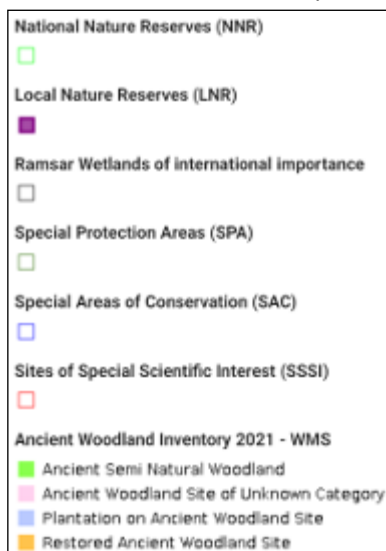
2.1 Methods

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, Eglwys Nunydd Reservoir Site of Special Scientific Interest (SSSI)/Site of Importance for Nature Conservation (SINC) is 715m to the south while Margam Moors SSSI is 1.4km to the south-west. Neither of these sites are designated for their bat interest, and there are no sites which are designated for their bat interest within 10km. Within 2km there are 13 areas of Ancient Semi Natural Woodland, 10 Restored Ancient Woodland Sites, seven Plantations on Ancient Woodland Sites, and six Ancient Woodland Sites of Unknown Classification, along with two additional Wildlife Sites/SINCs: Margam Country Park and Junction 38 Wetland Complex. Further, within 2km there are no Wildlife Trust Sites, Local or National Nature Reserves. 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 data search reported 185 records for the following 13 species within 3.8km:

- **Common pipistrelle (*Pipistrellus pipistrellus*):** 36 records, the closest being four records from between 2006 and 2007 for bats at the site (a potential roost in the house was mentioned). There were an additional four records from elsewhere at the site.
- ***Pipistrellus* species:** eight records, the closest being two 2006 records from the site itself.
- **Soprano pipistrelle (*Pipistrellus pygmaeus*):** 40 records, the closest being two 2006 records for an individual bat at the site. There were an additional 10 records from the site.
- **Brown long-eared (*Plecotus auritus*):** 15 records, the closest being a 2010 record for

droppings from 686m away.

- **Noctule (*Nyctalus noctula*):** 14 records, the closest being a 2013 record from 851m away.
- **Daubenton's (*Myotis daubentonii*):** eight records, the closest being a 2013 record from just over 1km away.
- **Greater horseshoe (*Rhinolophus ferrumequinum*):** six records, the closest being a 2016 record from just over 1km away.
- **Leisler's (*Nyctalus leisleri*):** two records, the closest being a 2016 record from just over 1km away.
- **Serotine (*Eptesicus serotinus*):** two records, the closest being a 2016 record from just over 1km away.
- **Lesser horseshoe (*Rhinolophus hipposideros*):** nine records, the closest being a 2015 record from just under 1.2km away.
- **Natterer's (*Myotis nattereri*):** 14 records, the closest being four 2015 records from just under 1.2km away.
- **Barbastelle (*Barbastella barbastellus*):** one 2015 record from 1.23km away.
- **Unknown bat (*Chiroptera*):** three records, the closest being two records from 2002 and 2004 for a roost 1.25km away.
- ***Myotis* species:** 16 records, the closest being four 2015 records from just under 1.2km away.
- **Nathusius' pipistrelle (*Pipistrellus nathusii*):** six records, the closest being a 2016 record from 1.2km away.
- **Brandt's (*Myotis brandtii*):** one 2016 record from just over 1.2km away.
- **Whiskered (*Myotis mystacinus*):** one 2016 record from just over 1.2km away.
- ***Plecotus* species:** eight records, the closest being a 1936 record from 2.15km away.
- ***M. brandtii*/*M. mystacinus*:** one 1991 record from 2.24km away.
- There were also 65 records for **Barn owl (*Tyto alba*)**, the closest being a 2015 record from 95m away.

2.2.3 In relation to bird interest at sites within 2km, Eglwys Nunydd Reservoir SSSI is the largest sheet of fresh water in the county. The reservoir attracts large numbers of wintering waterfowl and passage migrants. Notable species including Great Crested and Little Grebes, Mallard, Gadwall and Coot now breed.

2.2.4 An online search found the following applications for the property: Application P2022/1061 was validated on 20th December 2022 and is the application for which this Bat Survey Report is being produced (noting that an update to the 2020 report was completed in September 2022 and is on the portal). The application is for change of use of dwellinghouse with detached studio apartments and associated land to a truck stop to include guest house (previously approved under planning permission reference P2005/0449) with addition of a café and erection of rear single-storey extension to accommodate spa facilities, together with formation of an HGV parking area with electric vehicle charging hub points, internal access road & associated infrastructure. A decision not to issue a certificate was taken on 3rd February 2022 in relation to Application P2021/0861 for a Lawful Development Certificate (existing) to confirm a commencement of works in accord with condition No. 1 of Planning Permission P2005/0449 relating to a change of use to guest house accommodation including the construction of an extensions and the refurbishment of studios. Application P2020/0601 was refused on 15th October 2020. The application was for change of use from dwelling house and annex building into a mixed used development consisting of guest house accommodation consisting of 16 guest rooms, with associated bar, cafe and spa facilities, and truck stop with 21 HGV parking spaces. The proposal included the demolition of an existing single storey rear extension, and the erection of a single-storey rear extension, together with widened site access, additional internal access roads, parking areas and associated works. A 2020 Bat Survey Report was produced for this application by I&G Ecological Consulting Ltd, and a summary of the results is included within 2.2.5. Reason 5 of the refusal stated the following: In the

absence of the requested biodiversity information (including further bat, reptile, botanical surveys/reports and a hazel dormouse method statement) to assess the potential impacts on biodiversity and protected species, the applicant has failed to demonstrate that the development would maintain and enhance biodiversity and have no unacceptable impact upon protected/priority species. Accordingly, the proposal would therefore be contrary to objectives set out in Planning Policy Wales edition 10, the Environment (Wales) Act 2016, TAN 5 (2009) and Policies SP15 and EN7 of the Neath Port Talbot Local Development Plan. Permission has now been granted for a large commercial development immediately adjacent to this plot.

2.2.5 The 2020 (updated September 2022) Bat Survey Report produced by I&G Ecological Consulting Ltd reported that droppings and feeding signs (peacock butterfly wings) were found within the hall fireplace area, which DNA analysis confirmed were from *R. hipposideros*. The Anabat recorded only *R. hipposideros* calls while during the 2nd dusk survey, **one *R. hipposideros* was detected entering the building via a slipped glass pane to the front, and during the dawn survey, one bat of the same species was seen to leave the same area.** In addition, **three *P. pygmaeus*** bats were seen to leave loose lead flashing around the chimney pot to the left of the front elevation on the first dusk survey, **five *P. pygmaeus*** bats were seen to leave on the 2nd dusk survey and **four *P. pygmaeus*** bats were seen to enter on the dawn survey. Three *P. pygmaeus* were seen to enter the same area on the 2nd dawn survey on 3rd June 2022, and a solitary *R. hipposideros* was heard and not seen commuting and foraging over the site. There was also an area where the roof steps down to the rear of the dwelling where **two *P. pipistrellus*** bats were seen to leave on the 1st dusk survey. These and a further one species (*Myotis species*) was seen/detected by the surveyors utilising the immediate surroundings for foraging and commuting. It was concluded that **the Dwelling was being used as a feeding perch for an individual (probably male) *R. hipposideros*. The loose roof materials were also providing refuge for up to five *P. pygmaeus* and two *P. pipistrellus*.**

3. Field survey methods and results

3.1 Methods

3.1.1 A Preliminary Roost Assessment (PRA) was undertaken on 21st May 2023 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 Glyn Lloyd-Jones.

