24 Dulais Dr, Aberdulais, Neath SA10 8HB

Bat Survey Report for Mr & Mrs Howell

A European Protected Species Licence will not be required

for this development to be undertaken

Report type	Bat Survey Report
Report reference	IG202424DulaisDr
Site	24 Dulais Dr, Aberdulais, Neath SA10 8HB
Grid reference	SS 77249 99577
Client	Mr & Mrs Howell
Date(s)/time(s)/ type(s) of survey(s)	**Scoping survey:** 27th November 2024
Surveyor details	**Scoping survey:** Mr Thomas Bellingham
Architect	Williams Architecture

Version	Status	Changes	Name	Position	Date
1	**Draft**	Sent for review on 01/12/2024	Thomas Bellingham	Author	27/11/2024

	Name	Position	Date
Reviewed by	Iestyn Evans	Reviewer	01/11/2024
Approved by	Glyn Lloyd-Jones	Director	02/11/2024
Sent to Client	Glyn Lloyd-Jones	Director	04/11/2024

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Executive summary

- 24 Dulais Dr (the property) is a semi-detached, east facing, two storey dwelling with an existing single storey rear extension which is subject to proposed plans for alterations and a side two storey extension. It is constructed of block walls which have been rendered and dashed with the main roof being a bitumastic felt lined, concrete tile roof. It is generally in very good condition, well maintained, and tightly sealed. The walls are generally in excellent condition with no crevices, cracks or potentially exploitable gaps present. Meanwhile, the uPVC soffits/fascias are in excellent condition and tight to the walls. In addition, the uPVC framed windows and doors are all intact and remain closed when not in use with no gaps around any of the frames. The roof is also in very good condition with no slipped/damaged/missing slates, no raised ridge slates, no gaps under the flashing, and no potentially exploitable gaps anywhere.
- On 27th November 2024, I&G Ecological Consulting Ltd undertook a survey of the property. This report confirms the findings of that survey, completed in accordance with current best practice (Collins, J. (Ed.) 2023). It was conducted by an experienced, licensed ecologist and access was available to all parts of the site.
- The property is located in a suburban position in the village of Aberdulais, approximately 3km northeast of the larger town of Neath and approximately 13km north east of the city of Swansea **It sits within reasonably close proximity to favourable bat habitat, but is not within 10km of any site which is designated for its bat interest.**
- Using the results obtained from the desk study and scoping survey, it is considered that the property has **negligible** potential to support roosting bats, and a **negligible** risk of bats using the features present. **There are currently no bats using the building.** It therefore receives no ecological protection under wildlife legislation, and there are no ecological constraints to the proposed works.
- **No evidence of bats, nesting birds, or signs of owl activity** were discovered. However, biodiversity enhancement measures are required to be submitted to ensure the development complies with the Environment (Wales) Act 2016, Future Wales 2040, and PPW (Edition 12, February 2024). Recommendations are as follows and all locations will be provided on the plans to be submitted (**see appendix 5 for recommended locations and appendix 7 for examples**) along with details of any proposed lighting:
- ***Recommendation 1 (Bat Enhancement):*** 1 x Beaumaris Woodstone bat box (or similar) to be affixed to the west elevation of the property. See Putting up your box - Bat Boxes - Bat Conservation Trust (bats.org.uk)
- ***Recommendation 2 (Bird Enhancement):*** 1 x Sparrow terrace to be affixed to the east elevation of the property. See Where To Put A Bird Box | Nestboxes - The RSPB
- ***Recommendation 3 (Broadscale Enhancement):*** Wider ecological benefit could be delivered by ensuring (where possible) that all boundaries are planted with native species to retain connectivity to the surrounding habitat as well as planting up any gardens with wildlife friendly plants and retaining any mature trees. See 17_bats_&_hedges_leaflet.pdf (hedgelink.org.uk)

