



**Former Ebenezer Chapel, Neath Road, Rhos,
Pontardawe, Neath Port Talbot, SA8 3HB**

Bat Survey Report for Mr R. Steadman



A European Protected Species Licence will be required
*if any works are to be undertaken on the **main Chapel (roof area)***

A European Protected Species Licence will not be required
*for works to be undertaken on the **Vestry or other areas of the chapel.***

Report type	Bat Survey Report
Report reference	IG2023FormerEbenezerChapel
Site	Former Ebenezer Chapel, Neath Road, Rhos, Pontardawe, Neath Port Talbot, SA8 3HB
Grid reference	SN 73978 02990
Client	Mr R. Steadman
Date(s)/time(s)/type(s) of survey(s)	Scoping survey: 22 nd February 2023 Dusk emergence survey: 6 th May 2023 between 20:30 and 22:45 Dawn re-entry survey: 4 th June 2023 between 03:00 and 05:05
Surveyor details	Scoping survey: Mr Glyn Lloyd-Jones, Natural Resources Wales Licence number S091520/1 Activity surveys: as above with assistance from Mr Iestyn Evans, Natural Resources Wales Licence number S090746/1; Mr Greg Evans; Ms Megan Hill; and Ms Bonnie Illingworth
Architect	Mr C. Morgan, Cwm Planning & Design Ltd

Version	Status	Changes	Name	Position	Date
1	Draft	Sent for review on 18/08/2023	Ceri Daugherty	Author	18/08/23

	Name	Position	Date
Reviewed by	Ceri Daugherty	Author	18/08/2023
Approved by	Glyn Lloyd-Jones	Director	19/08/2023
Sent to Client	Glyn Lloyd-Jones	Director	21/08/2023

I&G Ecological Consulting Ltd, Awelfryn, Llannon, Llanelli, Carmarthenshire, SA14 6BY.
www.iandgecology.com; email: Office.igecol@gmail.com, lestyn.igecol@gmail.com, and Glyn.igecol@gmail.com; or call Iestyn on 07733 214829 and Glyn on 07973 685423

Executive summary

- ✦ The Former Ebenezer Chapel (the property) comprises a large, detached, two-storey (plus loft), west facing, former **main Chapel** which has a single-storey lean-to section to the rear as well as a detached, single storey (no loft) **Vestry** to the rear. It is subject to proposed plans for conversion to a dwelling with the **main Chapel** also having a rear extension and the **Vestry** providing a separate annexe. The **main Chapel** was constructed around 1904 of stone walls which have been rendered and dashed to the rear and side (south) elevations. The main roof is pitched slate while the rear lean-to section is monopitch slate. It is generally in good condition, has been well maintained and is well sealed. The walls are intact and the timber/uPVC framed windows and doors have no potentially exploitable gaps either in or around them. However, there are numerous wall top gaps on all elevations except the rear – especially under the flashing along the verges to the front and while the lean-to roof has only minor damage with only one or two slightly raised slates, it was not possible to fully view the main roof from outside. The **Vestry** was constructed around 1883 (and is believed to be the original chapel) of stone walls which have been part rendered and dashed and has pitched slate roofs. It is generally in good condition, has been well maintained and is well sealed. The walls are intact and the timber/uPVC framed windows and doors have no potentially exploitable gaps either in or around them. However, there are some wall top gaps as well as one or two slightly raised slates.
- ✦ On 22nd February 2023, I&G Ecological Consulting Ltd undertook a daytime bat scoping survey of the buildings at the property. A dusk emergence survey was undertaken on 6th May 2023 and a dawn re-entry survey was undertaken on 4th June 2023. The weather conditions present at the property were conducive to bat activity and access was available to all parts of the property.
- ✦ This report confirms the findings of these surveys, completed in accordance with current best practice (Collins, J. (Ed.) 2016) and conducted by experienced, licensed ecologists and assistants.
- ✦ The property is located within the village of Rhos, 2km east of the small town of Pontardawe, and 12km north-east of the city of Swansea. **It is within close proximity to favourable bat habitat but is not within 10km of any sites designated for their bat interest.**
- ✦ During the scoping survey, scattered (around 30) older droppings were found within the loft of the **main Chapel** (DNA analysis was inconclusive) but no bats or their signs were found within the **Vestry**. The property therefore has **confirmed** potential to support roosting bats and a **confirmed** risk of bats using the features present. During the surveys up to **three Soprano pipistrelle** and **one Common pipistrelle** emerged/re-entered the **main Chapel**, and these species were also detected foraging and commuting within the surroundings.
- ✦ In relation to **Roost Characterisation Assessment**, from the evidence gathered it is considered that the **main Chapel**, is being used by a **small number of non-breeding Soprano pipistrelle (four confirmed) and an individual Common pipistrelle as a summer daytime roost.**
- ✦ **Mitigation measures will need to be implemented for bats, but no evidence of nesting birds or Owl was found.** However, 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 (all nests are to be confirmed vacant before works commence). See appendix 5 for plans and appendix 9 for examples and siting advice. **The final plans to be submitted are to show all bat and bird mitigation/enhancement measures. The location of any trees for bat/bird boxes are also to be shown.**
 - ✦ **Recommendation 1 (Site Bat Enhancement):** Prior to works commencing, x 1 Harlech Woodstone (or similar) and x 1 Improved Maternity (or similar maternity box) bat boxes to be affixed to mature trees to be retained within the curtilage of the property. See [Putting up your box - Bat Boxes - Bat Conservation Trust \(bats.org.uk\)](#) for siting advice.
 - ✦ **Recommendation 2 (main Chapel Bat Mitigation):** Wall top access is to be retained along the side elevations as gaps are to be kept “as is”.
 - ✦ **Recommendation 3 (Vestry Bat Enhancement):** 1 x Beaumaris Woodstone (or similar) bat box to be affixed to the east elevation.
 - ✦ **Recommendation 4 (Site Broadscale Enhancement):** As far as possible, all mature hedgerows and trees on site are to be retained (and any lost are to be replaced with native species) to enhance wider ecological benefit and connectivity to the surrounding habitat. In addition, all new planting is to be of native species that offer benefit to wildlife. See [17 bats & hedges leaflet.pdf \(hedgelink.org.uk\)](#). Advice within [developers-1.pdf \(britishhedgehogs.org.uk\)](#) is to be followed, ensuring measures are provided ([Help a Hedgehog – The Wildlife Trust of South and West Wales \(welshwildlife.org\)](#))
 - ✦ **Recommendation 5 (Bird Enhancement):** 1 x House martin nest cup to be affixed to east elevation of the **main Chapel** and 1 x Sparrow terrace to be affixed to the north elevation of the **Vestry**. See [Where To Put A Bird Box | Nestboxes - The RSPB](#) for siting advice.

