I&G Ecological Consulting

Former Bodlondeb Care Home, Penparcau, Aberystwyth, Ceredigion, SY23 1SJ

Bat Survey Report for WWHA

A European Protected Species Licence will not be required

for this development to be undertaken

Report type	Bat Survey Report
Report reference	IG2023FormerBodlondebCareHome
Site	Former Bodlondeb Care Home, Penparcau, Aberystwyth, Ceredigion, SY23 1SJ
Grid reference	SN 59246 80179
Client	WWHA
Date(s)/time(s)/ type(s) of survey(s)	**Scoping survey:** 5th May 2023 by Ecological Services Ltd **1st Dawn re-entry survey:** 25th June 2023 between 02:50 and 05:00 **1st Dusk emergence survey:** 25th June 2023 between 21:20 and 23:40 **2nd Dawn emergence survey:** 9th July 2023 between 03:05 and 05:05 **2nd Dusk emergence survey:** 9th July 2023 between 21:15 and 23:35
Surveyor details	**Dawn re-entry & dusk emergence surveys:** Mr Iestyn Evans, Natural Resources Wales Licence number S090746/1; Mr Glyn Lloyd-Jones, Natural Resources Wales Licence number S091520/1; Mr Greg Evans; Ms Bonnie Illingworth; Mr Mike Jones; and Miss Ceri Daugherty, Natural Resources Wales Licence number S092522/1
Architect	Asbri Planning Ltd

Version	Status	Changes	Name	Position	Date
1	**Draft**	Sent for review on 18/09/2023	Ceri Daugherty	Author	18/09/23

	Name	Position	Date
Reviewed by	Glyn Lloyd-Jones	Director	21/09/2023
Approved by	Iestyn Evans	Director	21/09/2023
Sent to Client	Iestyn Evans	Director	22/09/2023

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Executive summary

- The Former Bodlondeb Care Home (the property) is a substantial, detached, brick-built building which is two storeys in height with a single pitch metal roof. There are uPVC fasciae and barge boards present and timber soffits. There is likely to be a cavity wall in the building. Due to the condition of the former care home, there were a number of opportunities present for bats to access and use the building and those that were available were deemed as having moderate potential for roosting bats. There were apertures around an area of pipe to the eastern elevation of the building; apertures between the soffits and walls all the way around the building and apertures between the barge boards and walls.
- On 5th May 2023 Ecological Services Ltd undertook a daytime scoping survey. As a result of the findings, I&G Ecological Consulting Ltd were commissioned to undertake activity surveys. To meet the recommendations of the scoping survey, dawn re-entry and dusk emergence surveys were undertaken on 25th June 2023 and 9th July 2023. The weather conditions were conducive to bat activity and access was available to all areas.
- This report confirms the survey findings, completed in accordance with current best practice (Collins, J. (Ed.) 2016). All surveys are conducted by experienced, licensed ecologists/assistants. It is to be read in conjunction with the 2023 Bat Scoping Survey Report produced by Ecological Services Ltd.
- The property is situated in a semi-urban environment in the village of Penparcau to the south-east of the town of Aberystwyth. It is within favourable bat habitat **but is not within 2km of any sites designated for their bat interest.**
- As part of the scoping survey no bats or their signs were found, and the property was considered to have **moderate** potential to support roosting bats, and a **moderate** risk of bats using the features present. During the activity surveys **Common pipistrelle** and **Soprano pipistrelle** were foraging and commuting within the surrounding environment, but no bats were seen to leave/enter any part. **There are currently no bats using the building,** it receives no ecological protection under wildlife legislation, and there are no ecological constraints to the works.
- **No evidence of bats, nesting birds or signs of owl activity** were found. However, biodiversity enhancement measures are required to ensure the development complies with the Environment (Wales) Act 2016, Future Wales 2040, and PPW (Edition 11, February 2021). The plans are to include these measures along with any proposed lighting. Recommendations are as follows (**see appendix 7 for examples**):
  - ***Recommendation 1 (Bat Enhancement)*****:** 1 x Beaumaris bat box (or similar) to be affixed to the west or south elevation of each new dwelling (other elevations can be used if these are not available). Ideally at the apex but can be moved slightly if above a window. See Putting up your box - Bat Boxes - Bat Conservation Trust (bats.org.uk).
  - ***Recommendation 2 (Bird Enhancement)*****:** A mix of Sparrow terraces, Swift nest boxes and Small-holed nest boxes to be affixed to the east or north elevation of each new dwelling (x 1 on each dwelling). Other elevations can be used if these are not available. See Where To Put A Bird Box | Nestboxes - The RSPB
  - ***Recommendation 3 (Broadscale Site Enhancement)*****:** A Biodiversity Plan is being produced for the development site. As part of this wider ecological benefit could be gained by retaining any mature hedgerow/tree boundaries that are the responsibility of the property owner and ensuring any future planting is with native species of wildlife value to increase connectivity to the surrounding habitat. See 17_bats_&_hedges_leaflet.pdf (hedgelink.org.uk). In addition, any garden areas are to include measures to enhance the site for Hedgehogs. See developers-1.pdf (britishhedgehogs.org.uk)

