

A Bat Survey Report
on behalf of

Catherine Jones
for
Thespian House
Penydarren Road
Penydarren
Merthyr Tydfil
CF47 0LJ



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Project Overview

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Limitations

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The assessments made assume that the site(s) and facilities will continue to be used for their current purpose without significant change. The conclusions and recommendations contained in this Report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested. Information obtained from third parties has not been independently verified by Little Wing Ecology (CYF).

Executive Summary

The owners of Thespian House in Penyardren, are preparing a planning application to Merthyr Tydfil County Borough Council, the local planning authority, for the conversion of a redundant building into a commercial premises. To support the planning application process, a survey for the presence of bats and birds was undertaken in the summer of 2024.

Following the results of a Preliminary Roost Assessment by Little Wing Ecology (CYF) conducted in May 2024, two dusk activity surveys, and a 14-day internal static survey were undertaken in accordance with national survey standards, with the purpose of identifying the presence/likely absence of bat roosts at the structure. An inspection of the 1st storey recorded a scattered cluster of droppings numbering 100+, near the redundant chimney place in the middle room. Subsequent surveys and roost inspections identified this room as being a roost for a single greater horseshoe bat. Male greater horseshoe bats are known to use caves as summer roosts and the dark stable conditions provided by this structure mimic these. During three dusk emergence surveys conducted between May and July of 2024, evidence was recorded of two bat species using Building A as a day roost including one greater horseshoe bat and one common pipistrelle. Of the 47 recordings made, four species were identified foraging and commuting near the site. The majority of observed behaviour was for animals foraging around an adjacent stream and along adjacent treelines. Species identified during the survey effort included greater horseshoe bat, common pipistrelle, soprano pipistrelle, noctule bats, brown long-eared, and an unidentified myotis bat. During a 14-day internal static presence/absence survey conducted between July and August of 2024, evidence was recorded of five bat species at the interior, including: greater horseshoe bat, lesser horseshoe bat, common pipistrelle, soprano pipistrelle and noctule. The structure is most likely a day-roost and night roost for greater horseshoe bats, an incidental night roost lesser horseshoe bat. Use by other species is considered incidental - most likely foraging. The findings of this report are consistent with local records. When the conservation significance of Thespian House is considered, the impact is low (Collins, J. (Ed.) (2023).

Following the outcomes of these surveys and in consultation with the local planning ecologist, a 14-day data-logging survey was conducted with the purpose of collecting temperature and humidity data for the identified day-roost and proposed replacement roost. Overall, the temperature and humidity levels at both sites are similar, with the temperature being slightly lower at Building B and the Humidity levels being lower at Building A. Both of these are consistent with Building B currently being open to the east and west, and consequently subject to a movement of air through the structure. The movement of air would cause a reduction in temperature and increase the movement of humid air from the adjacent stream. Conversely, Building A is only open to the east and has no through-flow of air, resulting in slightly more stable characteristics. In terms of the suitability of Building B as an alternative roost site, the variations in the finding would most likely be addressed but restricting air flow through Building B. An additional consideration is the location of Building B, directly adjacent to a fast-flowing stream, a feature which may impact humidity levels, although by restricting the movement of air through the structure this would also be reduced. The owner has stated their intention to turn over the whole of Building B for the purpose of building a suitable replacement roost.

All bat species and their places of rest are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), and the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. The legal protection for bats concerns impacts from disturbance, loss of roost locations, modifications to roosts and loss of access or obstruction to roost locations. As impacts of this nature will arise during the proposed works, a European Protected Species (EPS) licence will be required from NRW before any work is done which affects the roosts and the bat exit/entry points.

Birds were also considered at the same time as the bat surveys. Thespian House supports several features that could be exploited by nesting birds, e.g., house sparrows (*Passer domesticus*). A cautionary approach is recommended. All nesting birds, their chicks' eggs and active nests are protected under the Wildlife and Countryside Act 1981 (as amended). As nesting opportunities have been identified, a precautionary approach will be required. Therefore, mitigation for bird species and general advice on the legal status of breeding birds is given in this report.

Recommendations are presented in Section Five. Under The Environment (Wales) Act (2016) the planning authority has a statutory duty to have regard for the conservation of biodiversity. Details of planned site enhancements are also made in this report.

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SECTION ONE: INTRODUCTION

1.1 Background

- 1.1.1 The owners of Thespian House in Penydarren, are preparing a planning application to Merthyr Tydfil County Borough Council, the local planning authority, for the conversion of a redundant building into a commercial premises.
- 1.1.2 Little Wing Ecology (CYF) was commissioned to undertake a Bat Activity Survey to inform the client of any constraints, and associated planning requirements with regards to protected species, and to inform a planning application. For the purposes of this report, the structure will be referred to as, 'Buildings A and B.'
- 1.1.3 Bats were identified as the group of animals with the potential to be affected by the planning proposal and in this regard the objectives of the survey were:
- Determine the presence/likely absence of bat roost(s) at Buildings A and B.
 - Determine the species of bat present.
 - Determine the type of roost present (maternity, day roost etc).
 - Identify any bat foraging or commuting behaviour in relation to the location.
 - Consider if there will be impacts on bats from the proposed works.
 - Consider if nesting birds are present which might be affected by the development proposals.
 - Gather sufficient information to be able to make appropriate recommendations, inform mitigation and licencing.
- 1.1.4 Following the results of a Preliminary Roost Assessment (PRA) visit by Little Wing Ecology (May 2024) this report contains the results from the PRA, two dusk activity surveys, a 14-day internal static survey and a 14-day datalogging survey, conducted during the summer months of 2024. Surveys were carried out with the purpose of identifying the presence/likely absence of bat roosts at Buildings A and B and carrying out investigations to provide environmental data at roost sites. Following survey, an assessment of the likely impact that the proposed works will have on bat interest at the site was carried out. This report has been prepared with recommendations for enhancement features to improve opportunities for local species post-development.