3.1.2 An Anabat was deployed within the loft area of the **Dwelling** (the same place as previously located for consistency) on 21st May 2023 and was removed on 6th June 2023. The machine was in working order throughout, and this was confirmed by the log files.

3.1.3 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, the surveyors were able to access all parts of the buildings from ground level, noting that the **Dwelling** and **Outbuilding** have vegetation coverage in some areas. Internally, surveyors were able to access all areas. In addition, three activity surveys were undertaken in good weather conditions to provide confidence in the results, and to understand how bats are using the surroundings. Therefore, using the equipment available to them all areas were thoroughly surveyed by the surveyors to maximise effectiveness.

3.1.4 As a result of the findings of the PRA, one dawn re-entry survey and two dusk emergence survey were undertaken. The 1st dusk survey was undertaken on 21st May 2023 and the surveyors were Glyn Lloyd-Jones, Iestyn Evans, Pete Watts, Greg Evans, Lewis Jones, and Bonnie Illingworth. Sunset was at 21:09, the survey started at 20:50 and ended at 23:10. The weather remained dry throughout the survey with 70% cloud at the start, humidity was around 80%, there was little to no wind, and the temperature started at 14.7°C and ended at 14.2°C.

3.1.5 The dawn survey was undertaken on 5th June 2023 and the surveyors remained as for the 1st dusk survey. Sunrise was at 05:10, the survey started at 03:00 and ended at 05:15. The weather remained dry throughout the survey with 45% cloud at the end, humidity was around 70%, there was a light north-easterly wind of 4mph, and the temperature started at 14.6°C and ended at 13.8°C.

3.1.6 The 2nd dusk survey was undertaken on 20th June 2023 and the surveyors remained as for the previous surveys. Sunset was at 21:36, the survey started at 21:20 and ended at 23:35. The weather remained dry throughout the survey with 45% cloud and occasional sunny spells at the start, humidity was around 70%, there was a light south-westerly wind of 3–4mph, and the temperature started at 17.1°C and ended at 16.0°C.



3.1.7 Figure 5 shows the position of surveyors 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 survey, and the location of the Anabat is shown by a red star.**



Figure 5: Surveyor positions during the activity surveys.
From Apple© maps

3.2 Survey results

3.2.1 The PRA found that there have been no material changes to the property itself since the previous surveys but it was noted that no droppings were present during the 2023 survey. The walls of the original house remain intact with only small cracks while the timber soffits/fascia/weatherboards are predominantly tight to the walls with only a small number of potentially exploitable gaps. The roof slates themselves are predominantly in good condition with no missing or damaged slates, but there are areas where they have slipped; thus, creating potentially exploitable gaps, and there is also some loose lead flashing around the chimney pot to the left of the front elevation. The windows and doors remain generally intact with only one pane of glass in the original timber framed windows to the front still missing. The **Annexe** retains no observable exploitable gaps and no damage to either the walls or roof, but the stone **Outbuilding** has gaps at the walls top as well within the stonework. Internally, the large windows of the original house allow a lot of light internally; thus reducing the potential for day roosting in these areas while the loft spaces at the property. There were many undisturbed cobwebs, a lot of dust, and some signs of rodent use but no bats or their signs were found in these areas. As a result of all the findings to date, it is considered that at present the **Dwelling** is confirmed to support roosting bats and is confirmed as using the features present; the **Annexe** retains **low** potential to support roosting bats and a **low** risk of bats using the features present; and the **Outbuilding** retains **moderate** potential to support roosting bats and a **moderate** risk of bats using the features present. **No evidence of the presence of bats was found either externally or internally.** Site survey images are included in appendix 6.

3.2.2 The species detected by the Anabat was ***R. hipposideros***. A summary of activity follows (see appendix 7 for the full results) and sunset was between 21:09 and 21:27 while sunrise was between 05:15 and 05:00:

R. hipposideros: A total of 623 passes were recorded, with calls recorded on all but one of the 17 days/nights the Anabat was operational. The largest number of passes recorded in one 24 hour period was 108 on 24th June 2023, and the largest number of calls recorded in one 60-minute period was 45 between 00:00 and 01:00 on 24th June. The majority of calls were recorded between 21:00 and 22:00 (167 calls) and 00:00 and 01:00 (103 calls).

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

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



21/05/2023: Sunset was at 21:09, the survey started at 20:50 and ended at 23:10

05/06/2023: Sunrise was at 05:10, the survey started at 03:00 and ended at 05:15

20/06/2023: Sunset was at 21:36, the survey started at 21:20 and ended at 23:35

- ***P. pygmaeus***: Two bats were seen to emerge from under a loose slate around the chimney pot to the left of the front elevation on both dusk surveys and two bats were seen to enter the same area on the dawn survey. In addition, on all surveys, bats were detected foraging and commuting on all sides of the buildings. The earliest activity on the 1st dusk survey was an emergence five minutes after sunset, the earliest activity on the 2nd dusk survey was an emergence 11 minutes after sunset, and the latest activity on the dawn survey was a re-entry 21 minutes before sunrise.
- ***R. hipposideros***: On the dusk surveys, an individual bat was seen (using night vision equipment) to leave the Dwelling via a missing pane of glass to the front. The bat emerged at 67 minutes after sunset on the 1st dusk survey and 69 minutes after sunset on the 2nd dusk survey. No bats were seen to enter or leave on the dawn survey but calls were heard to the south just after the survey started at around 120 minutes before sunrise.

- ***P. pipistrellus***: No bats were seen to either leave or enter any part of the property and no bats were detected on site. However, on all surveys, calls were heard to the south during the second half of the surveys, the earliest call being 72 minutes after sunset on the 2nd dusk survey and the latest call being 57 minutes before sunrise.
- ***Myotis* species**: No bats were seen to leave/enter the property and no bats were detected on site. However, on the dawn and 2nd dusk surveys calls were heard to north and west, the latest call on the dawn survey being to the north 93 minutes before sunrise while the earliest call on the 2nd dusk survey was to the west at 79 minutes after sunset.

3.2.4 Flight activity summary: During each of the two dusk surveys an individual ***R. hipposideros*** was detected leaving the **Dwelling** via a slipped glass pane to the front. In addition, up to two ***P. pygmaeus*** bats were seen to leave/enter a loose slate close to the chimney pot to the left of the front elevation. These and a further two species (***P. pipistrellus*** and ***Myotis* species**) were recorded utilising the surroundings for foraging and commuting.

3.2.5 No evidence of nesting birds was found but enhancement measures have been included.

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 close proximity to favourable bat habitat but is not within 10km of any sites which are designated for their bat interest.** The **Annexe and the Stone Outbuilding** at the property presently have only **low to moderate** potential to support bats and while two species of bat (***P. pipistrellus*** and ***P. pygmaeus***) were using the surroundings for foraging and commuting, **bats are not currently using these buildings. It is therefore considered that proposed development (of these buildings) will not have a negative impact upon the bat species using the area.** The localised scale of the proposed development also suggests that the impact on the local ecology is likely to be negligible and the proposed enhancement detailed in 4.2 should result in a positive impact.