Contents

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, 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 building(s) and surfaces within the overall site footprint.

1.2 Site characteristics and proposed works

1.2.1 According to the Bat Scoping Report produced by Ecological Services Ltd, the Former Bodlondeb Care Home (the property) is situated in a semi-urban environment in the village of Penparcau to the south-east of the town of Aberystwyth. There is excellent ecological connectivity for bats to the wider environment and it backs onto Penparcau Park to the south of the site. There are also substantial amounts of open land to the south-east and south-west of the site as well as local nature reserves and wildlife sites approximately 845m to the west of the site and riparian corridors along both of the significant watercourses in the area. The nearest significant watercourses are the Afon Rheidol, approximately 220m to the north of the site and the Afon Ystwyth, approximately 860m to the south of the site at their nearest points There is unlikely to be any ambient lighting within the vicinity of the buildings.

1.2.2 The property is subject to proposed plans for demolition to create space for a residential development (along with the Former School House just to the east which did not require activity surveys). Figure 1 is an aerial view of the property and figure 2 on the following page is of the wider environment around the property. A proposed block plan is included in appendix 5.

Figure 1: Aerial view of the property which is outlined in red (from Apple® Maps). The Former School House is outlined in blue.

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

2. Desk study methods and results

2.1 Methods

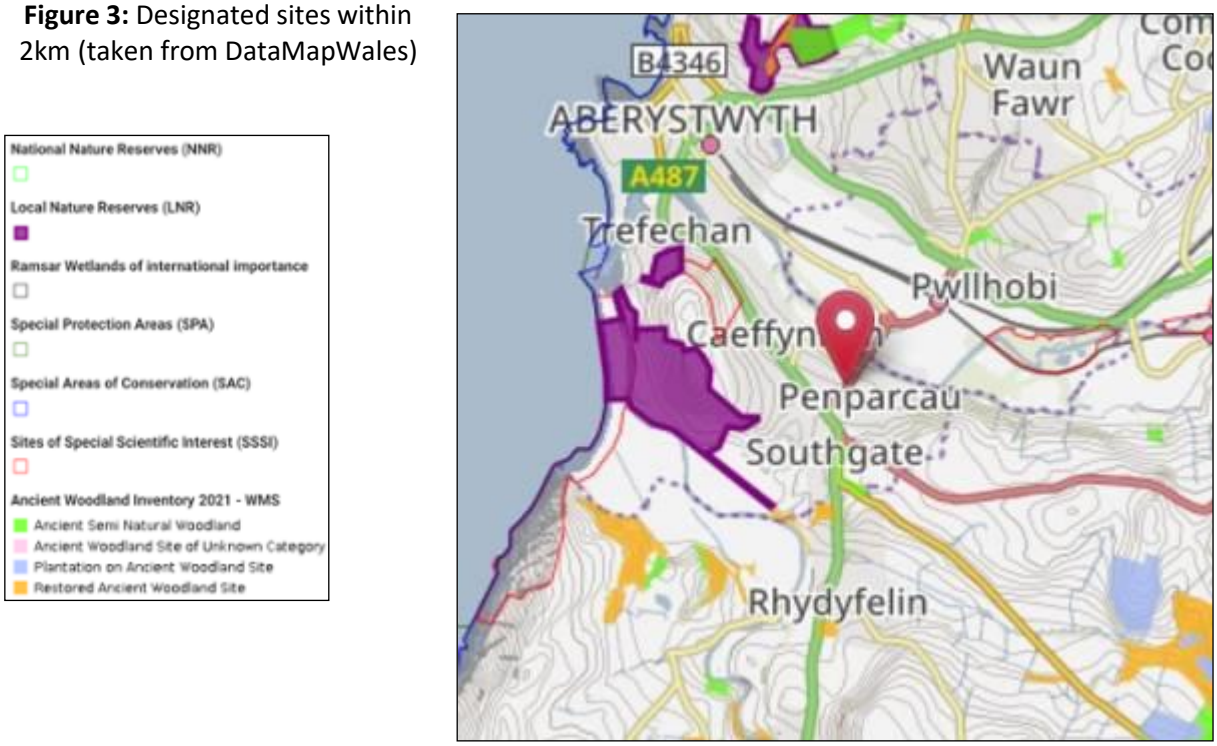
2.1.1 A 2km search area is used which covers the predicted zone of influence of the proposed development. DataMapWales is used to establish the proximity of National and International Statutory Designations, particularly in relation to designations for bat interest. Species searches are also conducted 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 In relation to statutory and non-statutory sites designated for their ecological significance, the property is within the Dyfi Biosphere and is within 2km of Pendinas Local Nature Reserve (LNR) (480m to the west), Gweunydd Pendinas Site of Special Scientific Interest (SSSI) (700m to the north-west), Rheidol Shingles and Backwaters SSSI (930m to the north-east), Allt Wen a Traeth Tanybwlch SSSI (1.2km to the west), West Wales Marine Special Area of Conservation (1.3km to the west), Northern Cardigan Bay Special Protection Area (SPA) (1.3km to the west), and Penglais LNR 1.8km to the north. **None of these sites are designated for their bat interest**. In addition, within 2km are nine areas of Ancient Semi Natural Woodland (ASNW), 11 Restored Ancient Woodland Sites, and one Plantation on