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1. Introduction

1.1 Scope and purpose of survey

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

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

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

1.2 Site characteristics and proposed works

1.2.1 24 Dulais Drive (the property) is located in a suburban position in the village of Aberdulais, approximately 3km northeast of the larger town of Neath and approximately 13km north east of the city of Swansea. It sits within reasonably close proximity to favourable bat habitat, within 1km to the north, east and south there are small agricultural fields (predominantly semi-improved and improved) with many mature hedgerows which include mature trees, and which provide good connectivity. There is also an Ancient Semi-Natural Woodland Site within 200m to the south east along with further small woodlands within 2km. In relation to waterbodies and watercourses, the partially wooded river corridor of the Afon Dulais is 1.5km to the west, Afon Nedd is 140m to the south-east, neath canal is 180m to the south east and there are a number of unnamed streams within 2km.

1.2.2 The property is subject to proposed plans for alterations and rear two storey extension. Figure 1 is an aerial view of the property, figure 2 on the following page is of the wider environment around the property, and figure 3 is an existing site plan. Additional plan drawings are included within 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: Existing site plan

2. Desk study methods and results

2.1 Methods

2.1.1 A 2km search area is used which covers the predicted zone of influence of the proposed development. Multi-Agency Geographic Information for the Countryside (MAGIC), DataMapWales and Lle are 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 2km or adjacent to any statutory or non-statutory protected features of ecological significance. The closest being 4km to the north-west, which is Fforest Goch Bog Site of Special Scientific Interest which is not designated for its bat interest. In addition, there are a large number of areas of Ancient Semi Natural Woodland (ASNW), Restored Ancient Woodland Sites and Plantations on Ancient Woodland Sites; the closest being a ASNW 190m to the north. There are no Wildlife Trust Sites, Local or National Nature Reserves within 2km. See Figure 3 for sites within 2km with the location of the property's postcode being shown by a blue pin.

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

2.2.2 A formal LRC data search was not undertaken due to the small size, low predicted impact, and nature of the development. The overall impact on biodiversity is likely to be localised and of low significance and current proposals suggest no land will be lost or linear features severed. It is considered very unlikely that the development will have any impact outside the footprint of the works. The data search results would be considered unlikely to impact on the decision-making process as appropriate well-staffed surveys were undertaken at optimum times of year. This approach is consistent with the CIEEM Guidelines for Accessing and Using Biodiversity Data (2020). **An online search found records of the following bat species within 2km of the property: Daubenton's bat (*Myotis daubentonii*) and Common pipistrelle (*Pipistrellus pipistrellus*).**

2.2.3 An online search found no previous planning applications for the property.

3. Field survey methods and results

3.1 Methods

3.1.1 A Preliminary Roost Assessment (PRA) was undertaken (adhering to government and CIEEM guidelines on the COVID-19 pandemic) on 27th November 2024, 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 Thomas Bellingham.

3.1.2 In relation to survey limitations, many of the UK species of bat are crevice dwelling, and bats or signs of bats can be difficult to find within a building. In addition, there may be areas that are inaccessible to the surveyor. Externally, sufficient access was available to enable a thorough survey from ground level while internally, access was available to all areas. As a result, using the equipment available to them, all accessible areas were thoroughly surveyed to maximise effectiveness. In addition, weather conditions were good.

3.1.3 Due to the findings of the PRA, it was not considered that any activity surveys – or deployment of an Anabat – were necessary.