Contents

Executive summary.....	ii
1. Introduction.....	4
1.1 Scope and purpose of survey	4
1.2 Site characteristics and proposed works.....	4
2. Desk study methods and results	6
2.1 Methods.....	6
2.2 Results.....	6
3. Field survey methods and results	7
3.1 Methods.....	7
3.2 Survey results.....	8
4. Interpretation, conclusions and recommendations	10
4.1 Interpretation and conclusions	10
4.2 Recommendations.....	11
5. Outline method statement for planning and mitigation/compensation measures	13
5.1 Outline method statement for planning and mitigation/compensation measures – Chapel	13
5.2 Outline method statement for planning – Vestry	15
LIST OF FIGURES	
Figure 1: Aerial view of the property which is outlined in red.....	4
Figure 2: Map showing the wider environment.....	5
Figure 3: Site location and existing block plan	5
Figure 4: Designated sites within 2km.....	6
Figure 5: Surveyor positions during the activity surveys.....	8
Figure 6: Aerial map showing the flight lines of bats detected.....	9
LIST OF TABLES	
Table 1: Provisional timetable of works	14
LIST OF APPENDICES	
Appendix 1: An introduction to bat surveys.....	16
Appendix 2: Overview of the legislation	18
Appendix 3: Types of bat roost and survey timings	21
Appendix 4: List of surveyors.....	23
Appendix 5: Site plans	24
Appendix 6: Site survey images	25
Appendix 7: Roost status and mitigation	29
Appendix 8: Roost compensation & enhancement measures.....	30
Appendix 9: I&G Ecological Consulting Ltd legal disclaimer	33
Appendix 10: References, bibliography, and sources of information	34

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 The Former Ebenezer Chapel (the property) is located within the village of Rhos, 2km east of the small town of Pontardawe, and 12km north-east of the city of Swansea. Despite its position within a predominantly residential area, it is located within close proximity to favourable bat habitat, with the cemetery immediately to the rear and many of the surrounding properties having mature gardens. an Ancient Woodland Site just to the east and further small woodlands – including ancient woodland – within 2km in all directions. There are also small agricultural fields (predominantly semi-improved and improved) surrounding the property with mature hedgerows that provide good connectivity. In addition, there are more unimproved areas such as the species rich grasslands and wet pastures of Cilybebyll Site of Special Scientific Interest (SSSI) to the north as well as Fforest Goch Bog SSSI to the south. In relation to watercourses, the partially wooded river corridor of the Afon Clydach is 250m to the east, the Afon Tywi is 1.5km to the north-west, and the Swansea Canal is 1.8km to the north-west.



1.2.2 The property is subject to proposed plans for conversion of the **main Chapel** to a dwelling and extension, with the **Vestry** providing a separate annexe. Figure 1 shows an aerial view of the property, figure 2 on the following page shows the wider environment and figure 3 is a site location and existing block plan. A larger version of the plan is included in appendix 5.

Figure 1: Aerial view of the property which is outlined in red (from Apple® Maps)



Figure 2: Map showing the wider environment. The property is indicated by a blue dot. (from Apple® Maps)

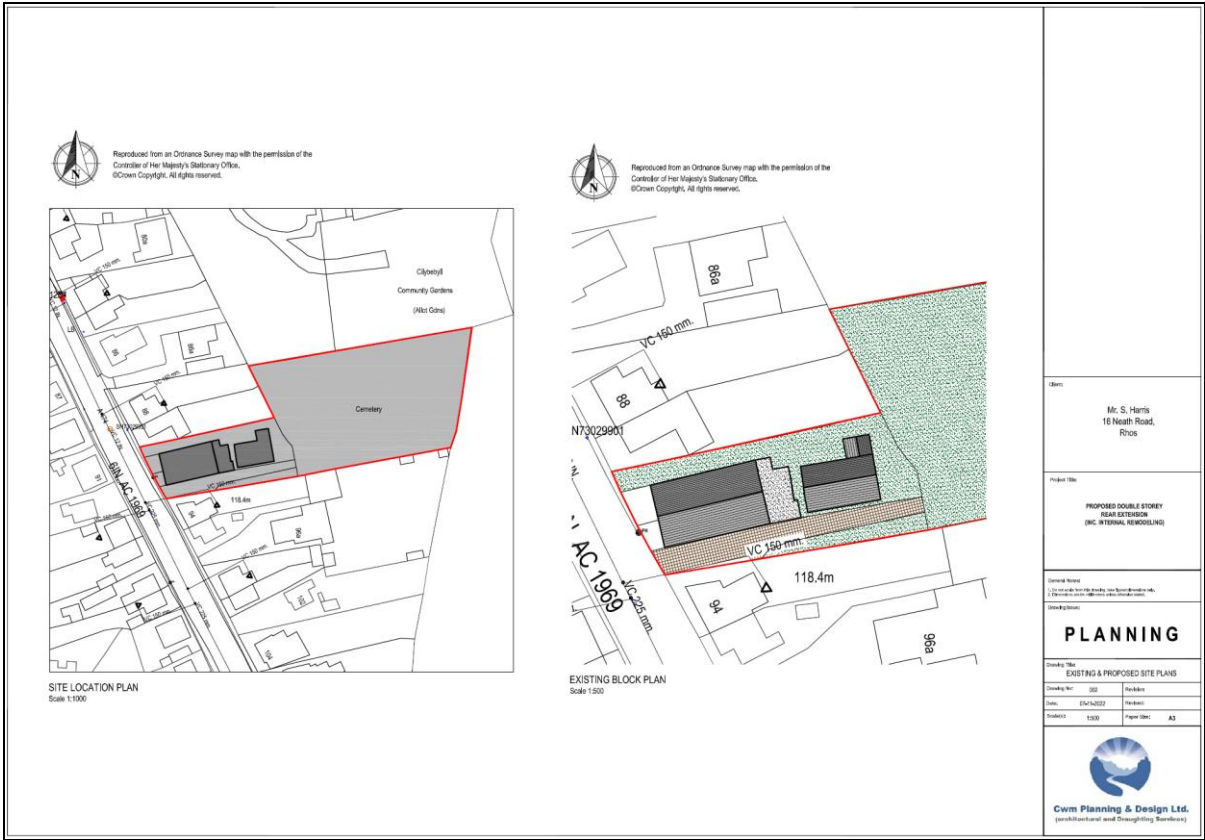


Figure 3: Site location and existing block plan (provided by the architect)

2. Desk study methods and results

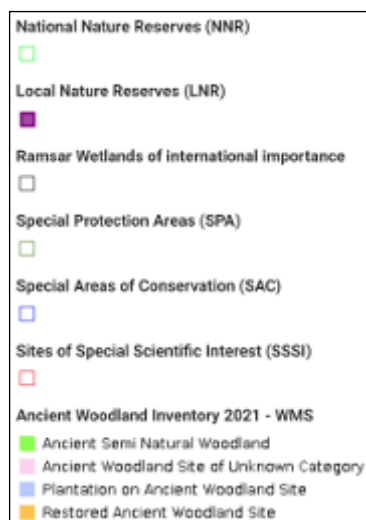
2.1 Methods

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 The property is not within or adjacent to any sites which are designated for their ecological significance. Within 2km, 640m to the south-west is Fforest Goch Bog SSSI which is not designated for its bat interest. Within 2km there are also 20+ areas of Ancient Semi Natural Woodland (ASNW), four Restored Ancient Woodland Sites, and four Plantations on Ancient Woodland Sites; the closest being an ASNW 440m to the south-west as well as one Wildlife Trust Site (Craig Cilhendre Woods 2km to the west). However, there are no Local or National Nature Reserves within 2km of the property while information on Sites of Importance for Nature Conservation/Local Wildlife Sites within Neath Port Talbot can only be accessed through a formal LRC search (a search was undertaken – see 2.2.2 – but the search type did not include the provision of this data). In relation to sites within 10km that are designated for their bat interest, there are no such sites. 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 conducted in August 2023 reported 112 records for the following eight species within 2.6km:

- **Common pipistrelle (*Pipistrellus pipistrellus*):** 37 records, the closest being a 2010 record from 66m away.
- **Soprano pipistrelle (*Pipistrellus pygmaeus*):** 14 records, the closest being a 2010 record from 346m away.
- ***Pipistrellus* species:** 19 records, the closest being a 2006 roost record from just over 1km away.