1.2 Site Description

- 1.2.1 Located at National Grid Reference (NGR) SO 05141 06704 (Appendix A), at an altitude of 195m above Ordnance datum, Thespian House is located on the main thoroughfare in the settlement of Penydarren, a short distance north of Merthyr Tydfil town centre. Building A is a Victorian villa, attached at its northern elevation to a form theatre which is currently derelict. The structure is no longer fit for the purpose for which it was originally intended, and the owners propose to renovate the structure with the aim of providing a commercial unit at Building A. The buildings require significant renovation to bring them up to modern standards.
- 1.2.2 Buildings A is accessed via a pedestrian access off the main service road. Building B is only accessed via Building A and sits off a central courtyard. Habitat in the immediate vicinity is wholly urban being predominantly made surfaces such as pavements, roads and other buildings. The Nant Morlais, an upland stream, is located directly adjacent to the eastern boundary. This has a north-east – south-west alignment, is a tributary of the Afon Tâf, and provides connectivity to the wider landscape. The frontage is impacted by high levels of artificial lighting while the rear, is a darker space and is bordered by the tree-lined stream.

1.3 Policy and Legislation

- 1.3.1 In Wales, all bat species and their roosts are legally protected, by both domestic and international

legislation. This means you may be committing a criminal offence if you:

- Deliberately take, injure, or kill a wild bat.
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats.
- Damage or destroy a place used by bats for breeding or resting (roosts) (even if bats are not occupying the roost at the time).
- Possess, advertise, sell, exchange a bat of a species found in the wild in the EU (dead or alive) or any part of a bat.
- Intentionally or recklessly obstruct access to a bat roost.

1.3.2 The framework for this protection is provided within three pieces of legislation from the Government of Wales and the UK Government.

1.3.3 These are:

- The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019
- The Environment (Wales) Act 2016.
- The Wildlife and Countryside Act (1981) – as amended.

1.3.4 Additional information on the legal scope of these acts can be found in the Appendix and a link to the full documentation can be found in, 'References and Bibliography.'

SECTION TWO: THE SURVEY METHOD

2.1 Desktop Survey (Bats)

2.1.1 Available records for bats (within 2km) were provided by SEWBrEC (SEWBrEC - LERC Reference: 0245-467).

2.2 Desktop Survey (Habitat)

2.2.1 A review of aerial photography was undertaken to assess the provision of suitable foraging and commuting habitat within proximity to Buildings A and B. This information was used in combination with a review of statutory designated sites, via the MAGIC website, including Special Areas of Conservation (SAC) and Sites of Special Scientific Interest (SSSI) to help in confirming the presence of bat species locally.

2.2.2 Bats are considered cryptic species and therefore it can be difficult to confirm whether they are present or not. Although the provision of local biological records would provide a range of information, such records can only be relied upon as relative where they are reasonably recent and when supplied by an experienced bat surveyor. It was therefore considered necessary to undertake a detailed survey regardless of the data search results, as this is most likely to be beyond the acceptability of current data as defined in BS 42020:2013 Biodiversity: Code of practice for planning and development and will not be as effective as spending time examining and or monitoring the buildings for the presence of bats.

2.3 Preliminary Roost Assessment

2.3.1 A potential nest and roost assessment survey was planned and carried out on the interior and exterior of Buildings A and B by a suitably experienced ecologist and Natural Resources Wales (NRW) licenced bat worker. The external fabric of the structure was methodically inspected using close-focusing binoculars and a high-powered torch for potential access points such as gaps in the fabric of the building, beneath lifted roof materials or other gaps in the roof. Loose flashing, smudge marks and droppings on walls directly below eaves and gables etc were also searched for. A description of the building, including construction material and current condition was recorded. Internally, the building was searched using a high-powered torch to identify possible links to exterior roost entrances and clear signs of presence via urine staining, feeding remains, odour, piles of droppings, live bats, and bat carcasses. The space was also examined in the dark to identify areas where the presence of light would identify potential entry points for birds and bats. The aim

of this survey was to determine the actual or potential presence of bats and the need for further survey and/or mitigation. During the field survey, an assessment of the habitats on-site and beyond the site boundary was undertaken. The aim of this was to identify potential commuting and foraging corridors, and suitable foraging sites. This enabled the suitability of the location for bats to be determined.

- 2.3.2 Nesting birds were also considered at the time of the survey, with the surveyor looking for signs of bird activity, nests, nest building, feeding at nest sites, and evidence of collections of bird droppings, feathers, or any other indications of use by birds.

2.4 Additional Ecological Considerations

- 2.4.1 Whilst a full ecological appraisal was not undertaken at the site, a note was made of any additional ecological considerations identified during the survey. For ease of reference these have been included within this report (Section 3).

2.5 Limitations of the Survey Method

- 2.5.1 A record was made of any constraints that limited the results of this survey report and is presented in Section 3.