4.1.2 Roost Characterisation Assessment: from the evidence gathered it is considered that the **Dwelling** is being used as a **day/night roost** and has previously been using as a **feeding perch/night roost** by an individual ***R. hipposideros***; is being used as a summer **daytime roost** by a **small number (five previously confirmed)** of ***P. pygmaeus***; and has been used as a summer **daytime roost** by a **small number (two previously confirmed)** of ***P. pipistrellus***. A summary of the evidence follows:

- ***P. pygmaeus***: There are no sites within 10km designated for this species, but there are non-maternity roost records (a **day roost** for a small number (five confirmed) of bats) from the **Dwelling** at the property. Two bats were seen to emerge from under a loose slate around the chimney pot to the left of the front elevation on both dusk surveys and two bats were seen to enter the same area on the dawn survey. In addition, on all surveys, bats were detected foraging and commuting on all sides of the buildings. The earliest activity on the 1st dusk survey was an emergence five minutes after sunset, the earliest activity on the 2nd dusk survey was an emergence 11 minutes after sunset, and the latest activity on the dawn survey was a re-entry 21 minutes before sunrise. The evidence as a whole therefore suggests that this species is still using the **Dwelling as a day roost**, and while a maximum of two bats were detected during the 2023 surveys, this number has previous been up to five.
- ***R. hipposideros***: There are no sites within 10km that is designated for this species, but there are 2020 and 2022 non-maternity roost records from the **Dwelling**. No live or dead bats or their signs were found during the scoping survey. A total of 623 passes were recorded by the Anabat with calls recorded on all but one of the 17 days/nights the Anabat was operational. The largest number of passes recorded in one 24 hour period was 108 on 24th June 2023, and the largest

number of calls recorded in one 60-minute period was 45 between 00:00 and 01:00 on 24th June. The majority of calls were recorded between 21:00 and 22:00 (167 calls) and 00:00 and 01:00 (103 calls). On the dusk surveys, an individual bat was seen (using night vision equipment) to leave the **Dwelling** via a missing pane of glass to the front. The bat emerged at 67 minutes after sunset on the 1st dusk survey and 69 minutes after sunset on the 2nd dusk survey. No bats were seen to enter or leave on the dawn survey but calls were heard to the south just after the survey started at around 120 minutes before sunrise. **The activity survey data confirms continued use by an individual bat of this species, but the roost type appears to have changed to a day/night roost rather than a feeding perch/night roost.**

- ***P. pipistrellus***: There are no sites within 10km designated for this species, but there is a previously confirmed day roost for a small number (two confirmed) of bats of this species at the Dwelling. However, no bats or their signs were found either externally or internally, no calls were recorded by the Anabat, and no bats were seen to leave or enter any building. During all surveys, calls were heard to the south during the second half of the surveys, the earliest call being 72 minutes after sunset on the 2nd dusk survey and the latest call being 57 minutes before sunrise. The evidence as a whole therefore suggests that the **area where the roof steps down to the rear of the Dwelling has previously been used by a small number (two confirmed) of bats of this species as a day roost.**
- ***Myotis* species**: There are no sites within 10km designated for this species, but there are non-roost records from the property. No bats or their signs were found during the scoping survey, no calls were recorded by the Anabat, no bats were seen to either leave or enter any part of the property, and no bats were detected on site. However, during the dawn and 2nd dusk surveys calls were heard to north and west, the latest call on the dawn survey being to the north 93 minutes before sunrise while the earliest call on the 2nd dusk survey was to the west at 79 minutes after sunset. The evidence as a whole therefore suggests that this species is using the site as part of its foraging and commuting habitats, with the focus of activity being away from the buildings themselves.

4.1.3 Roost significance: In relation to roost status and significance, the data included in the figure on p. 39 of the Bat Mitigation guidelines (Mitchell-Jones, A.J., 2004a) was used, and focus was placed upon the need for appropriate – but proportionate – mitigation.

- ***R. hipposideros*** is considered to be a rare bat species but is a species of least concern on the IUCN Red List of Threatened species; although it is noted that the population is decreasing. Nationally, ***R. hipposideros*** has been the subject of a Species Action Plan under the UK Biodiversity Action Plan, and their UK populations are declining and now restricted to South-west England and Wales, with their population centre being within Pembrokeshire, and their conservation status is vulnerable. Using the mitigation guidelines, the roost at the site is considered to be of medium low conservation significance and the proposed mitigation measures will provide a suitable dedicated roost space at the property.
- ***P. pipistrellus*** and ***P. pygmaeus*** are considered to be common bat species and species of least concern on the IUCN Red List of Threatened species. Nationally, they are a priority bat species ***P. pipistrellus*** (in Wales only) and have previously been the subject of Species Action Plans under the UK Biodiversity Action Plan, their populations are considered to be stable, and their conservation status is favourable. As a result, the roosts at the property are considered to be of low conservation significance, and the proposed mitigation measures will provide suitable roost spaces at the property.

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 creates a dedicated roost space at the property prior to any works commencing as well as providing additional enhancement on site for all species detected using the site.

4.1.4 In relation to use of the property at other times of the year, *Pipistrellus* species 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. The species has a relatively flexible winter hibernation strategy and will fly when the weather is mild. They will also use bat boxes to hibernate. Therefore, it is considered that the property has **low** potential for hibernation for these species. In relation to *R. hipposideros*, this species favours caves, disused mines, tunnels and cellars for hibernation. Therefore, it is considered that the property has **very low** potential for hibernation for this species.

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 *Crevice-dwelling bats* such as *P. pipistrellus* and *P. pygmaeus* 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 1m² would be useful for summer nursery roosts. The height of entry can be from 2–7m. *Horseshoe bats* need a larger access so that they can fly (instead of crawl) directly into the roost. *R. hipposideros* need an access of 300mm (w) x 200mm (h), while *R. ferrumequinum* need 400mm (w) x 300mm (h). The roosting area should not be trussed, to allow flight, and should (where possible) be of similar dimensions to the roost being replaced. 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 up to three 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 property.**

4.1.6 Enforceable conditions of the EPS licence will require the maintenance of mitigation measures already incorporated to minimise the risk of disturbance, killing or injury of bats (i.e. timing and methods of demolition works), and compensation measures to ensure there is 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 *R. hipposideros*, *P. pygmaeus* and *P. pipistrellus* are 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 11th Edition (February 2021); as well as compensate for the loss of roosting opportunity. Excellent long-term enhancement can be delivered, see

appendix 9 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. The recommendations are as follows:

- ✦ **Recommendation 1 (Site Bat Enhancement):** Prior to works commencing, x 2 Harlech Woodstone (or similar), x and x 2 Improved Cavity (or similar) bat boxes to be affixed to mature trees at the property.
- ✦ **Recommendation 2 (Dwelling Bat Mitigation):** Prior to works commencing, a dedicated bat house will be constructed close to the northern boundary with fly in access suitable for **Lesser horseshoe**. Soffit gaps are to be created for **Pipistrellus species**.
- ✦ **Recommendation 3 (Annexe Bat Enhancement):** x 1 Beaumaris Woodstone (or similar) bat box to be affixed to the south-east elevation of the **Annexe**.

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.

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 was found but any nests subsequently found must be confirmed vacant before work commences. Recommendations for enhancement are as follows:

- ✦ **Recommendation 5 (Annexe Bird Enhancement):** x 2 Sparrow terraces and x 1 House martin nest cup to be affixed to the north-west elevation of the Annexe.
- ✦ **Recommendation 6 (Site Bird Enhancement):** Prior to works commencing, x 3 open-fronted and x 3 small-holed bird boxes to be affixed to mature trees within the curtilage of the property.

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 20/06/2025 (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 disrepair.

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

5.1 Outline method statement

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 as will the blocking up of any gaps not to be retained. Whilst bats were only seen to leave a loose slate close to the chimney on the **Dwelling** as well as a missing pane in one window, it always possible that they may be using other areas of the property, and evidence confirms that they have previously used other areas.

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 for a provisional timetable of works.