- **Unknown bat (*Chiroptera*):** 14 records, the closest being a 2010 record from 457m away.
- ***Myotis* species:** eight records, the closest being a 2011 record from 716m away.
- **Brown long-eared (*Plecotus auritus*):** five records, the closest being a 2007 record from 928m away.
- **Serotine (*Eptesicus serotinus*):** one 2015 record from 935m away.
- **Daubenton's (*Myotis daubentonii*):** three records, the closest being a 2015 record from 935m away.
- **Leisler's (*Nyctalus leisleri*):** one 2015 record from 935m away.
- **Noctule (*Nyctalus noctula*):** seven records, the closest being a 2015 record from 935m away.
- **Natterer's (*Myotis nattereri*):** three records, the closest being two 2008 roost records from just under 1.1km away.
- There were also two records for **Barn owl (*Tyto alba*)** within 700m.

2.2.4 An online search reported no previous applications for the property nor any applications within the postcode for which a Bat Survey Report is known to have been produced. A 2021 Bat Survey Report produced by I&G Ecological Consulting Ltd for a property within 900m to the north-east reported foraging and commuting records for *P. pipistrellus*, *P. pygmaeus*, *Myotis species*, and *N. noctula*.

3. Field survey methods and results

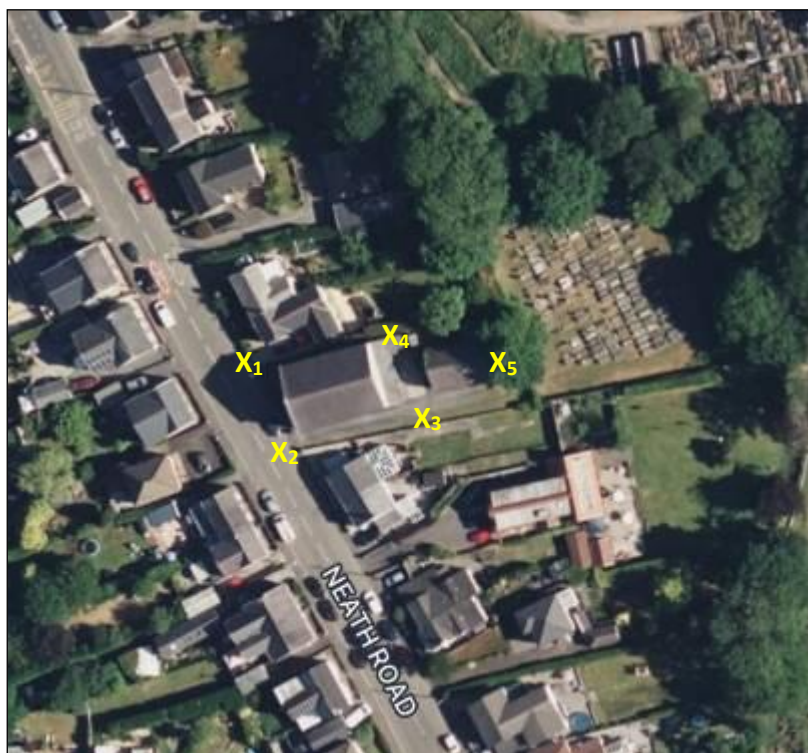
3.1 Methods

3.1.1 A Preliminary Roost Assessment (PRA) was undertaken on 22nd February 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 In relation to survey limitations, many of the UK species of bat are crevice dwelling, and bats or signs of bats can be difficult to find within a building. In addition, there may be areas that are inaccessible to the surveyor. Externally, sufficient access was available to enable a thorough survey from ground level, noting that the height of the **main Chapel** made it difficult to fully observe the roof while the **Vestry** has a lot of vegetation coverage. Internally, access was available to all areas. In addition, two activity surveys were undertaken in good weather conditions to understand how bats may be using the surrounding area. Using the equipment available, all accessible areas were thoroughly surveyed to maximise effectiveness.

3.1.3 One dusk emergence survey and one dawn re-entry survey were undertaken. The dusk survey was undertaken on 6th May 2023 and the surveyors were Glyn Lloyd-Jones, Iestyn Evans, Greg Evans, Megan Hill, and Bonnie Illingworth. Sunset was at 20:47, the survey started at 20:30 and ended at 22:45. The weather remained dry throughout the survey but was cloudy (75%) at the start, humidity was around 85%, there was a light westerly wind of 3mph, and the temperature started at 15.9°C and ended at 13.3°C.

3.1.4 The dawn survey was undertaken on 4th June 2023 and the surveyors remained as for the dusk survey. Sunrise was at 05:00 the survey started at 03:00 and ended at 05:05. The weather remained dry throughout the survey with 40% cloud at the end, humidity was around 70%, there was a light north-easterly breeze of 2mph, and the temperature started at 15.4°C and ended at 14.8°C.



3.1.5 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 surveys.**

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

3.2 Survey results

3.2.1 The PRA found that the property comprises a large, detached, two-storey (plus loft), west facing, former **main Chapel** which has a single-storey lean-to section to the rear as well as a detached, single storey (no loft) **Vestry** to the rear. It is subject to proposed plans for conversion to a dwelling with the **main Chapel** also having a rear extension and the **Vestry** providing a separate annexe.

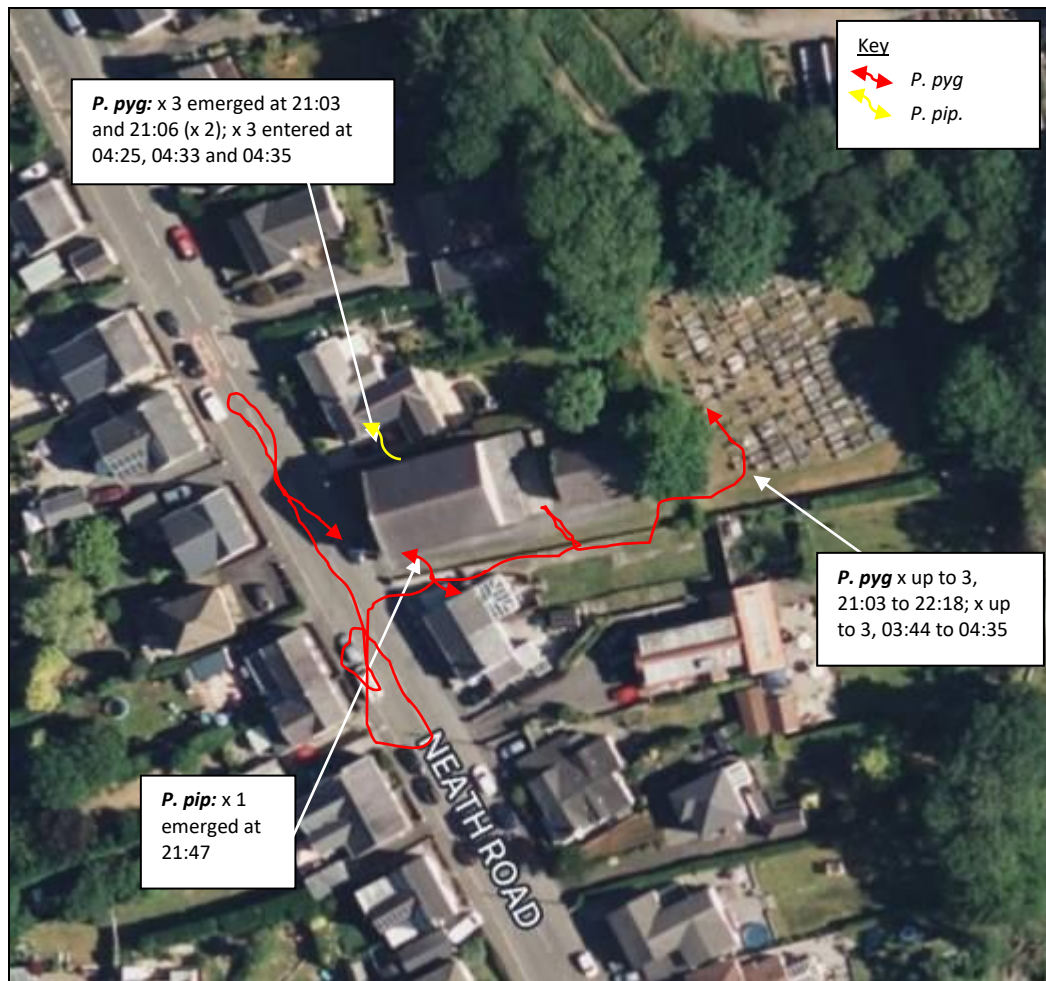
- The **main Chapel** was constructed around 1904 of stone walls which have been rendered and dashed to the rear and side (south) elevations. The main roof is pitched slate while the rear lean-to section is monopitch slate. It is generally in good condition, has been well maintained and is well sealed. The walls are intact and the timber/uPVC framed windows and doors have no potentially exploitable gaps either in or around them. However, there are numerous wall top gaps on all elevations except the rear – especially under the flashing along the verges to the front and while the lean-to roof has only minor damage with only one or two slightly raised slates, it was not possible to fully view the main roof from outside. Internally, within the loft of the **main Chapel** there were no obvious gaps within either the roofs or at wall tops which could facilitate access into the loft space. In addition, the vent on the rear elevation is boarded up internally. However, there are dark, sheltered areas with crevices that could offer roosting opportunities as well as timber frames which could offer opportunities for free hanging bats and careful inspection of all items and surfaces found a very small number of scattered (friable) droppings on the floor. These were older and grey and DNA analysis was inconclusive due to their age.
- The **Vestry** was constructed around 1883 (and is believed to be the original chapel) of stone walls which have been part rendered and dashed and has pitched slate roofs. It is generally in good condition, has been well maintained and is well sealed. The walls are intact and the timber/uPVC framed windows and doors have no potentially exploitable gaps either in or around them. However, there are some wall top gaps as well as one or two slightly raised