2.6 Activity Surveys

- 2.6.1 Following guidelines set out in, 'Bat Conservation Trusts Good Practice Guidelines (Collins, J. (Ed.) (2023),' Buildings A and B were subsequently categorised for the level of risk of supporting bats and recommendations made as to the requirement (if any) for dusk activity surveys to determine the presence/likely absence of roosting bats, species identification, population size, roost type, and the requirement for any associated mitigation. If required, dusk survey(s) for bats will be conducted no less than 21 days apart. During any subsequent activity surveys, sufficient surveyors will be required to adequately cover all features identified during the PRA. Nocturnal bat surveys can be undertaken May to mid-September, inclusive. Taking a precautionary approach, and dependent on the outcome of these surveys, additional survey work may be required, but only if higher than expected activity is recorded. Details of our surveyors and their experience is recorded in the Appendix C.

2.7 Equipment (Activity Surveys)

- 2.7.1 The equipment used for dusk activity surveys provides high quality recordings of bat calls which are analysed using BatSound and AnalookW software. Recordings are annotated by the surveyors to provide contextual information on bat behaviour and flight patterns. At Little Wing Ecology (CYF) we use Pettersson D240x time expansion bat detector and Tascam DR-05X Portable Digital Recorder, Peersonic RPA3B full spectrum recorders and Anabat SD2 Frequency Division detectors. As a night vision aid (NVA) we use a MELCAM Video Camera Camcorder 1080P IR Night Vision Digital Camera. Audio for this is provided by an Anabat SD2. In addition, we use Audiomoth – a full-spectrum acoustic logger, based on the Gecko processor range from Silicon Labs.

SECTION THREE: RESULTS

3.1 Desktop Survey Results

- 3.1.1 The survey location was examined by consulting Magic Map. No part of the site contains, or is within, any statutory sites of nature conservation interest, such as a Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC), National Nature Reserves (NNRs) or Local Nature Reserves (LNRs). There are no Sites of Species Scientific Interest (SSSIs) on or adjacent to Buildings A or B. Cwm glo a glyndyrys (SSSI) is located ≈1.3km to the south-west.

Site Name	SAC	SSSI	NNR	Relationship with the identified Species
Abercriban Quarries		X		Potential hibernation site
Baltic and Tyle'r-bont Quarries		X		Potential hibernation site
Blaen Cynon	X			Potential foraging habitat
Bodwigiad a Nant y Deri		X		Potential foraging habitat
Brecon Beacons		X		Potential foraging habitat
Bryncarnau Grasslands, Llwydcoed		X		Potential foraging habitat
Caeau Nant y Groes		X		Potential foraging habitat
Cefn y Brithdir		X		Potential foraging habitat
Cors Bryn-y-Gaer		X		Potential foraging habitat
Cwar yr Ystrad a Cwar Blaen Dyffryn		X		Potential foraging habitat
CWM CADLAN	X	X	X	Potential foraging habitat
Cwm Glo a Glyndyrys		X		Potential foraging habitat
Cwm Taf Fechan Woodlands		X		Potential foraging habitat
Daren Fach		X		Potential foraging habitat
Lower House Stream Section		X		Potential foraging habitat
Mynydd Llangynidr		X		Potential foraging habitat
Nant Glais Caves		X		Potential hibernation site
Penmoelallt		X		Potential foraging habitat
Tir Mawr a Dderi Hir, Llwydcoed		X		Potential foraging habitat
Waun Goch, Penrhiw-Caradog		X		Potential foraging habitat
Woodland Park and Pontpren		X		Potential foraging habitat

Table 3.1: Designated sites within 10km Radius

3.2 Preliminary Roost Assessment (PRA)

- 3.2.1 A preliminary roost assessment was conducted on 15th May 2024. Building A is a vacant, traditional built, Victorian villa. Formerly this structure provided accommodation for the adjacent theatre but both buildings have been derelict for some time. At some point in the buildings past a traditional pitched roof has been replaced with a concrete slab which covers the whole structure including the tops of the chimney flues. Windows at the western elevation have been sealed with concrete blocks. There is a courtyard present at the eastern elevation. This forms a small walled garden and sits next to a short row of linked gardens to the south. At the rear of Building A, windows are absent providing openings to the interior. Internally, the building has undergone some remedial construction work: floors have been removed although joists are on-the-whole still in place and some walls have been rendered. The staircase and front door are absent, and the door opening is secured with a steel gate. This gate provides potential access for birds and bats. Rooms along the western elevation are very dark and the concrete roof and blocked up windows provide a cool and stable environment. To the first floor, two rooms along the western elevation have intact floors. Near the redundant chimney place in the middle room, a cluster of 100+ droppings was identified. Subsequent surveys and roost inspections identified this room as being a roost for a single greater horseshoe bat. Male greater horseshoe bats are known to use caves as summer roosts and the dark stable conditions provided by this structure mimic these conditions.
- 3.2.2 Building B is located along the eastern boundary of the plot. This is a single storey structure with a flat concrete roof. Much of the building is filled with rubble but the remains of a large cast iron boiler are visible. It is presumed that this housed the boiler room for the adjacent theatre. It is also likely that Building B was built at the same time as the roof of Building A was replaced with a concrete slab, as they share the same construction. Small openings to the east provide access to the Nant Morlais. The western elevation of this structure is open to the courtyard and subsequently a through-draft from the river to the courtyard and vice-versa makes this space noticeably cooler than Building A. No evidence of bats was recorded within this structure. While not all sections of Building B were visible due to the rubble, the presence of PRFs cannot be ruled out.
- 3.2.3 No nesting birds were identified at buildings a and B during the PRA and all subsequent visits to the site.