Ancient Woodland Site; the closest being an ASNW 380m to the south. There are no Wildlife Trust Sites, National Nature Reserves nor Sites of Importance for Nature Conservation within 2km of the property. See Figure 3 for sites within 2km with the location of the property's postcode being shown by a red pin.

Figure 3: Designated sites within 2km (taken from DataMapWales)



2.2.2 A data search was undertaken by Ecological Services Ltd with WWBIC to provide information on local bat and bird species in the area. The data search did not identify any historic records of bats being present in the property. The nearest recorded roosts are approximately 215m from the site which is an historic record for a ***Pipistrellus* species** roost from 1992; 230m from the site which is an historic record for an **Unidentified bat species (*Chiroptera*)** roost from 1985; and 290m from the site which is an historic record for a ***Chiroptera*** roost from 1987. There are also various non roosting records for bats, the nearest being approximately 95m from the site which is a record for a commuting/foraging **Common pipistrelle (*Pipistrellus pipistrellus*); Noctule (*Nyctalus noctula*),** and **Soprano pipistrelle (*Pipistrellus pygmaeus***); 125m from the site for a deceased ***Pipistrellus* species** from 2017 and 135m from the site for a commuting ***P. pipistrellus*** and a foraging ***P. pygmaeus***. A number of records for nesting birds were also returned as part of the data search. Species records include Fieldfare; Herring Gull; House Sparrow; Red Kite; Redwing; Song Thrush and Starling. All species records are within 1km of the proposed development site.

2.2.3 An online search found 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 2020 report produced by I&G Ecological Consulting Ltd for a property within 500m to the south found no bats or their signs but reported foraging and commuting by ***P. pipistrellus*.**

3. Field survey methods and results

3.1 Methods

3.1.1 A Preliminary Roost Assessment (PRA) was undertaken on 5th May 2023 by Ecological Services Ltd to identify Potential Roost Features (PRF). Details of the equipment used can be found in their report.