slates. Internally, there is no loft space and there were no signs of the presence of bats (e.g. live or dead bats, urine stains, smell, droppings) anywhere internally or externally.

As a result of all the findings of the previous report, the north and south wall tops of the **main Chapel** are **confirmed** to support roosting bats and are **confirmed** as using those features, while the **Vestry** has **low to moderate** potential to support roosting bats and a **low to moderate** risk of bats using the features present. Site survey images are included in appendix 6.

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

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



06/05/2023: Sunset was at 20:47, the survey started at 20:30 and ended at 22:45

04/06/2023: Sunrise was at 05:00 the survey started at 03:00 and ended at 05:05

- ***P. pipistrellus***: During the dusk survey an individual bat was seen to leave a wall top gap on the south elevation of the **main Chapel** at sunset and fly off to the north. No further activity was detected on site on either survey but calls were heard towards the cemetery to the rear for the first half of the dusk survey as well as between 80 and 65 minutes before sunrise on the dawn survey.
- ***P. pygmaeus***: During the dusk survey three bats were seen to leave a wall top gap on the north elevation of the **main Chapel** between 16 and 19 minutes after sunset. Bats were then detected foraging and commuting on site until 91 minutes after sunset, with the focus of activity being towards the cemetery to the rear. No further bats were observed but occasional calls were heard to the east and south during the second half of the survey. During the dawn survey

occasional passes were detected on site from around 76 minutes before sunrise and three bats were seen to enter the same gap between 35 and 25 minutes before sunrise.

3.2.3 Flight activity summary: During the activity surveys up to three *P. pygmaeus* and one *P. pipistrellus* were seen to either leave or enter wall top gaps to the north and south of the **main Chapel**, and these species were also detected foraging and commuting on site.

3.2.4 No evidence of nesting birds (including Owl) was discovered.

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 designated for their bat interest.**

4.1.2 Roost Characterisation Assessment: from the evidence gathered it is considered that the **main Chapel wall tops** are being used as a **summer day** roost by a **small number of *P. pygmaeus* (three confirmed) and an individual *P. pipistrellus*.** A summary of the evidence is as follows:

- ***P. pipistrellus*:** There are no sites within 10km that are designated for this species, but there are records from within 2km as well as our own data within 1km. No live or dead bats were found but scattered (around 20-30) older droppings were found within the loft of the **main Chapel**. These were sent for DNA analysis but this proved inconclusive due to their degree of degradation. During the dusk survey an individual bat was seen to leave a wall top gap on the south elevation of the **main Chapel** at sunset and fly off to the south. No further activity was detected on site on either survey but calls were heard towards the cemetery to the rear for the first half of the dusk survey as well as between 80 and 65 minutes before sunrise on the dawn survey. The activity survey evidence confirms that a roost is still present, but due to the low numbers of bats and lack of other signs it is considered extremely unlikely that it is a maternity roost, and it is concluded that the property (specifically the **main Chapel**) wall tops are being used as a **summer day roost for an individual bat** of this species.
- ***P. pygmaeus*:** There are no sites within 10km that are designated for this species, but there are records from within 2km as well as our own data within 1km. No live or dead bats were found but scattered (around 20-30) older droppings were found within the loft of the **main Chapel**. These were sent for DNA analysis but this proved inconclusive. During the dusk survey three bats were seen to leave a wall top gap on the northern elevation of the **main Chapel** between 16 and 19 minutes after sunset. Bats were then detected foraging and commuting on site until 91 minutes after sunset, with the focus of activity being towards the cemetery to the rear. No further bats were observed but occasional calls were heard to the east and south during the second half of the survey. During the dawn survey occasional passes were detected on site from around 76 minutes before sunrise and three bats were seen to enter the same gap between 35 and 25 minutes before sunrise. The activity survey evidence confirms that a roost is still present, but due to the low numbers of bats and lack of other signs it is considered very unlikely that it is a maternity roost, and it is concluded that the wall tops (specifically of the **main Chapel**) are being used as a **summer day roost for a small number (three confirmed)** of bats of this species.

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) were used, and focus was placed upon the need for appropriate – but proportionate – mitigation.

- ***P. pygmaeus*** and ***P. pipistrellus*** are considered to be common bat species and are species of Least Concern on the IUCN Red List of Threatened species but they are UK priority bat species. Nationally, they are a priority species (***P. pipistrellus*** in Wales only) and have been the subject of a Species Action Plan under the UK Biodiversity Action Plan, the populations are considered to be stable and their conservation status is favourable. As a result, the roosts at the site are considered to be of low conservation significance. See appendix 8 which shows roost status and resulting mitigation/compensation requirements. Using this it can be considered that the proposed mitigation is considered suitable as it provides bat boxes on the new dwellings as well 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 by those species considered to be roosting, ***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. These species have a relatively flexible winter hibernation strategy and will fly when the weather is mild. They will also use bat boxes to hibernate. It is therefore considered that there is **moderate** potential for this bat species to be hibernating in the property. 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. pygmaeus*** and ***P. pipistrellus*** can crawl into roosts via small gaps in the range of 15–20mm high by 20–50mm wide. The roost area should maintain a crevice of this approximate size gap that the bats can roost between. The area this roost provision covers can be small but about 1m² would be useful for summer nursery roosts. The height of entry can be from 2–7m. The roosting area should not be trussed, to allow flight, and should ideally (wherever 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 damage/destruction of bat roosts for two species of bat as well as the potential disturbance, killing and/or injury of bats. Destruction of a roost is an absolute offence under the above legislation and **therefore, an EPS derogation licence must be obtained from Natural Resources Wales for the works to be legally undertaken on or near the wall tops of the main Chapel at the property. Presently NO works are planned to the roof, wall tops, internal ceiling or soffits/fascia boards – so no licence is necessary, however, should the plans alter to include any works to the roof area/wall tops then a derogation licence MUST BE GAINED PRIOR TO WORKS COMMENCING.**