3.2.4 In addition to the presence of bat droppings at the first floor of Building A, the structure offers one or more potential roost features (PRF) that could be used by bats due to their size, shelter, protection and conditions, the buildings are adjacent to continuous habitat connected to the wider landscape that could be used by bats for flight paths such as lines of trees (a corridor to the east). This habitat is connected to the wider landscape that could be used by bats for foraging such as trees, grassland, scrub and water (including the Whitey Park and Thomastown Park). The site is impacted by artificial lighting along the main service road, which will deter light intolerant species. The use of the identified PRF locations by roosting bats cannot be ruled out but Buildings A and B are unlikely to support a roost of high conservation status such as a maternity roost. Consequently, a stepwise approach to survey will be recommended. Following guidelines set out on Bat Conservation Trusts Good Practice Guidelines (Collins, J. (Ed.) (2023), the site has been categorised as offering a moderate risk of supporting roosting bats and this is likely suitable for low numbers of animals. However, if higher than expected numbers of bats are recorded additional survey work may be required. Ideally, one of the surveys will be conducted in June and July, during the peak breeding season.

3.2.5 Following guidelines set out on Bat Conservation Trusts Good Practice Guidelines (Collins, J. (Ed.) (2023), Buildings A and B were categorised as being of moderate risk (with breeding bats not a concern), requiring a dusk survey for bats on two occasions. This survey represented the minimum recommended number of visits to give confidence in a negative result for structures.

3.2.6 Photographic evidence supporting the PRA is presented in Appendix B.

3.3 Local Records for Bats

3.3.1 The local records provided by the local biological records centre (SEWBRc) returned 235 records for bat species locally. Some of these were too old to be considered viable. The closest (<1km) and most significant records are summarised here. There were 26 records for bats within 500m. These are of common pipistrelle, soprano pipistrelle, brown long-eared bat, lesser horseshoe and noctule. There are an additional two species recorded between 0.5-1km including serotine and a myotis. In addition, the author is aware of unconfirmed records for greater horseshoe locally, at Whitey Park and Cyfarthfa Park.

3.3.2 In total there are 12 roost records within 500m the closest being the records of common pipistrelle, lesser horseshoe bat and brown long eared bat at 175m. At 416m there are records of a common pipistrelle and brown long-eared roosts. None of these records have data for abundance. In addition, there are three further roost records at 199m, 209m, 355m 381m and 452m for common pipistrelle, soprano pipistrelle, brown long-eared bat and an unidentified bat species.

3.4 Habitat and Satellite Imagery - Suitability for Commuting and Foraging Bats

3.4.1 The River Tâf is located ≈610m to the west and the Nany Morlais (a tributary of the Tâf) runs directly adjacent to the eastern boundary of the Site. To the north and south, this tributary enters culverts, but between these features the stream is a tree-lined, providing a quality riparian habitat. The frontage (west) of Building A is exposed to high levels of artificial lighting while the rear of the structure presents darker space with linked gardens to the south. The adjacent mature trees provide connectivity north to Whitey Park and east to Thomastown Park where there is intermittent vegetation south-west towards the River Tâf. Whitey Park has good connectivity to open countryside (1.2km) with an upland characteristic which borders the settlement. This upland habitat dominates the landscape to the north, east and west. There is limited connectivity to Cyfarthfa Park. The River Tâf is a tree-lined upland river which flows south through the settlement of Merthyr Tydfil providing connectivity north to the Bannau Brycheiniog National Park (≈3km) and south through Merthyr Vale (≈7km) to Abercynon (≈12km) and Pontypridd (≈15km).

3.5 Suitability for Hibernating Bats

- 3.5.1 The features identified within the PRA are considered to offer some of the hibernating conditions that bats prefer but the structures do not provide classic hibernation characteristics due to the impact of outside air temperature and the thermal-store properties of the concrete roof - which benefits from solar gain. No cellars/underground spaces were recorded during the surveys but the concrete roofs and blocked up windows provide a relatively stable internal temperature, albeit more exposed to the fluctuating day-time air temperatures and to a greater degree than an underground site. As pipistrelle species are known to hibernate in buildings, this will need to be taken into consideration. However, the use of the structure for hibernation by other species of bat, while unlikely, cannot be ruled out. Due to the unusual nature of the structure a cautionary approach should be taken to any works undertaken in the winter months (October – April inclusive). This risk can be mitigated with the provisions of an appropriate method statement for bats. An overarching principle of this method statement should be that if hibernating animals are discovered following a detailed search, all works are to cease, and preparations made for a EPS licence application from NRW.
- 3.5.2 An additional consideration would be the nature of the existing roof. As a replacement roost will be required that will provide the same characteristics as the existing roost – this replacement roost will also provide the same opportunities during the hibernation period as does the current roost.

3.6 Activity Survey Recordings

- 3.6.1 Prior to a dusk emergence survey on 06.06.2024, an internal inspection of the first-floor rooms recorded a live sighting of a greater horseshoe bat. The animal was roosting on the surface of an internal wall. Several full spectrum recordings were made as confirmation. During the subsequent survey, two records were made of bats using Building A as a roost and a separate record made of a soprano pipistrelles using the adjacent theatre as a roost. One greater horseshoe bat and one common pipistrelle emerged from a window opening at the rear of the structure. Both passed over the courtyard, exiting over the adjacent linked gardens. In total, 29 recordings were made, including 21 of common pipistrelle (*Pipistrellus pipistrellus*), three of soprano pipistrelle (*Pipistrellus pygmaeus*), four of greater horseshoe (*Rhinolophus ferrumequinum*) and one of an unidentified bat - the recording of which were too faint to identify confidently to species level. Bat interest around Building A consisted predominantly of roosting for a small number of bats and foraging along the adjacent stream and adjacent treelines.
- 3.6.2 Prior to a dusk emergence survey on 07.07.2024, an internal inspection of the first-floor rooms recorded a live sighting of a greater horseshoe bat. The animal was roosting inside an internal chimney flue. During the subsequent survey, one record was made of a bat using Building A as a roost. Following this emergence from Thespian House, the animal entered a hole in the roof of the adjacent Theatre. Twelve minutes later the greater horseshoe re-emerged from the theatre roof confirming it's use as a night roost. Confirming the results of the subsequent survey, this animal passed over the courtyard, exiting over the adjacent linked gardens. This time however, the animals was observed exiting the gardens, heading north along the stream. The bat then flew up and down this section of the stream foraging, before headed north. Importantly, the animal passed the rear of Building B raising the possibility of the use of this structure as a replacement roost. Of the 17 recordings made, six were of common pipistrelle (*Pipistrellus pipistrellus*), three of soprano pipistrelle (*Pipistrellus pygmaeus*), six were of greater horseshoe (*Rhinolophus ferrumequinum*), one was a myotis species and one of an unidentified bat - the recording of which were too faint to identify confidently to species level.
- 3.6.3 A bat activity plan is presented in Appendix D and raw data for observations is presented in Appendix F.