3.1.2 In relation to survey limitations, many of the UK species of bat are crevice dwelling, and bats or signs of bats can be difficult to find within a building. In addition, there may be areas that are inaccessible to the surveyor. Externally, sufficient access was available to enable a thorough survey from ground level while internally access was available to all areas. As a result of the findings, activity surveys were undertaken on the property (no surveys required for the Former School House) 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.

3.1.3 The 1st dawn re-entry survey was undertaken on 25th June 2023, and the surveyors were Iestyn Evans, Glyn Lloyd-Jones, Greg Evans, Bonnie Illingworth, Mike Jones, and Ceri Daugherty. Sunrise was at 04:54, the survey started at 02:50 and ended at 05:00. The weather remained dry throughout the survey but was overcast at the end, humidity was 95%, there was a light south-westerly wind of 3mph, and the temperature started at 16.3°C and ended at 17.6°C.

3.1.4 The 1st dusk emergence survey was undertaken on 25th June 2023, and the surveyors remained as for the dawn survey. Sunset was at 21:42, the survey started at 21:20 and ended at 23:40. The weather remained dry throughout the survey and was sunny with only light cloud (<10%) at the start, humidity was 60%, there was a light south-westerly breeze of 2mph, and the temperature started at 23.5°C and ended at 18.2°C.

3.1.5 The 2nd dawn re-entry survey was undertaken on 9th July 2023, and the surveyors remained as for the previous surveys. Sunrise was at 05:05, the survey started at 03:05 and ended at 05:05. The weather remained dry throughout the survey and was clear at the end, humidity was 95%, there was little to no wind, and the temperature started at 10.1°C and ended at 10.6°C.

3.1.6 The 2nd dusk emergence survey was undertaken on 9th July 2023, and the surveyors remained as for the previous surveys. Sunset was at 21:37, the survey started at 21:15 and ended at 23:35. The weather remained dry throughout the survey with 40% cloud and sunny spells at the start, humidity was 70%, there was a light westerly breeze of 1–2mph, and the temperature started at 17.5°C and ended at 13.2°C.

3.1.7 Figure 4 on the following page 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.**

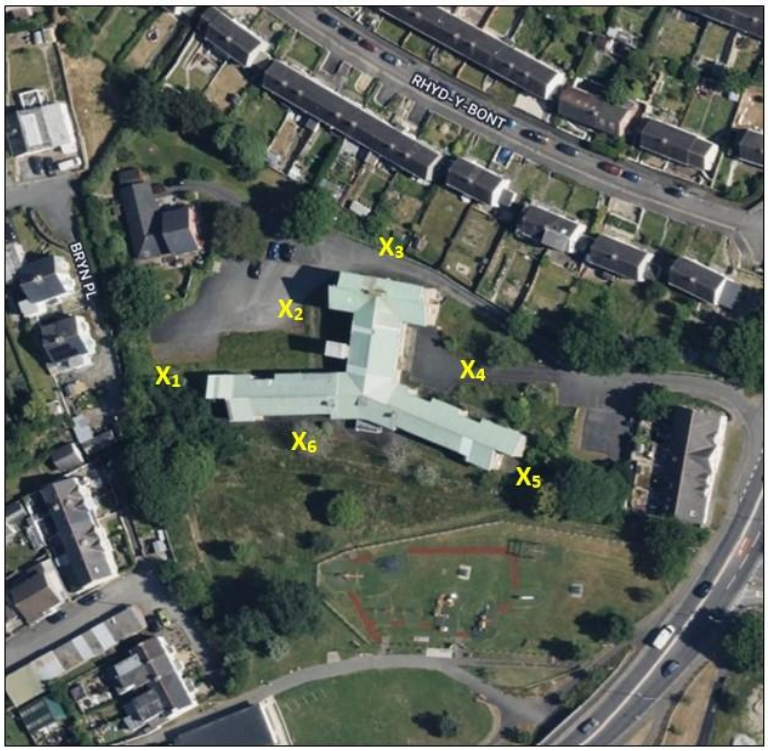


Figure 4: Surveyor positions during the activity survey (from Apple® Maps)