3.2 Survey results

3.2.1 The PRA found that the property is a semi-detached, east facing, two storey dwelling with an existing single storey rear extension which is subject to proposed plans for alterations and a side two storey extension. It is constructed of block walls which have been rendered and dashed with the main roof being a bitumastic felt lined, concrete tile roof. It is generally in very good condition, well maintained, and tightly sealed. The walls are generally in very good condition with no crevices, cracks or potentially exploitable gaps present. Meanwhile, the uPVC soffits/fascias are in excellent condition and tight to the walls. In addition, the uPVC framed windows and doors are all intact and remain closed when not in use with no gaps around any of the frames. The roof is also in very good condition with no slipped/damaged/missing slates, no raised ridge slates, no gaps under the flashing, and no potentially exploitable gaps anywhere. The loft is mainly unused at present, only being used for occasional storage, no access points to any external areas were found. The blockwork is in good condition with no potentially exploitable gaps and no external light seen entering the space. In addition, the roof lining and roof joists are in very good condition with no damage and only undisturbed cobwebs and dust on the surfaces. Careful examination of all areas found **no live or dead bats or their signs (e.g., droppings, urine stains or smells) anywhere either externally or internally.** As a result of the findings, it is considered that the property has **negligible** potential to support roosting bats and a **negligible** risk of bats using the features present, and **no evidence of the presence of bats was found either externally or internally**. Site survey images are included in appendix 6.

3.2.2 **No evidence of nesting birds** was found and **no signs of owl activity** were discovered.

4. Conclusions and recommendations

4.1 Conclusions

4.1.1 Using the findings of the desk study and field survey, it is **concluded that the property is within clos proximity to favourable bat habitat but is not within 10km of any sites designated for their bat interest. However, it has negligible potential to support bats and bats are not currently using any part of the building. There are also no trees or hedgerows of ecological value on site that will be affected by the development, so no flight corridors will be affected. 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 is likely to be low, and it is anticipated that the proposed enhancements detailed in 4.2 will result in a positive impact and net gain for biodiversity.

4.1.2 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 12th Edition (February 2024); 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 Woodstone bat box (or similar) to be affixed to the west elevation of the property. See Putting up your box - Bat Boxes - Bat Conservation Trust (bats.org.uk)
- ***Recommendation 2 (Bird Enhancement)*:** 1 x Sparrow terrace to be affixed to the east elevation of the dwelling. See Where To Put A Bird Box | Nestboxes - The RSPB
- ***Recommendation 3 (Broadscale Enhancement)*:** Wider ecological benefit could be achieved by ensuring (where possible) that all boundaries are planted with native species to retain connectivity to the surrounding habitat as well as planting up any gardens with wildlife friendly plants and retaining any mature trees. See 17_bats_&_hedges_leaflet.pdf (hedgelink.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 27/11/2026** (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 the property 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, extra care will be taken at wall tops and when stripping any part of the roof. All materials are to be lifted and not slid as despite a negative survey bat 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, 4th edition (Collins, J. (Ed.), 2023) & The Bat Workers' Manual, 3rd edition. (Mitchell-Jones, A.J., & McLeish, A.P. (Ed.), 2004). Reports are written with reference to the CIEEM (2017) Guidelines as well as BS42020.
- A PRA visit (scoping survey) is used to identify all potential access and egress points for bats in the building, and to identify crevices and possible dwelling places. Internal and external inspections are aided using powerful binoculars and close-focussing monoculars, as well as ladders, high powered Cree flashlights and head-torches. We also have thermal imaging cameras and night vision devices at our disposal as well as full spectrum photographic cameras which can photograph a bat in complete darkness with an infrared flash. Exploitable crevices are also endoscoped with either a hand-held digital scope or a smart phone compatible scope. Digital thermometers and hygrometers are also at our disposal.

- The survey consists of a visual inspection of the interior and exterior of the building(s) 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(s) 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 commonly deployed within the space of the building surveyed (often depending upon site and building security). These commonly record all bats from within as well as 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 (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 2019 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 stepwise 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 2019 – (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 (12th 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 wellbeing. 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) (2023).

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) (4th Edition, 2023). This is for presence/absence surveys to give confidence in a negative result for structures (also recommended for trees but unlikely to give confidence in a negative result).

Table 7.1. Recommended timings for presence/absence surveys to give confidence in a negative result for structures (also recommended for trees where other methods such as PRF inspection are not possible, but unlikely to give confidence in a negative result). To be used in tandem with Table 7.2.