3.7 Internal Static Survey

- 3.7.1 Between 30.07.2024 and 19.08.2024 an internal static presence/absence survey was conducted within the roof space of Building A. This confirmed the presence of a night roost for greater horseshoe, lesser

horseshoe bat and use of the building by common pipistrelle and soprano pipistrelle. There was also a very unusual recording of a noctule bat – not a species that habitats buildings. Due to the high volume of this recording, it is not considered that this was picked up from outside the building, but was likely a transitory visit – possibly foraging. An internal static survey at Building B return no evidence of roosting bats.

3.8 Roost Characterisation

3.8.1 During three dusk observations two bat species were recorded emerging from Building A, including, common pipistrelle and greater horseshoe bat. These are best described as a day roosts for these species. A 14-day internal static survey provided evidence for Building A being used as a night roost for greater horseshoe bat and lesser horseshoe bat. No specific bat hibernation survey works has been undertaken and therefore, taking a cautionary approach, works undertaken in the months (October-April inclusive) must therefore be avoided.

3.9 Infrared Video Survey

3.9.1 In addition to active monitoring using bat detectors, an infrared camera was deployed on the dusk activity surveys as a night vision aid (NVA).



Plates A & B: Infrared Monitoring (Image quality): showing the interior of Building B and the Rear of the property. Locations are identified in Appendix D.

3.10 Internal Data Logger

Logging Summary	Building A (Existing Roost)	Building B (Potential Replacement Roost)	Difference
Highest Temperature	27.5°C	24.4°C	3.1°C
Lowest Temperature	13.4°C	12.7°C	0.7°C
Average Temperature	17.6°C	15.8°C	1.8°C
Mean Kinetic Temperature	17.8°C	15.9°C	1.9°C
Highest Humidity	95.60%	99.00%	3.4%
Lowest Humidity	68.50%	66.80%	1.7%
Average Humidity	79.70%	92.00%	12.3%
Table 3.2: Summary of Data Logging Survey			

3.10.1 Following consultation with the Local Authority ecologist, provision was made to conduct an internal survey of temperature and humidity within the identified roost on the first floor of Building A, and also at the interior of Building B - which is a potential alternative roost site. A summary of the results is presented

below. The results will be evaluated in Section Four of this report.