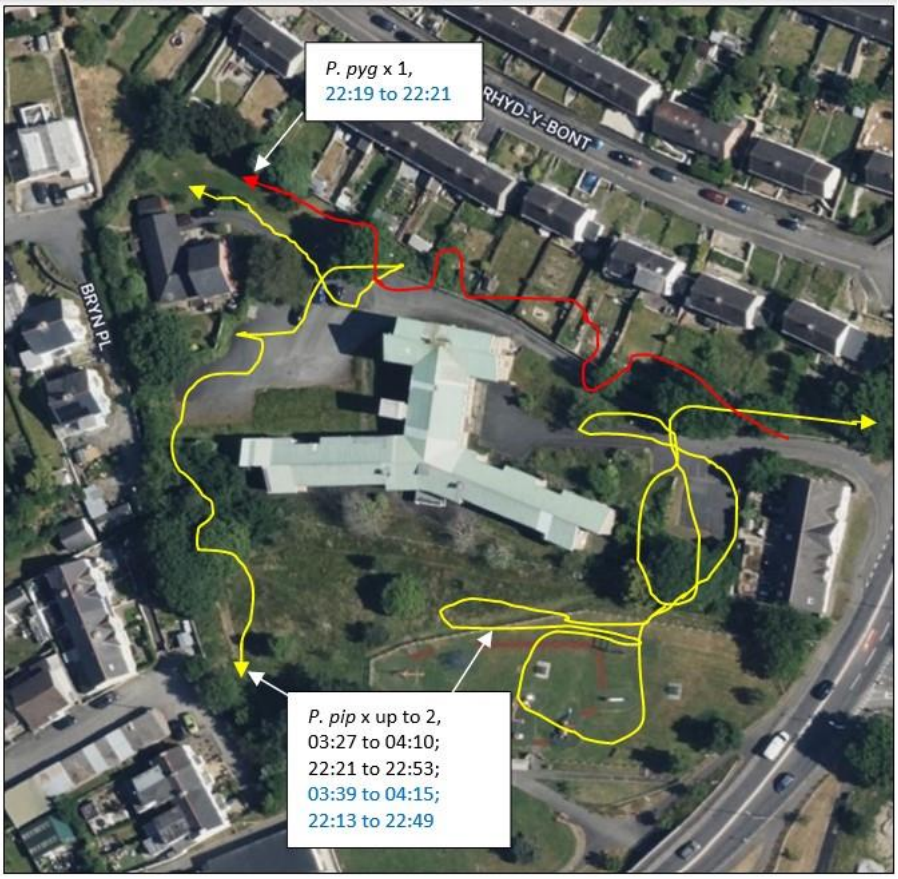
3.2 Survey results

3.2.1 The scoping survey undertaken by Ecological Services Ltd found that the property is a substantial, detached, brick-built building which is two storeys in height with a single pitch metal roof. There are uPVC fascia and barge boards present and timber soffits. There is likely to be a cavity wall in the building. Due to the condition of the former care home, there were a number of opportunities present for bats to access and use the building and those that were available were deemed as having moderate potential for roosting bats. There were apertures around an area of pipe to the eastern elevation of the building; apertures between the soffits and walls all the way around the building and apertures between the barge boards and walls. No droppings or evidence of bats were discovered on any external features although this would not be definitive of bats not using the buildings at other times of the year. The former care home had a small attic space which was accessed via an entrance hatch and was used to store the lift housing. The attic space was insulated and of a trussed design with the underside of the roof boarded out. As a result of the findings, it was considered that the property has **moderate** potential to support roosting bats, and a **moderate** risk of bats using the features present. There are currently **no bats** using the building. Example site survey images are included in their report and additional site survey images taken by I&G Ecological Consulting Ltd are included in appendix 6.