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

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

4.2 Recommendations

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

4.2.2 ***P. 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. Recommendations are as follows **Plans for the location of all bat/bird provision are to be submitted along with details of proposed external lighting provision:**

- ✧ **Recommendation 1 (Site Bat Enhancement):** Prior to works commencing, x 1 Harlech Woodstone (or similar) and x 1 Improved Maternity (or similar maternity box) bat boxes to be affixed to mature trees to be retained within the curtilage of the property. See [Putting up your box - Bat Boxes - Bat Conservation Trust \(bats.org.uk\)](#) for siting advice.
- ✧ **Recommendation 2 (main Chapel Bat Mitigation):** Wall top access is to be retained along the side elevations as gaps are to be kept “as is”.
- ✧ **Recommendation 3 (Vestry Bat Enhancement):** 1 x Beaumaris Woodstone (or similar) bat box to be affixed to the east elevation.
- ✧ **Recommendation 4 (Site Broadscale Enhancement):** As far as possible, all mature hedgerows and trees on site are to be retained (and any lost are to be replaced with native species) to enhance wider ecological benefit and connectivity to the surrounding habitat. In addition, all new planting is to be of native species that offer benefit to wildlife. See [17 bats & hedges leaflet.pdf \(hedgelink.org.uk\)](#). Advice within [developers-1.pdf \(britishhedgehogs.org.uk\)](#) is to be followed, ensuring measures are provided ([Help a Hedgehog – The Wildlife Trust of South and West Wales \(welshwildlife.org\)](#))
- ✧ **Recommendation 5 (Bird Enhancement):** 1 x House martin nest cup to be affixed to east elevation of the **main Chapel** and 1 x Sparrow terrace to be affixed to the north elevation of the **Vestry**. See [Where To Put A Bird Box | Nestboxes - The RSPB](#) for siting advice.

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. Evidence of nesting birds was found and any nests found must be confirmed vacant before work commences. Recommendations are as follows:

- ✧ **Recommendation 4 (Site Broadscale Enhancement):** As far as possible, all mature hedgerows and trees on site are to be retained (and any lost are to be replaced with native species) to enhance wider ecological benefit and connectivity to the surrounding habitat. In addition, all new planting is to be of native species that offer benefit to wildlife. See [17 bats & hedges leaflet.pdf \(hedgelink.org.uk\)](#). Advice within [developers-1.pdf \(britishhedgehogs.org.uk\)](#) is to be followed, ensuring measures are provided ([Help a Hedgehog](#)

– [The Wildlife Trust of South and West Wales \(welshwildlife.org\)](http://TheWildlifeTrustofSouthandWestWales.org)

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 04/06/2025 (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 further disrepair.

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

5.1 Outline method statement for planning and mitigation/compensation measures – main Chapel

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 (**IF ANY works are planned to the roof, internal ceilings or wall tops**); this will inform the ecologist undertaking the licensing work. If bats (other than those licenced for) 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 (if a licence is needed) to outline the status of the building, conditions of the licence and Method Statement. High risk works (near the roof or wall tops) 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 a leave/enter x 2 wall top gaps to the west elevation of the **main Chapel**, it is always possible that they may be using other areas of the building.

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

Maintaining bat roost provision

5.1.6 As per **recommendation 1 (Site Bat Enhancement)**, **Recommendation 1 (Site Bat Enhancement)**: Prior to works commencing, x 1 Harlech Woodstone (or similar) and x 1 Improved Maternity (or similar maternity box) bat boxes to be affixed to mature trees to be retained within the curtilage of the property. See [Putting up your box - Bat Boxes - Bat Conservation Trust \(bats.org.uk\)](http://Puttingupyourbox-BatBoxes-BatConservationTrust.org.uk) for siting advice. In addition, as per **recommendation 2 (main Chapel Bat Mitigation)**, Wall top access is to be retained along the side elevations as gaps are to be kept “as is”. Further, as per **recommendation 3 (Vestry Bat Enhancement)**: 1 x Beaumaris Woodstone (or similar) bat box to be affixed to the east elevation.

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.

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 area of the property. This includes works to the site subject to development which may impact on these areas. Works may commence on the main chapel (but not at wall top, ceiling or roof area) Vestry. Recommendation 1 (Site Bat Enhancement): Prior to works commencing, x 1 Harlech Woodstone (or similar) and x 1 Improved Maternity (or similar maternity box) bat boxes to be affixed to mature trees to be retained within the curtilage of the property. See Putting up your box - Bat Boxes - Bat Conservation Trust (bats.org.uk) for siting advice. <i>The above are all to be inspected by the named ecologist on the EPS (Bats) Licence prior to any licensable works commencing-if works are planned to the roof or roof area.</i>
1	From receipt of EPS licence	- Toolbox talks. - If works are to commence within the active bat season a dawn activity survey will be undertaken immediately prior to works commencing. <i>Works to be completed under licence:</i> - Ecologist to be on site to check when all works that will impact upon the roosts (wall tops) is taking place <i>i.e., works to the roof</i> and roofware of the main Chapel and the potential blocking up of any gaps. Recommendation 2 (main Chapel Bat Mitigation): Wall top access is to be retained along the side elevations as gaps are to be kept “as is”. <i>Mitigation and enhancement measures to be completed once demolition has been completed:</i> Recommendation 3 (Vestry Bat Enhancement): 1 x Beaumaris Woodstone (or similar) bat box to be affixed to the east elevation. Recommendation 4 (Site Broadscale Enhancement): As far as possible, all mature hedgerows and trees on site are to be retained (and any lost are to be replaced with native species) to enhance wider ecological benefit and connectivity to the surrounding habitat. In addition, all new planting is to be of native species that offer benefit to wildlife. See 17 bats & hedges leaflet.pdf (hedgelink.org.uk). Advice within developers-1.pdf (britishhedgehogs.org.uk) is to be followed, ensuring measures are provided (Help a Hedgehog – The Wildlife Trust of South and West Wales (welshwildlife.org)) Recommendation 5 (Bird Enhancement): 1 x House martin nest cup to be affixed to east elevation of the main Chapel and 1 x Sparrow terrace to be affixed to the north elevation of the Vestry. See Where To Put A Bird Box Nestboxes - The RSPB for siting advice.
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 <i>if any works to the roof are planned</i> thus triggering the need for a licence from NRW..

5.1.8 Current **lighting** plans for the site are not known but should any be proposed, they must ensure that exterior lighting is kept to a minimum to prevent any adverse impacts on bats. In particular, external lighting around the recommended enhancement must be carefully designed to avoid any impact upon bats (Institution of Lighting Professionals, Guidance Note GN08/23). Any external lighting scheme proposed for this application must comply with the lighting principles outlined within the guidance referenced above. See appendix 2 for additional information.

5.1.9 Where **external lighting** is necessary, this should utilise a number of key design points to limit any impact, as follows: Low level lighting pointed towards the ground; LED bulbs to be used of 2700 Kelvin (*p.29 of the lighting guidelines referenced above*) and below (warm white light and not daylight); use of light shields and hoods to direct the light downwards and prevent vertical and horizontal light spill; and use of passive infrared (PIR) motion sensors on timers to ensure lights only come on when necessary, especially important for the more light sensitive bat species such as horseshoe bats.