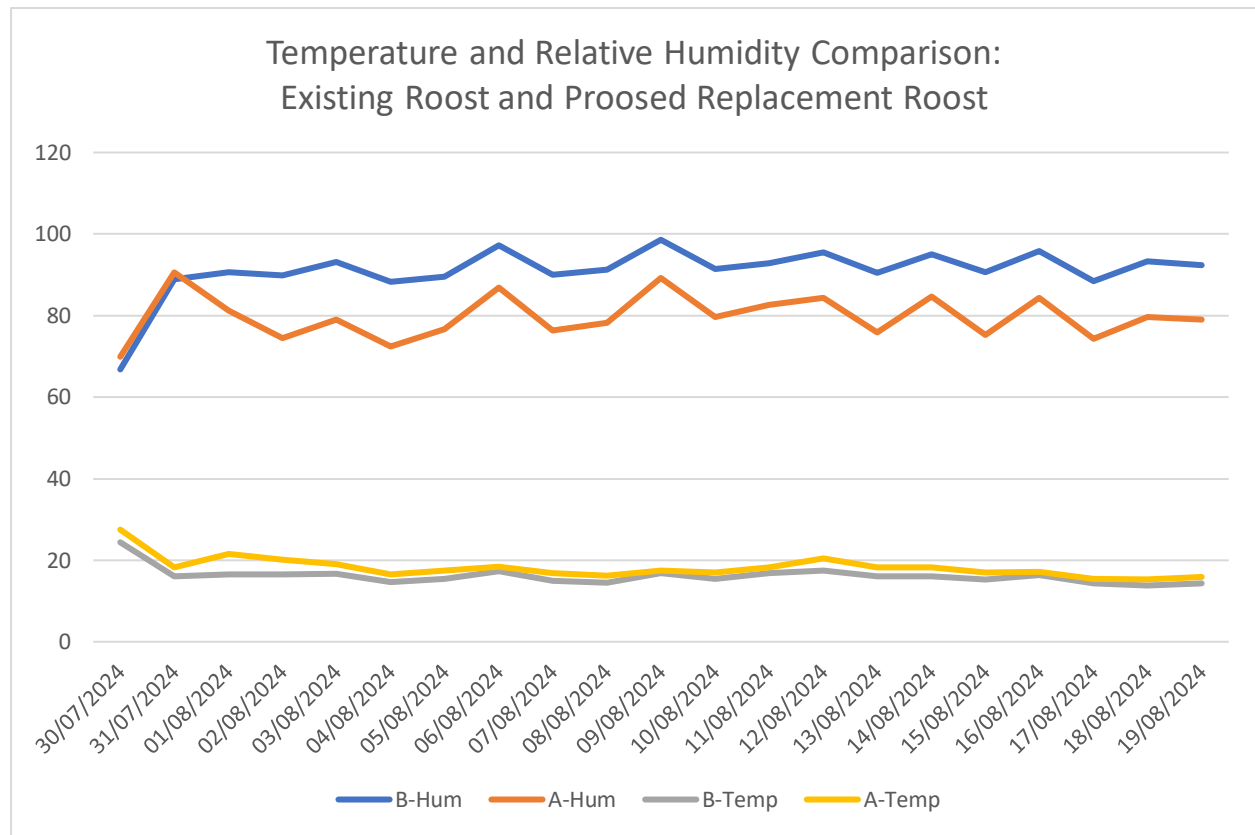


Figure 3.1: Graph of Data-logging Results

B-Hum = Building B (Humidity)

A-Hum = Building A (Humidity)

B-Temp = Building B (Temperature)

A-Temp = Building A (Temperature)

3.11 Field Survey Details & Weather Conditions

Date	Timings (BST)		Notes, Sunset Times	Weather Conditions		
	Start	End		Variable	Start	End
15.05.2024	09.45	11.00	Preliminary Roost Assessment	Temp (°C)	16.2	19.8
				Cloud Cover (Oktas)	8	8
				Precipitation	Nil	Nil
				Beaufort Scale	F1	F1
16.06.2024	21.15	22.50	Dusk Activity Survey Sunset: 21.37	Temp (°C)	16.0	13.1
				Cloud Cover (Oktas)	0	0
				Precipitation	Nil	Nil
				Beaufort Scale	F0	F0
07.07.2024	21.15	22.55	Dusk Activity Survey Sunset: 21.32	Temp (°C)	16.5	12.9
				Cloud Cover (Oktas)	1	0
				Precipitation	Nil	Nil
				Beaufort Scale	F1	F0

Table 3.3: Field Survey Details and Weather Conditions

3.12 Additional Ecological Constraints (Results)

3.12.1 While access was available to all areas, the derelict nature of the structures restricted a detailed

examination in all areas, although all areas were visible. In bat emergence surveys, standard protocols generally recommends that surveys last from sunset until at least 1.5–2 hours after sunset, as this period encompasses the peak emergence and early foraging times for most bat species. However, there can be specific justifications for ending a survey earlier than recommended. In this instance, very low bat activity led to a decision to end the surveys at 1 hour and 13 and 1 hour 23 minutes following sunset. The early survey termination was warranted and was done so without any significant concerns over impacting the outcome and survey results.

3.13 A Summary of Evidence

Survey Location	Species (Recorded)	Notes
Building A	Greater horseshoe bat Common pipistrelle Soprano pipistrelle Lesser horseshoe Noctule and a myotis species, plus droppings for greater horseshoe bat.	Droppings: 100+ droppings were recorded on the floor, directly in front of the chimney (1 st floor, middle room). There were some scattered droppings throughout the space. Live sightings: During three internal roost inspections one greater horseshoe bat was recorded. All these records were made in the 1 st floor middle room at the western elevation. Three roosting locations were identified, high up on opposite walls and inside the chimney flue. During two dusk observations, two bat species were recorded emerging from Building A. Observations and recordings made were of bats foraging and commuting, around Building A. Roost Type: Days roost for one greater horseshoe bat and one common pipistrelle. Night roost for a minimum one greater horseshoe bat and one lesser horseshoe bat.
Building B	None recorded.	Droppings: None identified. Live sightings: None recorded. Roost Type: None identified.

Table 3.4: Summary of Evidence

3.14 Impact Assessment

- 3.14.1 The nature conservation significance of the site is considered against recognised criteria (Bat Mitigation Guidelines 2023¹ and Good Practice Guide: NRW Approach to Bats and Planning October 2015 and IUCN Red List of Threatened Species). Bat Mitigation Guidelines (2023), state that Lesser horseshoe bats are in the following rarity category for South Wales – “Rarer or restricted distribution” and Greater horseshoe bats are in the following rarity category for South Wales – “Rarest Annex II species and very rare”. Bat Mitigation Guidelines (2023) also state that non-breeding day roosts for small numbers of Annex II species (in this case LHS and GHS) are of Site/Local/District importance depending on local distribution. Night roosts for Annex II species (in this case GHS) are of Site importance, with very well-used night roosts maybe having district importance for some species. The nature conservation status of the site is assessed to be moderate due to the presence of these species and roost types. If unmitigated, the scale of this development is considered to affect the local bat population, with a moderate risk of detrimental impacts to the conservation status at a local level. Four species were identified commuting/foraging near Building A; common pipistrelle, soprano pipistrelle, greater horseshoe bat and a myotis species. In addition, the droppings of lesser horseshoe bat were identified within the structure (Least Concern – IUCN Red List). A cautionary approach will be recommended to mitigate impacts on commuting and foraging bats.