Low roost suitability or PRF-I	Moderate roost suitability	High roost suitability or PRF-M
May to August (structures) No further surveys required (trees)	May to September[a], with at least one of surveys between May and August[b]	May to September[a], with at least two of 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. September surveys are likely to miss maternity roosts due to dispersal before this time, but may pick up mating roosts.

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 three weeks apart**, preferably more. Survey timings **should consider the prevailing conditions in the year of survey, which will vary geographically**. In years with a cold spring, the surveys should not be started in early May or all completed in May. The surveys should maximise the possibility of detecting maternity roosts, which can switch roosts between pregnancy and lactation, and the **optimum coverage includes the pre-parturition, post-parturition and mating periods**.

[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.*September surveys may miss maternity roosts due to disperal (but amount of guano, smell and other signs will suggest whether it's a likely maternity roost or not*, a september survey may pick up a mating roost.

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) (4th Edition, 2023).

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 2-3 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 S094480/1. I&G were proud to be shortlisted for a BCT roost award in 2021 and contributed to both the 2023 survey and mitigation guidelines and also sponsor the former.
Mr Iestyn Evans	Bats	Iestyn has extensive experience in conservation, habitat improvement and management and has also worked with and assisted other licensed bat workers for many years. He has also helped with local bat group surveys and assisted in data gathering for the Beacon for Bats project undertaken by the Vincent Wildlife Trust. Iestyn has also assisted the Glamorgan Bat Group and will also help supervise and mentor (if needed) members of the newly incarnated Carmarthenshire Bat Group. Natural Resources Wales Licence number 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 Laurence Dean	Trainee	Laurence is an ecologist and bat license trainee, with experience in ecological conservation. He holds a Bachelor's degree in Zoology and a Master's degree in Environmental Biology, as well as published research in freshwater mussel conservation. He is passionate about ecology and is currently building on his experience to further improve his skill set.
Mr Mike Jones	Assistant	Whenever we need extra assistance in observing and recording bat activity on buildings, Mike provides an excellent and reliable service.
Ms Sharon Doherty	Assistant	Whenever we need extra assistance in observing and recording bat activity on buildings, Sharon provides an excellent and reliable service.
Ms Bonnie Illingworth	Assistant	Bonnie has been a member of the Kent Bat Group for a number of years and has undergone formal training in leading Bat Walks by Shirley Thompson, who set up The Young Batworkers group/magazine etc. She has led several educational sessions for the Scouts and local community groups. She has undertaken many bat activity surveys and has enjoyed conservation work with BCT.
Ms 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.
Ms Greta Vaiciunaite	Assistant	Greta has a keen eye for detail and a passion for the natural sciences. She regularly helps on surveys for bats, reptiles and amphibians and seeks to gain a rounded knowledge in ecology.
Tom Bellingham	Trainee	Tom has an aptitude for ecology and enjoys bat, bird, botanical and woodland surveys.

Appendix 5: Site plans

Above: Existing dwelling plans. **Below:** Proposed dwelling plans – Biodiversity enhancement measures. The location for the Sparrow terrace on the front (east) elevation of the dwelling is shown by a blue arrow. The location for the bat box on the rear (west) elevation is shown by a red arrow.