Table 1: Provisional timetable of works

Stage	Dates	Works
0	From receipt of planning permission to receipt of EPS licence	• NO works to the roof or internal ceilings of the upper floor of main dwelling at the property. This includes works to the site subject to development which may impact on the Dwelling itself. • Recommendation 1 (Site Bat Enhancement): Prior to works commencing, x 2 Harlech Woodstone (or similar), x and x 2 Improved Cavity (or similar) bat boxes to be affixed to mature trees at the property. • Recommendation 2 (Dwelling Bat Mitigation): Prior to works commencing, <i>a dedicated bat house will be constructed close to the northern boundary with fly in access suitable for Lesser horseshoe.</i> Soffit gaps are to be created for Pipistrellus species. • Recommendation 6 (Site Bird Enhancement): Prior to works commencing, x 3 open-fronted and x 3 small-holed bird boxes to be affixed to mature trees within the curtilage of the property. • <i>Photographic proof of the installation of the bat and bird measures will be provided to the named ecologist demonstrating full compliance with the method statement and licence, then...</i> they are all to be inspected by the named ecologist on the EPS (Bats) Licence prior to any licensable works commencing.
1	From receipt of EPS licence	• Toolbox talks. • If works are to commence within the active bat season, then a survey will be undertaken immediately prior to works commencing and works will only commence if bats are confirmed not to be present. An internal and external inspection by the named ecologist will be undertaken prior to works commencing regardless of the time of year. • Ecologist to be on site to check when all works that will impact upon the roosts is taking place i.e., works by hand to the roof and roofware and blocking up of any cavities/crevices/gaps that are not to be retained. Non-licensable activity to be undertaken during works: • Recommendation 3 (Annexe Bat Enhancement): x 1 Beaumaris Woodstone (or similar) bat box to be affixed to the south-east elevation of the Annexe. • Recommendation 4 (Broadscale Site Enhancement): As far as

		possible, all mature hedgerows and boundary trees on site are to be retained (and any lost to be replaced with native species) to enhance wider ecological benefit and connectivity to the surroundings. In addition, all new planting is to be of native species. The proposed site plan includes additional planting as well as an attenuation pond. • Recommendation 5 (Annexe Bird Enhancement): x 2 Sparrow terraces and x 1 House martin nest cup to be affixed to the north-west elevation of the Annexe.
2	Completion of all works	• Monitoring check within 4 weeks of completion of all works to confirm bat mitigation and enhancement implemented correctly (roost and bat box inspection). • Reporting to NRW/Welsh Government within 4 weeks of completion of works by the named ecologist.
3	Summer period 1 Year post completion	• Inspect bat mitigation and enhancement. • Reporting to NRW/Welsh Government by 30th September.
4	Summer period 3 Years post completion	• Inspect bat mitigation and enhancement. • Reporting to NRW/Welsh Government by 30th September.
5	Annually	• Monitoring the integrity of the bat roost with defects made good in advance of the bat season (April) annually, and a written report of works undertaken each year back to NRW by the end of April. To be undertaken by the licensee (internal access would require a licensed ecologist). Note: The owner WILL NOT enter the roost itself as a licence is required for any actions which may potentially disturb a roost.

Maintaining bat roost provision

5.1.6 As per **recommendation 1 (Site Bat Enhancement)**, prior to works commencing, x 2 Harlech Woodstone (or similar), x and x 2 Improved Cavity (or similar) bat boxes to be affixed to mature trees at the property. In addition, as per **recommendation 2 (Dwelling Bat Mitigation)**, prior to works commencing, a dedicated bat house will be constructed close to the northern boundary with fly in access suitable for **Lesser horseshoe**. Soffit gaps are to be created for **Pipistrellus species**. Further, as per **recommendation 3 (Annexe Bat Enhancement)**, x 1 Beaumaris Woodstone (or similar) bat box to be affixed to the south-east elevation of the **Annexe**.

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 **Lighting plans** for the property are not currently known but will be included on the final plans to be submitted. However, there will be no lighting shining on any of the bat access points, and there will be no lighting at all on the bat house. Should any lighting be proposed, it must be ensured that exterior lighting is kept to a minimum to prevent any adverse impacts on bats. In particular, external lighting around the recommended mitigation/enhancement must be carefully designed to avoid any impact upon bats (Institution of Lighting Professionals, 2018). Any external lighting scheme proposed for this application will need to demonstrate compliance with the lighting principles outlined within the guidance referenced above.

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.

5.1.10 Habitat. There are no known plans to significantly alter the habitat at the property. Measures to support House sparrow and House martin could also be provided as they are a UK BAP species. 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). **Recommendation 4 (Broadscale Site Enhancement)** states that As far as possible, all mature hedgerows and trees on site are to be retained (and any lost to be replaced with native species) to enhance wider ecological benefit and connectivity to the surroundings In addition, all new planting is to be of native species. The proposed site plan includes additional planting as well as an attenuation pond. See [17 bats & hedges leaflet.pdf \(hedgelink.org.uk\)](#) and [developers-1.pdf \(britishhedgehogs.org.uk\)](#).

5.1.11 Monitoring. In line with mitigation guidelines for medium-low conservation significance roosts, there are minimal timing constraints or monitoring requirements. As such, in addition to inspection of the bat boxes, dedicated bat roost, and the property prior to works commencing, a monitoring check will be undertaken within four weeks of completion of all works to confirm bat mitigation and enhancement measures have been implemented correctly (roost and bat box inspection) and monitoring will be implemented for two years. Further, as required by NRW for all *Rhinolophus* roosts, monitoring the integrity of the bat roost will be undertaken by the licensee (if entry internally is required a licence bat ecologist is to be employed) annually with any defects being rectified by 30th April (i.e., in advance of the bat season) of that year. Reporting to NRW will be completed within four weeks of inspection by the named ecologist with annual reporting being completed by the licensee.

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 roost 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 and annual monitoring will also be undertaken by the licensee. 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, 3rd edition (Collins, J. (Ed.), 2016) & The Bat Workers' Manual, 3rd edition. (Mitchell-Jones, A.J., & McLeish, A.P. (Ed.), 2004). Reports are written with reference to the CIEEM (2015) 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 (11th 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 10th 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.

Appendix 3: Types of bat roost and survey timings

As the mitigation guidelines state: The presence of a significant (important) bat roost... can normally be determined on a single visit at any time of year; providing that the entire structure is accessible and that any signs of bat activity have not been removed by others. The table below shows the applicability of survey methods. The table has been reproduced from Bat Mitigation Guidelines (table 5.2) (2004).

Season	Roost type	Inspection	Bat detectors and emergence counts
Spring (Mar – May)	Building	Suitable (signs, perhaps bats)	Limited, weather dependent
	Trees	Difficult (best for signs before leaves appear)	Very limited, weather dependent
	Underground	Suitable (signs only)	Static detectors may be useful
Summer (June – August)	Building	Suitable (signs and bats)	Suitable
	Trees	Difficult	Limited: use sunrise survey
	Underground	Suitable (signs only)	Rarely useful
Autumn (September – November)	Building	Suitable (signs and bats)	Limited, weather dependent
	Trees	Difficult	Rather limited, weather dependent; use sunrise survey?
	Underground	Suitable (signs, perhaps bats)	Static detectors may be useful
Winter (December – February)	Building	Suitable (signs, perhaps bats)	Rarely useful
	Trees	Difficult (best for signs after leaves have gone)	Rarely useful
	Underground	Suitable (signs and bats)	Static detectors may be useful

The table below shows the recommended survey timings and is reproduced from the Good Practice Guidelines (table 7.1) (3rd Edition, 2016). 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).

Low roost suitability	Moderate roost suitability	High roost suitability
May to August (structures) No further surveys required (trees)	May to September ^a with at least one of the surveys between May and August ^b	May to September ^a with at least two of the surveys between May and August ^b

^a 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.

^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 least two weeks apart, preferably more, unless there are specific ecological reasons for the surveys to be closer together (for example, a more accurate count of a maternity colony is required but it is likely that the colony will soon disperse). If there is potential for a maternity colony then consideration should be given to detectability. A survey on 31 August followed by a mid-September survey is unlikely to pick up a maternity colony. An ecologist should use their professional judgement to design the most appropriate survey regime.

The table below shows the recommended minimum number of surveys to be carried out according to roost potential. It is reproduced from the Good Practice Guidelines (table 7.3) (3rd Edition, 2016).