SECTION FOUR: CONCLUSIONS

- 4.1 During three dusk emergence surveys conducted between May and July of 2024, evidence was recorded of two bat species using Buildings A as a day roost including one greater horseshoe bat and one common pipistrelle. Of the 47 recordings made, four species were identified foraging and commuting near the site. The majority of observed behaviour was for animals foraging around the adjacent stream and along adjacent treelines. Species identified during the survey effort included greater horseshoe bat, common pipistrelle, soprano pipistrelle, noctule bats, brown long-eared, and an unidentified myotid bat.
- 4.2 During a 14-day internal static presence/absence survey conducted between July and August of 2024,

¹ 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.

evidence was recorded of two bat species using Building A as a day roost and/or foraging to the interior, including: greater horseshoe bat, lesser horseshoe bat, common pipistrelle, soprano pipistrelle and noctule. The structure is most likely a day-roost and night roost for greater horseshoe bats an incidental night roost lesser horseshoe bats. Use by other species is considered incidental. The findings of this report are consistent with local records.

The proposed works will impact the whole structure including the roof and will directly impact the roost entrance for these species.

- 4.3 Male greater horseshoe bats are known to use caves as roosts during the summer months² and the fabric of Building A, having a concrete roof and blocked up windows is consistent with this. When considering a proposed replacement roost for this species we need to carefully consider the suitability of Building B to replicate the existing conditions of the existing roost by interrogating the results of the data logging survey and deliberating the most suitable location of any proposed roost entrance.
- 4.4 Overall, the temperature and humidity levels at both sites are similar, with the temperature being slightly lower at Building B and the Humidity levels being lower at Building A. Both of these are consistent with Building B currently being open to the east and west, and consequently subject to a movement of air through the structure. The movement of air would cause a reduction in temperature and increase the movement of humid air from the adjacent stream. Conversely, Building A is only open to the east and has no through-flow of air, resulting in slightly more stable characteristics. In terms of the suitability of Building B as an alternative roost site, the variations in the finding would most likely be addressed but restricting air flow through Building B. An additional consideration is the location of building B directly adjacent to a fast-flowing stream, a feature which may impact humidity levels although by reducing the movement of air through the structure this would also be reduced. The owner has stated their intention to turn over the whole of Building B for the purpose of building a suitable replacement roost.
- 4.5 During the dusk activity surveys, the greater horseshoe bat passed through the courtyard into the adjacent linked gardens. Following this the same animal was recorded foraging in both directions past the eastern elevation of Building B. In terms of the most suitable location of an alternative roost entrance, the eastern elevation offers far less levels of human disturbance and lower light levels but would require appropriate measures to prevent predators entering the structure, in addition to a management plan - to avoid a potential roost entrance becoming blocked by vegetation.
- 4.5.1 No specific bat hibernation survey works has been undertaken and therefore, taking a cautionary approach, works undertaken in the months (October-April inclusive) must therefore be avoided.
- 4.6 All bat species and their places of rest are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), and the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. The legal protection for bats concerns impacts from disturbance, loss of roost locations, modifications to roosts and loss of access or obstruction to roost locations. As impacts of this nature will arise during the proposed works, a European Protected Species (EPS) licence will be required from NRW before any work is done which affects the roosts and the bat exit/entry points. A licence is required at this time. In the event that works do not start within two years (i.e., August 2026) further survey and assessment will be necessary to qualify the results of this report and its recommendations. If at any point during works a protected species is encountered on-site, it is essential that all work is to cease and that a suitably experienced ecologist is contacted for advice.
- 4.7 As pipistrelle species are known to hibernate in buildings a precautionary approach will be followed with reference to the wall plate, lintels, window frames and any exposed cavities for any works conducted during the winter months (October to April inclusive).

² <https://www.bats.org.uk/about-bats/what-are-bats/uk-bats/greater-horseshoe#:~:text=Males%20also%20use%20caves%20and,and%20tunnels%20as%20hibernation%20sites.>

- 4.8 Building A supports several features that could be exploited by nesting birds, e.g., house sparrows (*Passer domesticus*). A cautionary approach is recommended.

SECTION FIVE: RECOMMENDATIONS

- 5.1 Based on the results of this report, it is recommended that the following conditions be included in the plans.
- 5.2 **Recommendation 1 (Applying for an EPS Licence):** Building A supports a summer day roost for x1 greater horseshoe bat, x1 common pipistrelle bat and a night roost for a minimum of x1 greater horseshoe bat and x1 lesser horseshoe bat. Bats and their breeding sites and resting places are protected under the Conservation of Habitats and Species Regulations 2019. Where these species are present and a development proposal is likely to contravene the legal protection, they are afforded, the development may only proceed under licence issued by NRW, having satisfied the three requirements set out in the legislation. A licence may only be authorised if:
- The development works to be authorised are for the purpose of preserving public health or safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment;
 - There is no satisfactory alternative; and,
 - The action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in its natural range.
- 5.3 Subject to planning consent being granted by the local planning authority, an EPS licence will be required to facilitate the proposals. The EPS licence is issued under Regulation 55 of the Habitats Regulations by NRW. Once the planning application has been approved, the applicant must appoint a suitably qualified ecologist, known as the Ecological Clerk of Works (ECW), to prepare;
- European Protected Species Licence - Application form
 - European Protected Species Licence - Method Statement
 - The application form and method statement are prepared to detail how the requirements of the Habitats Regulations will be met for managing the effects on bats during the renovation works. In addition, the applicant is also required to collate and pass on to the appointed ecologist the following documents:
 - A copy of the 'Local Planning Authority Decision Notice.'
 - A copy of either the Delegated Decision report or committee meeting minutes (whichever format was used to approve the planning application).
 - Local Planning Authority Consultation Form.
 - Architects' drawings containing the location of the bat mitigation measures (detailed below), any proposed external lighting and any proposed changes to the landscaping around the development.
- 5.4 Once the planning application has been approved, it is advised that the ecologist is engaged as early as possible as there can be a waiting time of approximately 40 working days / 8 calendar weeks for NRW to process the application, in addition to the time it takes to prepare and collate the documents. NRW now charge for issuing an EPS licence, but the exact charge is assessed on a case-by-case basis. It is not possible at this time to indicate what any likely charge might be.
- 5.5 **Additional Survey:** No further survey is recommended at this time. If works do not start within two years (i.e., August 2026) further survey may be necessary to qualify the roost status and recommended adaptations (if required) to the mitigation measure detailed below.