5.1.10 Habitat. There are no known plans to significantly alter the 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 are to be replaced with native species) to enhance wider ecological benefit and connectivity to the surrounding habitat. In addition, all new planting is to be of native species that offer benefit to wildlife. See [17 bats & hedges leaflet.pdf \(hedgelink.org.uk\)](#). Advice within [developers-1.pdf \(britishhedgehogs.org.uk\)](#) is to be followed, ensuring measures are provided ([Help a Hedgehog – The Wildlife Trust of South and West Wales \(welshwildlife.org\)](#)).

5.1.11 Monitoring. Once works are complete, a monitoring check will be undertaken to confirm bat access points have been provided correctly.

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

5.2 Outline method statement for planning – Vestry

5.2.1 **No bats** were detected utilising the **Vestry**, and there are no restrictions on the timing of the work in relation to bats. Where proposed plans involve works to the roof(s) extra care will be taken at wall tops and when stripping any part of the roof(s). All materials are to be lifted and not slid as – despite a negative survey – bats can still be found in these areas and they are known to be using the adjacent **main Chapel**. **If bats are found at any stage, all works will stop and a qualified ecologist called for advice and guidance.** As no bats or bat signs were detected at the property, no monitoring is proposed (Mitchell-Jones, 2004 – figure 4, page 39).

5.2.2 See 5.1.8 and 5.1.9 above for lighting specification to be followed.

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 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.

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

Appendix 3: Types of bat roost and survey timings

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.

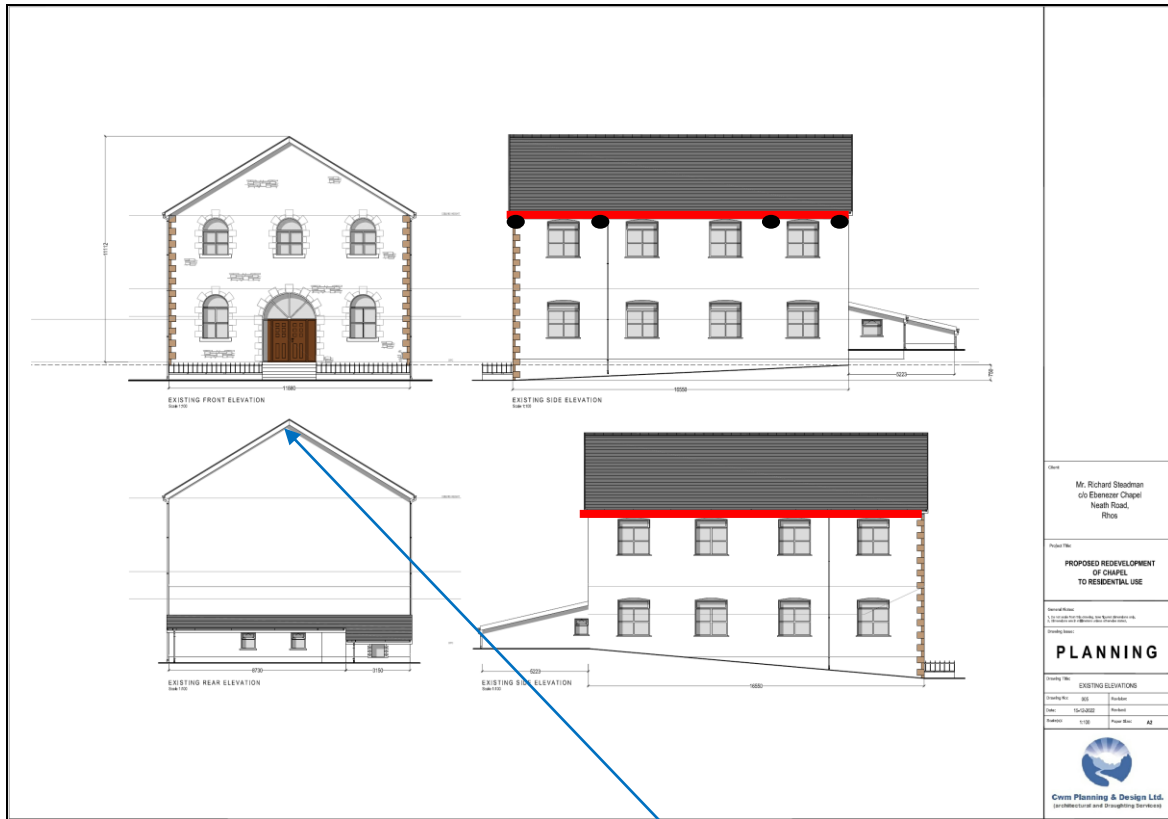
- *Bats needing a flying area* require the same access dimension as mentioned above, 15–20mm (h) x 20–50mm (w) situated over 2m in height. The roosting area should not be trussed, to allow flight, and should ideally (wherever possible) be of similar dimensions to the roost being replaced.

- *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.

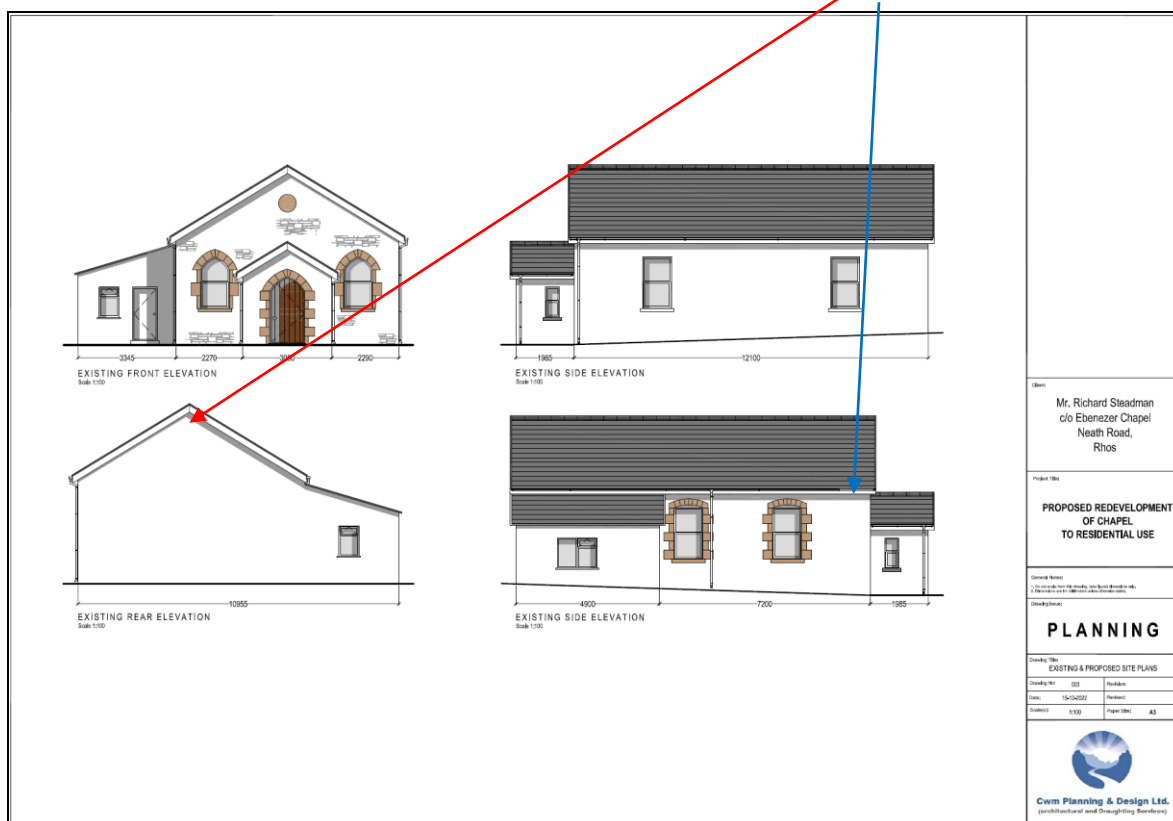
Appendix 4: List of surveyors

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.
Ms Megan Hill	Trainee	Megan provides survey and report writing support and has a keen eye for detail. She is currently utilising any opportunity to broaden her experience in conservation and ecology and further develop her strong interests in animal behaviours and movements. She is an active member of the Warwickshire Bat Group and a valued team member at I&G.
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.