Low roost suitability	Moderate roost suitability	High roost suitability
One survey visit. One dusk emergence or dawn re-entry ^a (structures). No further surveys required (trees)	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey ^b	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn ^b

^aStructures 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 (as noted in section 5.2.9 of the guidelines). If there is a possibility that quiet calling, late-emerging species are present then a dawn survey may be more appropriate, providing weather conditions are suitable. In some cases, more than one survey may be needed, particularly where there are several buildings in this category.

^b Multiple survey visits should be spread out to sample as much of the recommended survey period (see table 7.1 above) as possible; it is recommended that surveys are spaced at least two weeks apart, preferably more. A dawn survey immediately after a dusk one is considered only one visit.

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 1m² 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&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 S091520/1. I&G were proud to be shortlisted for a BCT roost award in 2021.
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 S090746/1.
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 S092522/1.
Mr Pete Watts	Trainee	Peter provides survey support with his keen eye for detail and vigilance. He has accompanied I&G Ecological Consulting Ltd on many surveys and is becoming a valuable and experienced surveyor.
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.
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.
Mr Lewis Jones	Assistant	A Graduate with a background in the biological sciences with an aptitude and passion for ecology. Lewis has undertaken courses in herpetology and phase 1 surveys and has a hunger to learn. With a fondness for bats and owls he's also keen to develop his survey skills in this area.
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 Wendy Larcombe	Assistant	Wendy has an Honours degree in Environmental Biology and over 17 years' experience working in conservation, including as a Planning Ecologist and a freelance Ecologist. She has a wide range of experience, which includes extended Phase 1 habitat surveys, building assessment for bats, bat/barn owl surveys, summer roost counts (Gower), and winter roost counts (Black Mountains.) She has undertaken a range of training including bat ecology and surveying and is a valued member of the team.

① North East 1 : 50	② North West 1 : 50
③ South East 1 : 100	④ South West 1 : 100

Rev	Description	Date

CODE	AUTHORITY DESCRIPTION
SYMBOL	PLANNING REFERENCE

PROJECT Tyn-Y-Caeau, Malgam, Port Talbot
Existing Elevations

DRAWN BY Auror	CHECKED BY Claire	DATE 10/07/19
SCALE 1 : 50	PROJECT NUMBER 1000000000	
PROJECT LOCATION A162		REV 001

1 North East
1:100

2 North West
1:100

3 South East
1:150

4 South West
1:150

Rev	Description	Date

NAME: TYN-Y-CEOGY
 STATUS: CHURCH OF IRELAND

PROJECT: Tyn-Y-Ceogy, Mangam, Port Talbot

Proposed Elevations

DESIGNED BY: ALBY
 CHECKED BY: CHEN
 DATE: 14/05/2022
 PROJECT NUMBER: 2021

PROJECT: A155

1 North East
1 : 100

2 North West
1 : 100

3 South West
1 : 100

4 South East
1 : 100

No.	Description	Date

CODE	STATUS	SUITABILITY DESCRIPTION	PURPOSE OF ISSUE

PROJECT		Date	Scale (@ A3)
Tyn-Y-Caeau, Margam, Port Talbot		04/11/2021	1 : 100
Existing Elevations		Author Checked by	DRAWING NUMBER
			EX02
			REV

04/11/2021 10:48:13:07

Above: Existing **Annexe** elevations. **Below:** Proposed **Annexe** elevations. **Biodiversity enhancement:** The proposed location for the bat box on the south-east elevation is shown by a red arrow, and the proposed locations for the House martin nest cup and Sparrow terraces on the north-west elevation are shown by blue and yellow arrows, respectively.

1 North East
1 : 100

2 North West
1 : 100

3 South West
1 : 100

4 South East
1 : 100

No.	Description	Date

CODE	STATUS	SUITABILITY DESCRIPTION	PURPOSE OF ISSUE

PROJECT		Date	Scale (@ A3)
Tyn-Y-Caeau, Margam, Port Talbot		10/08/2020	1 : 100
Proposed Elevations		Author Checked by	DRAWING NUMBER
			A108
			REV

10/08/2020 12:04:05

Appendix 6: Site survey images



The property is subject to proposed plans for change of use of to a guest house with the addition of a café and erection of rear single-storey extension to accommodate spa facilities. The original period **Dwelling** is a large north-west facing predominantly two storey detached building constructed of rendered and painted walls and has natural slate roofs with lead flashing around the chimneys. The detached, north-east facing, two storey (with subterranean rooms to the rear so this aspect is three storey) **Annexe** is constructed of smooth rendered walls with a slate roof, brown uPVC framed windows and doors, and brown uPVC soffits/fascias/weatherboards and rainwater goods while the detached **Outbuilding** is constructed of stone and has an unlined slate roof with a lot of vegetation coverage. There have been no material changes to the property itself since the previous surveys but it was noted that no droppings were present during the 2023 survey. The walls of the original house remain intact with only small cracks while the timber soffits/fascia/weatherboards are predominantly tight to the walls with only a small number of potentially exploitable gaps. The roof slates themselves are predominantly in good condition with no missing or damaged slates, but there are areas where they have slipped; thus, creating potentially exploitable gaps, and there is also some loose lead flashing around the chimney pot to the left of the front elevation. The windows and doors remain generally intact with only one pane of glass in the original timber framed windows to the front still missing.



Fireplace where *R. hipposideros* droppings and feeding signs were previously found – none were present during the 2023



Boarded up front door



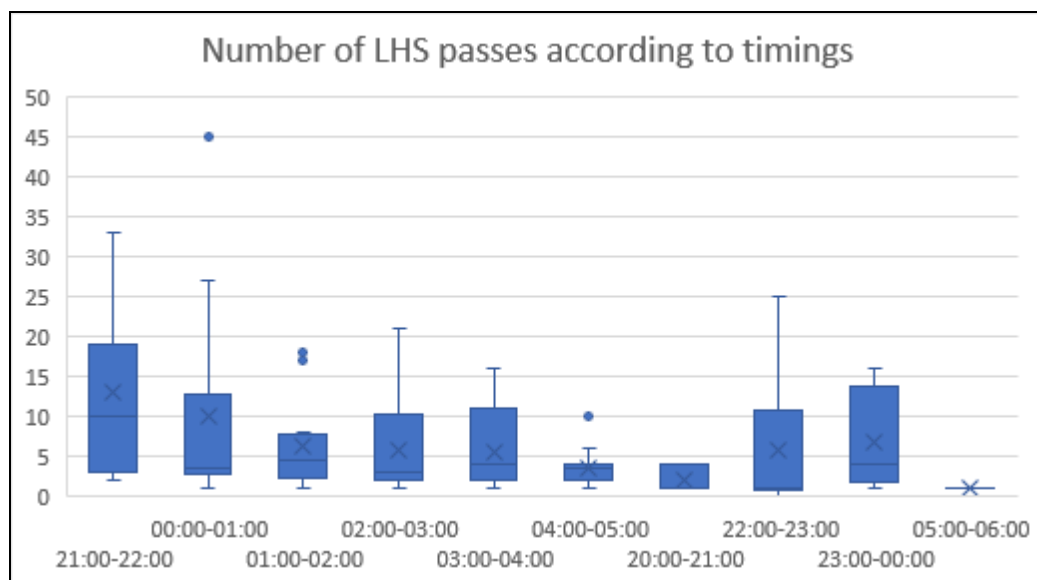
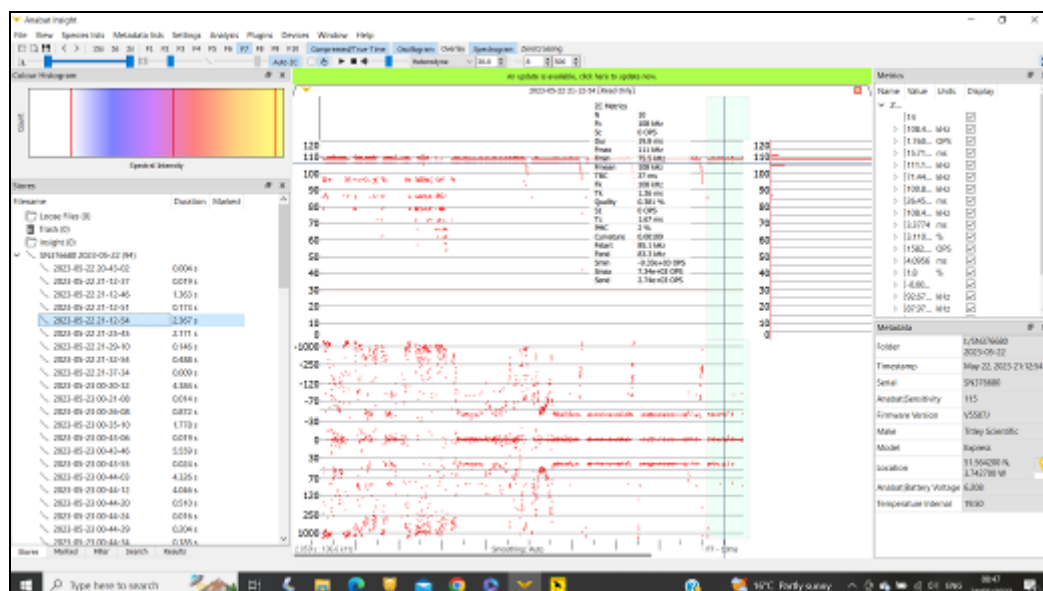
The **Annexe** retains no observable exploitable gaps and no damage to either the walls or roof, but the stone **Outbuilding** has gaps at the walls top as well within the stonework. Internally, the large windows of the original house allow a lot of light internally; thus reducing the potential for day roosting in these areas while the loft spaces at the property. There were many undisturbed cobwebs, a lot of dust, and some signs of rodent use but no bats or their signs were found in these areas.