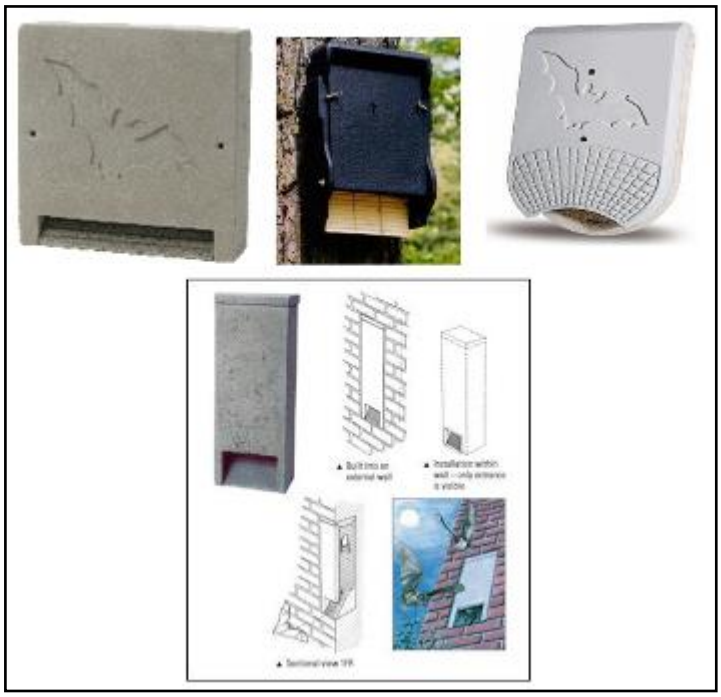
Appendix 6: Site survey images

The PRA found that the property is a semi-detached, east facing, two storey dwelling with an existing single storey rear extension which is subject to proposed plans for alterations and a side two storey extension. It is constructed of block walls which have been rendered and dashed with the main roof being a bitumastic felt lined, concrete tile roof. It is generally in very good condition, well maintained, and tightly sealed. The walls are generally in very good condition with no crevices, cracks or potentially exploitable gaps present.

Meanwhile, the uPVC soffits/fascias are in excellent condition and tight to the walls. In addition, the uPVC framed windows and doors are all intact and remain closed when not in use with no gaps around any of the frames. The roof is also in very good condition with no slipped/damaged/missing slates, no raised ridge slates, no gaps under the flashing, and no potentially exploitable gaps anywhere.

The loft is mainly unused at present, only being used for occasional storage, no access points to any external areas were found. The blockwork is in good condition with no potentially exploitable gaps and no external light seen entering the space. In addition, the roof lining and roof joists are in very good condition with no damage and only undisturbed cobwebs and dust on the surfaces. Careful examination of all areas found **no live or dead bats or their signs (e.g., droppings, urine stains or smells) anywhere either externally or internally.**

Appendix 7: Roost compensation & enhancement measures

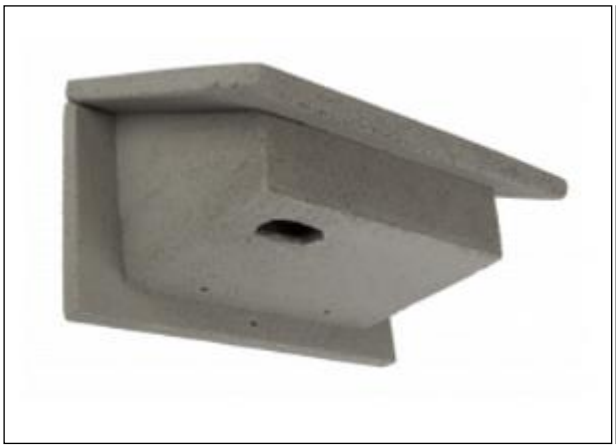


Top: From left to right, the in-wall Schwegler 1FE, the tree mounted 1FF and the multi season 1WQ. The bottom image shows the 1FR in situ.

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)

Examples of Sparrow terraces (top), House martin nest cups (middle), and Swift nest boxes (bottom). 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.

Appendix 9: 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.) 2023. *Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4th Edition*. 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., & 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.

Reason, P.F. and Wray, S. (2023). UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. Chartered Institute of Ecology and Environmental Management, Ampfield.

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, 2024. *Planning Policy Wales. 12th ed.* Retrieved from https://www.gov.wales/sites/default/files/publications/2024-02/planning-policy-wales-edition-12_1.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.