3.2.2 Figure 5 on the following page 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:

- ***P. pipistrellus:*** No bats were seen to leave or enter the property but there was activity to the east, west and south on all surveys. The latest activity on the dawn surveys was to the east at 44 minutes before sunrise while the earliest activity on the dusk surveys was to the west at 36 minutes after sunset.
- ***P. pygmaeus:*** No bats were seen to leave or enter the property and no bats were detected on site during the dawn surveys nor during the first dusk survey, although calls were heard to the south and west between 85 and 67 minutes before sunrise and 42 and 73 minutes after sunset. During the 2nd dusk survey an individual bat was observed commuting in a westerly direction on the northern side of the property at 42 minutes after sunset but no further activity was detected on site, although the surveyor on the western side recorded several calls around 55kHz during the final 20 minutes.

Figure 5: Aerial map showing the flight lines of bats detected (from Apple® Maps)



25/06/2023: Sunrise was at 04:54, the survey started at 02:50 and ended at 05:00

25/06/2023: Sunset was at 21:42, the survey started at 21:20 and ended at 23:40

09/07/2023: Sunrise was at 05:05, the survey started at 03:05 and ended at 05:05

09/07/2023: Sunset was at 21:37, the survey started at 21:15 and ended at 23:35

3.2.4 **No evidence of nesting birds or signs of owl activity** were discovered.

4. Interpretation, conclusions and recommendations

4.1 Interpretation and conclusions

4.1.1 The results for each at species were interpreted as follows:

- ***P. pipistrellus:*** There are no sites within 2km designated for this species but there are records within 100m. No bats were seen to leave or enter the property but there was activity to the east, west and south on all surveys. The latest activity on the dawn surveys was to the east at 44 minutes before sunrise while the earliest activity on the dusk surveys was to the west at 36 minutes after sunset. The evidence as a whole therefore suggests that this species is using the area as part of its foraging and commuting habitat.
- ***P. pygmaeus:*** There are no sites within 2km designated for this species but there are records within 100m. No bats were seen to leave or enter the property and no bats were detected on site during the dawn surveys nor during the first dusk survey, although calls were heard to the south and west between 85 and 67 minutes before sunrise and 42 and 73 minutes after sunset. During the 2nd dusk survey an individual bat was observed commuting in a westerly direction on the northern side of the property at 42 minutes after sunset but no further activity was detected on site, although the surveyor on the western side did record several calls around 55kHz during the final 20 minutes of the survey. The evidence as a whole therefore suggests that this species is using the area as part of its foraging and commuting habitat, with the focus being away from the property itself.

4.1.2 Using the findings of the desk study and field surveys, it is **concluded that the property is located within favourable bat habitat but is not within 2km of any sites designated for their bat interest.** The Scoping Survey Report stated that it was solely concerned with bats in relation to the buildings specifically referred to, and trees and other buildings not mentioned directly were not included. T**he property has moderate potential to support bats.** During the activity survey ***P. pipistrellus*** and ***P. pygmaeus*** were using the surroundings for foraging and commuting, **but bats are not currently using any part of the building. It is therefore considered that proposed development will not have a negative impact upon the favourable conservation status of the bat species using the area.** The localised scale of the proposed development also suggests that the impact on the local ecology, and it is anticipated that the proposed enhancements detailed in 4.2 will result in a positive impact and net gain for biodiversity.

4.1.3 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 Enhancement 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 to compensate for the loss of roosting opportunity. Excellent long-term enhancement can be delivered by implementing measures outlined within appendix 7. Proposed enhancements are as follows:

- ***Recommendation 1 (Bat Enhancement)*:** 1 x Beaumaris bat box (or similar) to be affixed to the west or south elevation of each new dwelling (other elevations can be used if these are not available). Ideally at the apex but can be moved slightly if above a window. See Putting up your box - Bat Boxes - Bat Conservation Trust (bats.org.uk).
- ***Recommendation 2 (Bird Enhancement)*:** A mix of Sparrow terraces, Swift nest boxes and Small-holed nest boxes to be affixed to the east or north elevation of each new dwelling (x 1 on each dwelling). Other elevations can be used if these are not available. See Where To Put A Bird Box | Nestboxes - The RSPB
- ***Recommendation 3 (Broadscale Site Enhancement)*:** A Biodiversity Plan is being produced for the development site. As part of this wider ecological benefit could be gained by retaining any mature hedgerow/tree boundaries that are the responsibility of the property owner and ensuring any future planting is with native species of wildlife value to increase connectivity to the surrounding habitat. See 17_bats_&_hedges_leaflet.pdf (hedgelink.org.uk). In addition, any garden areas are to include measures to enhance the site for Hedgehogs. See developers-1.pdf (britishhedgehogs.org.uk)

4.2.2 This ecological report will remain valid for a period of 24 months from the date of the last survey **i.e., until 09/07/2025 *(*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 a two-year period following the activity survey, especially if it has fallen into disrepair.