Appendix 7: Static detector results

Lesser horseshoe – *Rhinolophus hipposideros*

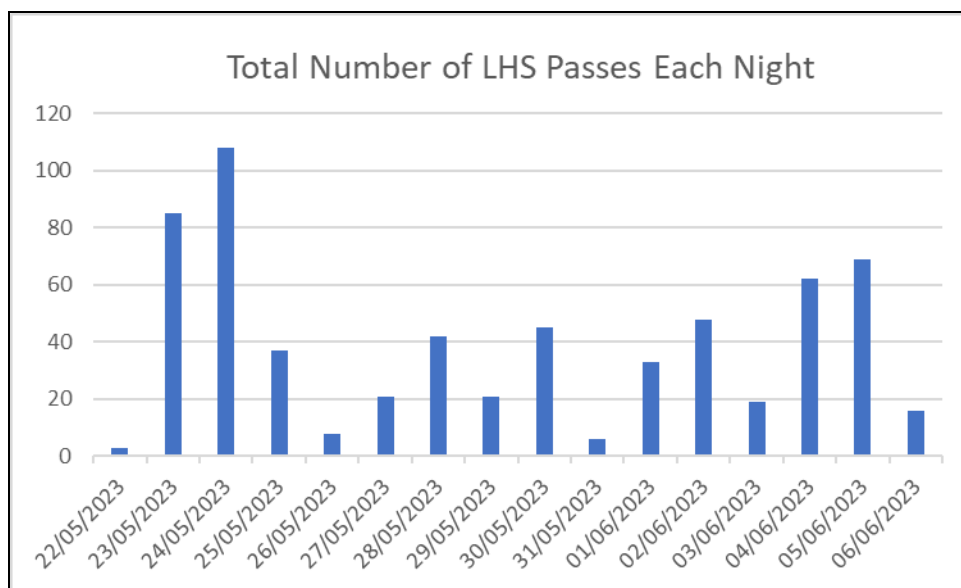
Date	Time	Number of passes (sequence of calls)
22/05/2023	21:00-22:00	3
23/05/2023	00:00-01:00	27
	01:00-02:00	8
	02:00-03:00	13
	03:00-04:00	6
	04:00-05:00	4
	20:00-21:00	1
	21:00-22:00	21
	22:00-23:00	0
	23:00-00:00	5
24/05/2023	00:00-01:00	45
	01:00-02:00	17
	02:00-03:00	12
	03:00-04:00	16
	04:00-05:00	4
	05:00-06:00	1
	20:00-21:00	4
	21:00-22:00	8
	22:00-23:00	1
25/05/2023	00:00-01:00	3
	01:00-02:00	5
	02:00-03:00	3
	03:00-04:00	11
	04:00-05:00	4
	21:00-22:00	10
	23:00-00:00	1
26/05/2023	01:00-02:00	2
	04:00-05:00	3
	20:00-21:00	1
	21:00-22:00	2
27/05/2023	00:00-01:00	1
	01:00-02:00	3
	02:00-03:00	5
	03:00-04:00	1
	04:00-05:00	1
	05:00-06:00	1
	21:00-22:00	9
28/05/2023	01:00-02:00	18
	02:00-03:00	3
	03:00-04:00	2
	04:00-05:00	2
	21:00-22:00	17
29/05/2023	04:00-05:00	2
	21:00-22:00	19

30/05/2023	00:00-01:00	4
	01:00-02:00	5
	02:00-03:00	2
	03:00-04:00	11
	04:00-05:00	4
	21:00-22:00	17
31/05/2023	00:00-01:00	2
	02:00-03:00	3
	21:00-22:00	2
	22:00-23:00	1
	23:00-00:00	13
01/06/2023	00:00-01:00	8
	01:00-02:00	7
	02:00-03:00	2
	03:00-04:00	4
	04:00-05:00	2
	21:00-22:00	10
02/06/2023	01:00-02:00	4
	02:00-03:00	3
	03:00-04:00	1
	04:00-05:00	4
	21:00-22:00	33
	22:00-23:00	1
	23:00-00:00	2
03/06/2023	00:00-01:00	5
	01:00-02:00	3
	04:00-05:00	2
	05:00-06:00	1
	21:00-22:00	2
	22:00-23:00	6
04/06/2023	02:00-03:00	1
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	04:00-05:00	1
	05:00-06:00	1
	21:00-22:00	16
	22:00-23:00	25
	23:00-00:00	16
05/06/2023	00:00-01:00	3
	01:00-02:00	2
	02:00-03:00	21
	03:00-04:00	3
	04:00-05:00	10
	21:00-22:00	27
	23:00-00:00	3
06/06/2023	00:00-01:00	3
	01:00-02:00	1
	02:00-03:00	2
	03:00-04:00	4
	04:00-05:00	6



Totals

Date	LHS
22/05/2023	3
23/05/2023	85
24/05/2023	108
25/05/2023	37
26/05/2023	8
27/05/2023	21
28/05/2023	42
29/05/2023	21
30/05/2023	45
31/05/2023	6
01/06/2023	33
02/06/2023	48
03/06/2023	19
04/06/2023	62
05/06/2023	69
06/06/2023	16



Appendix 8: Roost status and mitigation

The figure below is taken from p. 39 of the Bat Mitigation guidelines (Mitchell-Jones, A.J., 2004a) and focus upon the need for appropriate, but proportionate, mitigation.