Appendix 5: Site plans



Above: main Chapel elevations. The recommended locations for retention of bat access on the south and north elevation is shown by a red line with access points shown by black dots, and the recommended location for the House martin nest cup on the east elevation is shown by a blue arrow. **Below: Vestry elevations.** The recommended location for the bat box on the east elevation is shown by a red arrow and the recommended location for the Sparrow terrace on the north elevation is shown by a blue arrow.



Appendix 6: Site survey images





The walls are intact and the timber/uPVC framed windows and doors have no potentially exploitable gaps either in or around them. However, there are numerous wall top gaps on all elevations except the rear – especially under the flashing along the verges to the front and while the lean-to roof has only minor damage with only one or two slightly raised slates, it was not possible to fully view the main roof from outside.



Internally, within the loft of the **main Chapel** there were no obvious gaps within either the roofs or at wall tops which could facilitate access into the loft space. In addition, the vent on the rear elevation is boarded up internally. However, there are dark, sheltered areas with crevices that could offer roosting opportunities as well as timber frames which could offer opportunities for free hanging bats and careful inspection of all items and surfaces found a small number of scattered and friable droppings on the floor. These were older and grey and DNA analysis was inconclusive. The

roof was in excellent condition, as were the timbers suggesting they may have been replaced within last few years.



The **Vestry** was constructed around 1883 (and is believed to be the original chapel) of stone walls which have been part rendered and dashed and has pitched slate roofs. It is generally in good condition, has been well maintained and is well sealed. The walls are intact and the timber/uPVC framed windows and doors have no potentially exploitable gaps either in or around them. However, there are some wall top gaps as well as one or two slightly raised slates. Internally, there is no loft space and there were no signs of the presence of bats (e.g. live or dead bats, urine stains, smell, droppings) anywhere internally or externally.

Appendix 7: 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	Roost status	Mitigation/compensation requirement (depending on impact)
Low 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 8: Roost compensation & enhancement measures

Mitigation and enhancement recommendations:

- ✦ **Recommendation 1 (Site Bat Enhancement):** Prior to works commencing, x 1 Harlech Woodstone (or similar) and x 1 Improved Maternity (or similar maternity box) bat boxes to be affixed to mature trees to be retained within the curtilage of the property. See [Putting up your box - Bat Boxes - Bat Conservation Trust \(bats.org.uk\)](http://bats.org.uk) for siting advice.
- ✦ **Recommendation 2 (main Chapel Bat Mitigation):** Wall top access is to be retained along the side elevations as gaps are to be kept “as is”.
- ✦ **Recommendation 3 (Vestry Bat Enhancement):** 1 x Beaumaris Woodstone (or similar) bat box to be affixed to the east elevation.
- ✦ **Recommendation 4 (Site Broadscale Enhancement):** As far as possible, all mature hedgerows and trees on site are to be retained (and any lost are to be replaced with native species) to enhance wider ecological benefit and connectivity to the surrounding habitat. In addition, all new planting is to be of native species that offer benefit to wildlife. See [17 bats & hedges leaflet.pdf \(hedgelink.org.uk\)](#). Advice within [developers-1.pdf \(britishhedgehogs.org.uk\)](#) is to be followed, ensuring measures are provided ([Help a Hedgehog – The Wildlife Trust of South and West Wales \(welshwildlife.org\)](#))
- ✦ **Recommendation 5 (Bird Enhancement):** 1 x House martin nest cup to be affixed to east elevation of the main Chapel and 1 x Sparrow terrace to be affixed to the north elevation of the Vestry. See [Where To Put A Bird Box | Nestboxes - The RSPB](#) for siting advice.

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.

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

Right: The Beaumaris Bat Box is made from 100% WoodStone



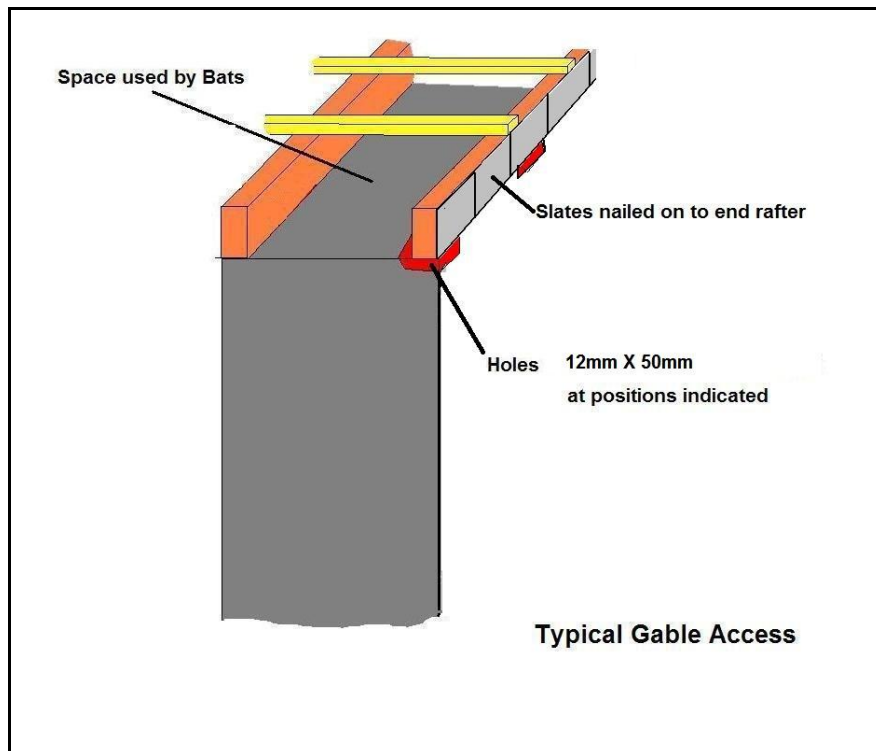
Lack of sunlight can cause bat box/house failure, and structures for summer roosting should be positioned where they are unshaded for most of the day. Summer maternity roosts (in the northern hemisphere) should have a southerly or westerly aspect.



Left: The Improved Roost-Maternity Bat box is a large 3 crevice box suitable for larger roosts or maternity groups of the small British crevice-dwelling bats such as Pipistrelles. See [Improved Roost-Maternity Bat Box | NHBS Practical Conservation Equipment](#).