5. Outline method statement for planning

5.1 Outline method statement for planning

5.1.1 **No bats** were detected utilising the property 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. **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).

5.1.2 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.

5.1.3 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 guidance note 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.

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 facia 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 is about 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]

[a]Structures that have been categorised as low potential can be problematic and the number of surveys required should be judged on a case-by-case basis (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

• *Crevice-dwelling bats* (such as Soprano pipistrelles) can crawl into roosts via small gaps in the range of 15–20mm high by 20–50mm wide. The roost area should maintain a crevice of this approximate size gap that the bats can roost between. The area this roost provision covers can be small but about $1m^2$ 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&G have held bat licences and been operating for more than a decade* 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: Proposed block plan

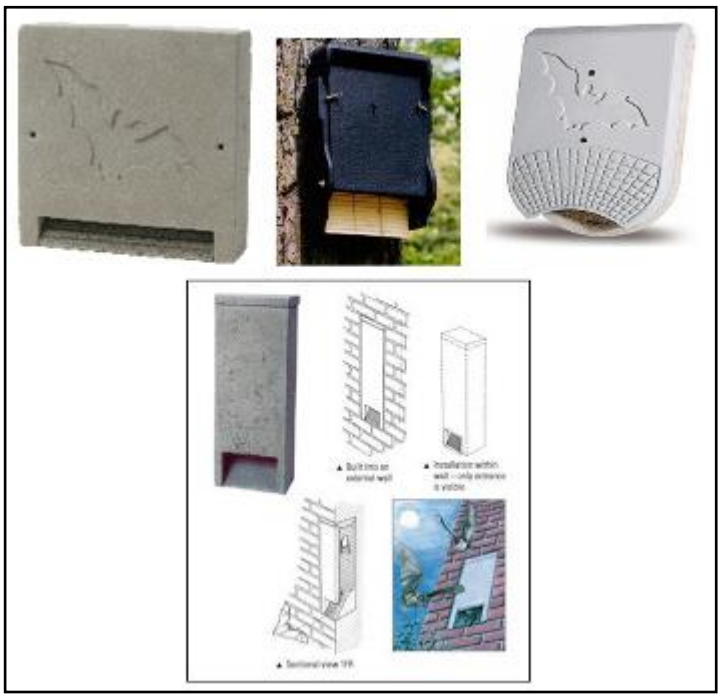
Above: Proposed block plan. Biodiversity enhancement – the recommended locations for the bat and bird measures on the new dwellings are to be shown on the final plans to be submitted, along with any proposed external lighting.

Appendix 6: Site survey images

The property is a substantial, detached, brick-built building which is two storeys in height with a single pitch metal roof. There are uPVC fasciae and barge boards present and timber soffits. There is likely to be a cavity wall in the building. Due to the condition of the former care home, there were a number of opportunities present for bats to access and use the building and those that were available were deemed as having moderate potential for roosting bats.

There were apertures around an area of pipe to the eastern elevation of the building; apertures between the soffits and walls all the way around the building and apertures between the barge boards and walls. No droppings or evidence of bats were discovered on any external features although this would not be definitive of bats not using the buildings at other times of the year. The former care home had a small attic space which was accessed via an entrance hatch and was used to store the lift housing. The attic space was insulated and of a trussed design with the underside of the roof boarded out.

Appendix 7: Roost compensation & enhancement measures



Top: From left to right, the in-wall Schwegler 1FE, the tree mounted 1FF and the multi season 1WQ. The bottom image shows the 1FR in situ.

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

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

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.

Below: Examples of Sparrow terraces, House martin nest cups, Swift nest boxes, 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 8: I&G Ecological Consulting Ltd legal disclaimer

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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 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 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***.

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

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