Conservation significance	Low	Roost status	Mitigation/compensation requirement (depending on impact)
	High		
		Feeding perches of common/rarer species	Flexibility over provision of bat- boxes, access to new buildings etc. No conditions about timing or monitoring
		Individual bats of common species	
		Small numbers of common species. Not a maternity site	
		Feeding perches of Annex II species	Provision of new roost facilities where possible. Need not be exactly like-for-like, but should be suitable, based on species' requirements. Minimal timing constraints or monitoring requirements
		Small numbers of rarer species. Not a maternity site	
		Hibernation sites for small numbers of common/rarer species	Timing constraints. More or less like-for-like replacement. Bats not to be left without a roost and must be given time to find the replacement. Monitoring for 2 years preferred.
		Maternity sites of common species	
		Maternity sites of rarer species	Timing constraints. Like-for-like replacement as a minimum. No destruction of former roost until replacement completed and usage demonstrated. Monitoring for at least 2 years.
		Significant hibernation sites for rarer/rarest species or all species assemblages	
		Sites meeting SSSI guidelines	Oppose interference with existing roosts or seek improved roost provision. Timing constraints. No destruction of former roost until replacement completed and significant usage demonstrated. Monitoring for as long as possible.
		Maternity sites of rarest species	

Figure 4. Guidelines for proportionate mitigation. The definition of common, rare and rarest species requires regional interpretation.

Appendix 9: Roost compensation & enhancement measures

Mitigation and enhancement recommendations:

- ✧ **Recommendation 1 (Site Bat Enhancement):** Prior to works commencing, x 2 Harlech Woodstone (or similar), x and x 2 Improved Cavity (or similar) bat boxes to be affixed to mature trees at the property.
- ✧ **Recommendation 2 (Dwelling Bat Mitigation):** Prior to works commencing, a dedicated bat house will be constructed close to the northern boundary with fly in access suitable for **Lesser horseshoe**. Soffit gaps are to be created for **Pipistrellus species**.
- ✧ **Recommendation 3 (Annexe Bat Enhancement):** x 1 Beaumaris Woodstone (or similar) bat box to be affixed to the south-east elevation of the **Annexe**.
- ✧ **Recommendation 4 (Broadscale Enhancement):** As far as possible, all mature hedgerows and trees on site are to be retained (and any lost to be replaced with native species) to enhance wider ecological benefit and connectivity to the surroundings. In addition, all new planting is to be of native species. The proposed site plan includes additional planting as well as an attenuation pond.
- ✧ **Recommendation 5 (Annexe Bird Enhancement):** x 2 Sparrow terraces and x 1 House martin nest cup to be affixed to the north-west elevation of the Annexe.
- ✧ **Recommendation 6 (Site Bird Enhancement):** Prior to works commencing, x 3 open-fronted and x 3 small-holed bird boxes to be affixed to mature trees within the curtilage of the property.

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.

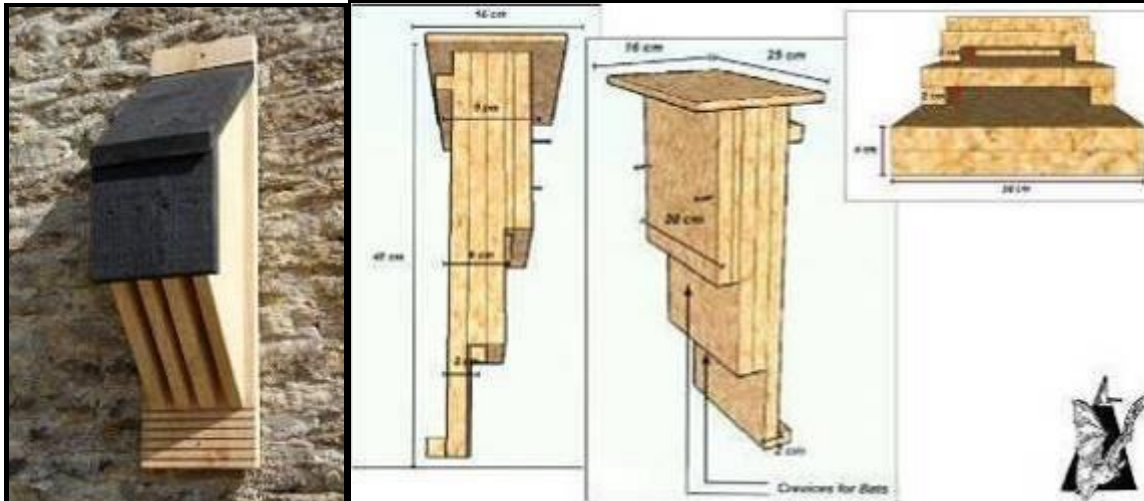


Left: The Harlech WoodStone bat box offers excellent insulation with a minimum of condensation for roosting bats. WoodStone® is a mixture of sawdust from FSC wood sources and concrete, and it is designed to last for years. It is breathable so there will be no problems with condensation and Woodstone 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.

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.



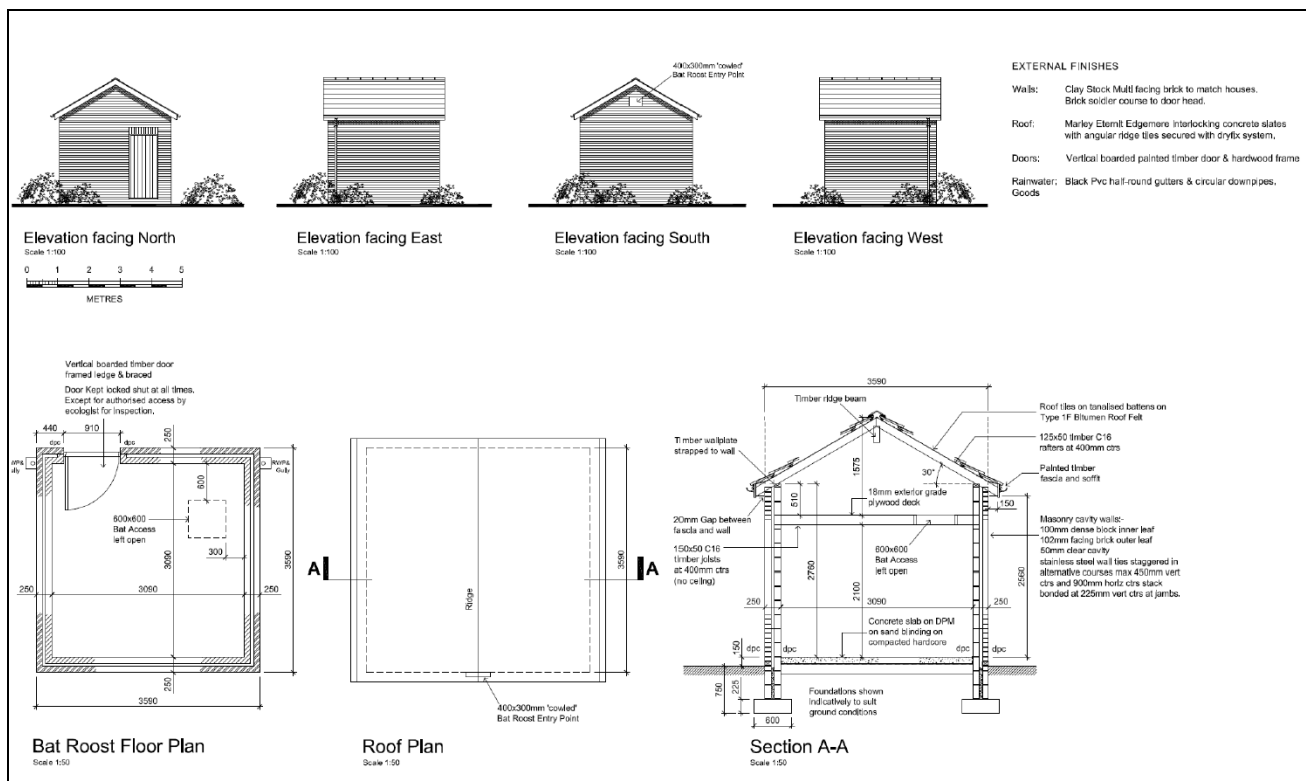
Below: The Vincent Pro bat box (left) and the Kent Bat Box (right)



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.