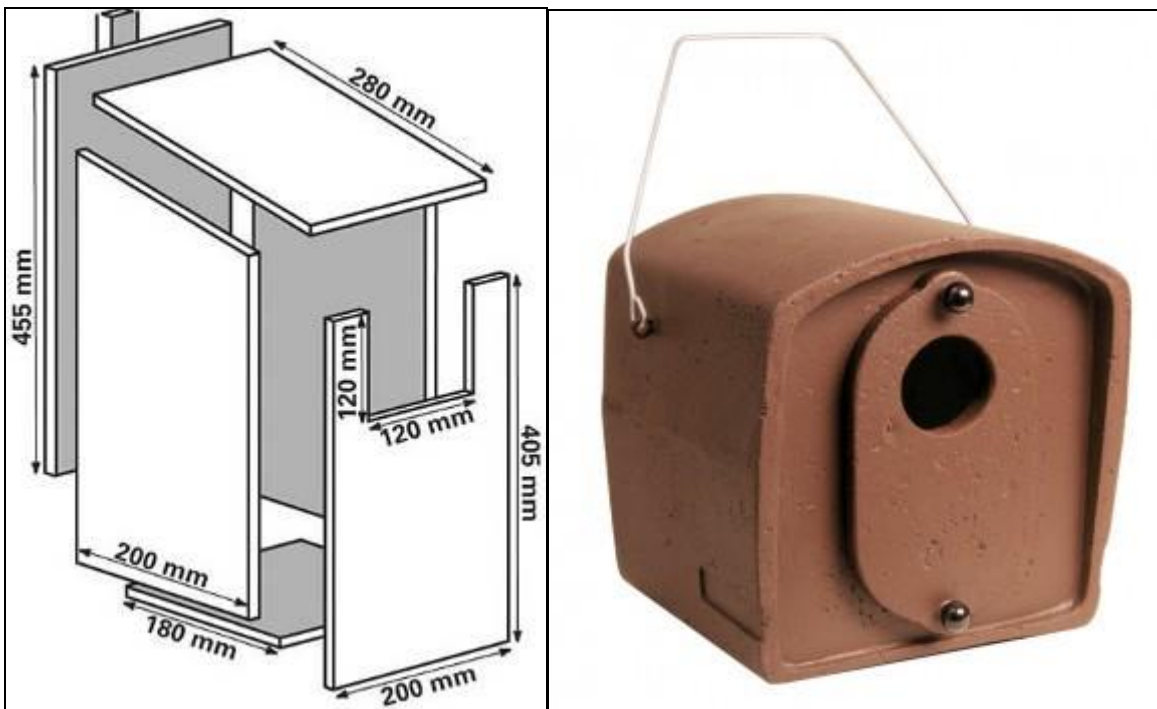
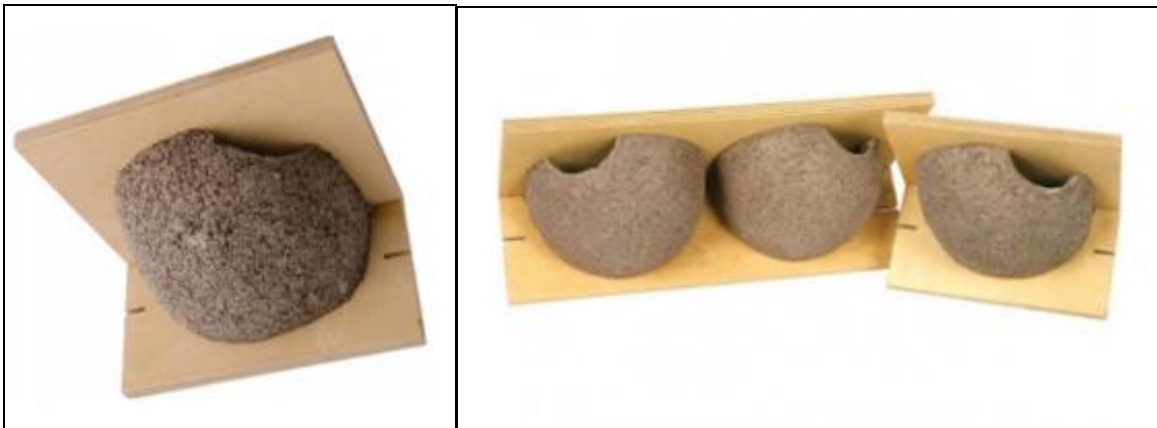


Above: Soffit gap examples



Example of gable access

Examples of Sparrow terraces (top), House martin nest cups (middle), and Jackdaw (also suitable for Tawny owl when the hole is 12cm) nest boxes. Siting advice can be found at [Where To Put A Bird Box | Nestboxes - The RSPB](#)



Appendix 9: 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 10: References, bibliography, and sources of information

- Bat Conservation Trust, 2010. Bats in Buildings. *Bats and the Built Environment Series: Volume 1*.
- British Standards Institute, BS42020:2013. Biodiversity. Code of practice for planning and development. London, UK.
- British Standards Institute, BS8596:2015. *Surveying for Bats in Trees and Woodland*. London, UK.
- CIEEM (2017) Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.
- Collins, J (ed.), 2016. *Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd Ed*. The Bat Conservation Trust. London.
- Council of Europe, 1979. *Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention)*. Strasbourg.
- Council of Europe, 1979. *The Convention on the Conservation of Migratory Species of Wild Animals (the Bonn Convention)*. Strasbourg.
- DataMapWales. Retrieved from www.datamapwales.gov.uk
- Dietz, C., von Helversen, O., Nill, D., 2009. *Bats of Britain, Europe, and Northwest Africa*. A. & C. Black, London.
- HM Government, 2000. *Countryside and Rights of Way (CROW) Act*. HMSO. London.
- HM Government, 2009. *Environmental Damage (Prevention and Remediation) Regulations*. HMSO. London.
- HM Government, 2006. *Natural Environment and Rural Communities Act*. HMSO. London
- HM Government, 2010 (as amended 2017). *The Conservation of Habitats and Species Regulations*. HMSO. London.
- HM Government, 1981. *The Wildlife and Countryside Act 1981 (as Amended)*. HMSO. London.
- Institution of Lighting Professionals, 2023. *Bats and Artificial Lighting: Bats and the Built Environment Series. Guidance Note 08/23*. ILP, Rugby.
- Mitchell-Jones, A.J., 2004a. *Bat Mitigation Guidelines*. English Nature, Peterborough.
- Mitchell-Jones, A.J., & McLeish, A.P. Ed., 2004. *3rd Edition Bat Workers' Manual*. English Nature, Peterborough.
- Mitchell-Jones, A.J., Cooke, A.S., Boyd, I.L., Stebbings, R.E., 1989. Bats and remedial timber treatment chemicals a review. *Mammal Rev.* **19**, pp 93–110.
- Morris, P.A., 1993. *A Red Data Book for British Mammals*. The Mammal Society, London.
- Waring, S. D., Essah, E. A., Gunnell, K., Bonser, R. H. C., 2013. Double Jeopardy: The Potential for Problems when Bats Interact with Breathable Roofing Membranes in the United Kingdom. *Architecture and Environment*.
- Welsh Government, 2021. Planning Policy Wales. 11th ed. Retrieved from https://gov.wales/sites/default/files/publications/2021-02/planning-policy-wales-edition-11_0.pdf
- Welsh Government, 2021. Future Wales: the National Plan 20:40. Retrieved from <https://gov.wales>
- Welsh Government, 2016. *Environment (Wales) Act*. Welsh Government. Cardiff.
- Welsh Government, 2009. *Technical Advice Note (TAN) 5, Nature Conservation and Planning*. Welsh Government. Cardiff.
- Welsh Government, 2003. *List of Species and Habitats of Principal Importance for the Conservation of Biological Diversity*. Welsh Government. Cardiff.
- Williams, C., 2010. *Biodiversity for low and zero carbon buildings: a technical guide for new build*. RIBA Pub., London.