The bat house will be located as shown by the blue dot below on the northern edge of the property where there is a woodland edge and close to the proposed amenity pond. The roost will be approximately 3.6m wide by 3.6m long by 3.7m high which is larger than the minimum required size for an *R. hipposideros* night roost. It will have masonry cavity walls with a clay stock multi facing brick to match the houses and brock soldier course to the door head. The roof will be Marley Eternit Edgemere Interlocking slates with angular ridge tiles secured with dry fix system; the door will be vertical boarded painted timber with a hardwood frame; and the rainwater goods will be black uPVC half-round gutters with circular downpipes. The door will be kept locked at all times except for accessed by a licensed bat ecologist. The cowed 400mm x 300mm bat roost entry point for *R. hipposideros* bats will be at the apex of the southern elevation and there will be a 20mm gap between the fascias and the walls (with access internally) to allow access by all crevice dwelling (and most roof void dwelling) bat species.





Below: Examples of soffit gaps.



Night Roosts and Day Roosts

Day roosting in horseshoe bats tends to refer to roosting activity in buildings and in some cases, large numbers of females that form a maternity colony. Within these roosts they congregate to give birth and raise their young. As a result, day roosts are of prime conservation concern as disturbance and destruction has resulted in severe population declines.

Night roosting activity is less understood. Through behavioural research it is known that night roosts are used as 'pit stops' between foraging sites and used for resting and digestion between commutes. The loss of a night roost must also be mitigated for.

Factors to Consider While Creating or Retaining a Roost for Horseshoe Bats

While planning successful mitigation strategies for horseshoe roosts or hibernation sites, there are a number of factors that need to be considered: Temperature and humidity regimes; Aspect and orientation; Size; Access points; Lighting; Materials; and Vegetation Linkages.

Temperature is deemed one of the most important environmental variables affecting the success of a new roosting facility. Optimum roost temperatures are species-specific.

Aspect and orientation can be manipulated in order to utilise solar energy and maintain optimum temperatures within a roost. In the northern hemisphere, a southerly or westerly facing roost site is best; particularly maternity roosts.

The **size** of the roost specifically for horseshoe bats should be at least 2.8m in height and 5m in length and width. The void should not be cluttered or obstructed as horseshoes will often fly in spaces between the rafters and ceiling, and ceilings to the floor. A typical truss design should be avoided to successfully mitigate for horseshoes. The only lining membrane for the areas that bats may encounter is 1F traditional bitumen membrane), especially around the roof apex and 1m or more down the slope.

Access points are key to the success of horseshoe roost sites as horseshoe bats directly fly into a roost. They need access points of 30cm (width) x 20cm (height) for **Lesser horseshoe** and 40cm (width) x 30cm (height) for **Greater horseshoe**.

As nocturnal mammals, bats are **light-sensitive** and adapted to low light conditions. Consideration must be made to reduce light spill close to roosting areas. Horseshoe bats typically emerge approximately 30 minutes after sunset and during emergence they often fly in and out of the roost repeatedly before leaving. This behaviour is termed “light sampling” and has an

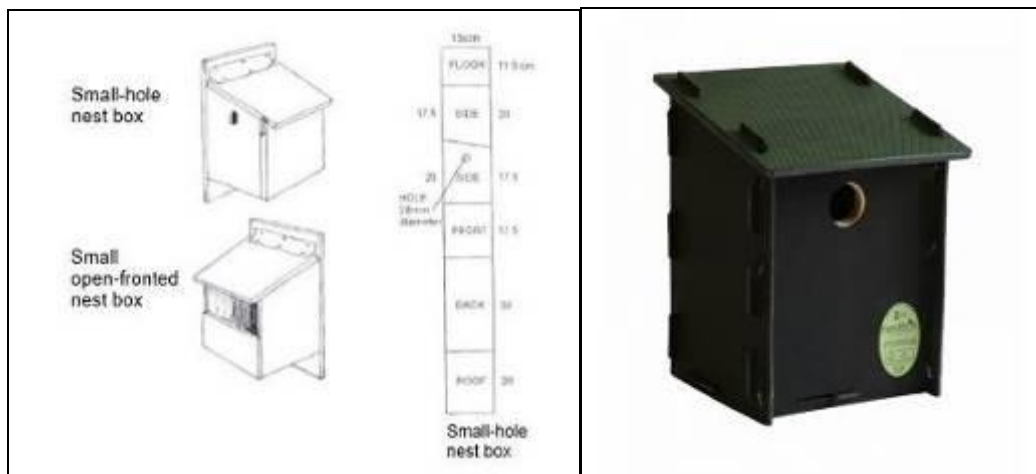
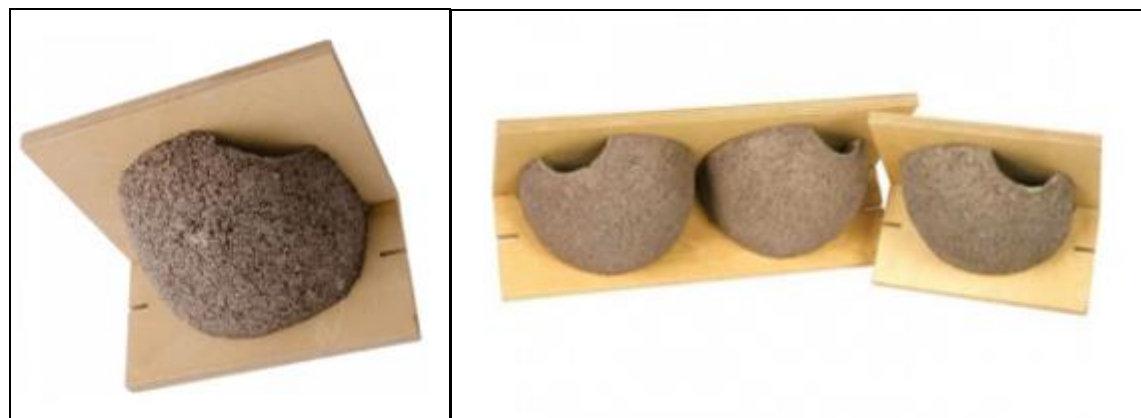
important social function prior to the bats leaving the roost. This behaviour can be seen in the video below. Mitigation schemes can try to create a covered area where bats can undertake this behaviour as shown in the image on the left.



Example of a cowled hood for horseshoe bat access



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



Appendix 10: I&G Ecological Consulting Ltd legal disclaimer

This report was prepared by I&G Ecological Consulting Ltd at the instruction of, and for use by, our client(s) named on the front of the report. It does not in any way constitute advice to any third party who is able to access it by any means. I&G Ecological Consulting Ltd excludes to the fullest extent lawfully permitted, all liability whatsoever for any loss or damage howsoever arising from reliance on the contents of this report. We do not however, exclude our liability (if any) for personal injury or death resulting from our negligence, for fraud or any other matter in relation to which we cannot legally exclude liability.

We confirm that in preparing this report, we have exercised reasonable skill and care, taking into account the project objectives, the agreed scope of the work, and prevailing site conditions.

Advice in this report is based on the judgement of I&G Ecological Consulting Ltd and the interpretation of data gathered during the course of their survey on the property named in this document. ***Until payment has been received, this report remains the intellectual property of I&G Ecological Consulting Ltd and can be withdrawn from the planning process at our request. You are also not covered by any of our indemnity or liability insurance until the report has been paid for in full.***

The findings and advice given during the course of this survey is provided by employees of I&G Ecological Consulting Ltd acting only on behalf of I&G Ecological Consulting Ltd.

The employees of I&G Ecological Consulting Ltd may hold other paid employment but none of their advice, nor work undertaken in respect of producing this report, refers to any roles or responsibilities held in any other employment other than that held at I&G Ecological Consulting Ltd.

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

Appendix 11: References, bibliography, and sources of information

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