Timing of Works: The day roosts identified at Building A are considered to be of low conservation significance (Mitchell-Jones 2004) with breeding bats, not a concern. Thus, works will not be restricted by time of year. The main concern is absolute harm to the bats themselves, which will be mitigated by the

presence of a licenced Ecological Clerk of Works (ECW) and the provision of temporary roosting opportunities.

5.6 **Order of Works:** Appropriate works for the development at Building A will include:

- The creation of the new roost (Building B) must be undertaken prior to the works on Building A.
- The provision of a temporary roosting location prior to works commencing.
- The capture/exclusion of bats at the start of works.
- The modification/replacement of existing roosts.
- The creation of a new roost.
- Provision of appropriate external lighting.

5.7 **Capture/Exclusion of Bats & the Start of Work:** An Ecological Clerk of Works (ECW) will need to be appointed to advise the best location for a new night roost, a new bat roost, the temporary bat boxes and features of mitigation. The ECW will also provide a toolbox talk to the building contractor on the specific requirements relating to bats and will remain on-site during specific works such as the erection of scaffolding, if applicable, and stripping of bat roost features. They will also be on-site when the roosts are to be modified, creation of new roosting features and prior to the strike of scaffolding, to inspect the placement and suitability of new roosting features. Once scaffolding has been erected or a cherry-picker/telehandler is on-site, the ECW will attend the site to apply exclusion devices (if required) to the known roosting locations, in the form of a one-way gate using acetate sheets, bubble wrap or other effective material. If exclusion is used, it must be carried out fully in line with the advice given in the UK Bat Mitigation Guidelines (2023). Works may commence the day after, following a toolbox talk given to all site workers by the ECW about bats and bat behaviour. Due to the complexity of the site and numerous roosting locations available the ECW will need to be present during removal of materials from significant areas of the building including roofing materials at the eaves. At the same time that the exclusion devices are affixed, two, 'Eco Kent,' bat boxes³ (The Nestbox Company - or similar) are to be installed on or adjacent to Building A. This is ideally done by constructing a roost within Building B. Provided the boxes will remain unaffected by artificial light, they may be erected on part of the structure that is to remain unaffected by works (including scaffolding), i.e., the boxes will not need to be removed to complete the works and then re-attached. The ECW will advise on the suitable locations for the boxes, which may include the installation of a free-standing pole, such as those used with, 'Rocket Bat Boxes'⁴ (The Nestbox Company -). In addition, a suitable structure to act as a temporary day roost for greater horseshoe bats will be provided – in this instance this will be accommodated within Building B. Works may start with the stripping of the barge boards and roofing materials, to expose the roosts and to discourage further roosting activity by bats. The activity must be undertaken with a sympathetic approach where all roof coverings, barge boards will be removed carefully, by hand, i.e., lifting vertically to prevent scraping. When all roosting features have been removed, works may proceed without supervision by the ECW. In the unlikely event that a bat is discovered during a time when the ECW is not present on-site, all works must cease and the ECW contacted for advice before proceeding. All works to be undertaken in daylight hours with no artificial lighting.

5.8 **The Modification / Replacement of Existing Roosts:** As day roosts for greater horseshoe bats and common pipistrelles will be destroyed during works, provision must be made to the altered structure to provide suitable features post-development. This will include the provision of an artificial 'cave' roost (greater horseshoe bat) and surface mounted bat boxes (common pipistrelle). The new 'cave' roost to be fitted with block-built baffles to restricted internal movement of air, and the eastern elevation will be blocked off (save for an access door) to stabilise internal temperature and humidity levels. In addition, new artificial roosting locations will be provided inside the new roost, including a cool-room or cool-tower. New or replacement timbers for the roof frame and fascia boards on Building A must be checked to ensure there is no use of chemicals harmful to bats. An entrance for the new 'cave' roost to be provided facing the adjacent stream, at the eastern elevation, to include a block-built turnstile baffle, a

³ <https://www.nhbs.com/eco-kent-bat-box>

⁴ <https://www.nestbox.co.uk/products/eco-rocket-bat-box>

sloping (polished metal) entrance sill (to deter nesting birds), a polished metal exterior skirt (to prevent predators from climbing in) and a method of preventing or managing vegetative grows so that the entrance doesn't not become inaccessible.

- 5.9 **The Creation of a New Roost:** To encourage bat roosting activity and increase roosting opportunities on-site post-development, it is recommended that new roosting opportunities are provided as part of the development. Two new roosting locations will be positioned to allow bats to moderate temperature variations in the summer months. These features will be fixed to the exterior of the structure, below the eaves.
- 5.10 **Recommendation 2 (Post Development Lighting Scheme):** To prevent any adverse impact upon the potential roosting, commuting and foraging habitats for bats adjacent to Buildings A and B (post development), specifically on the adjacent stream and mature trees, a sensitive lighting scheme is recommended and must be created. The lighting plan for the site must be functional and directional only and kept to a minimum servicing the public areas of the proposed development (as required for safety and security). It must be achieved using baffles and screens, if necessary, to ensure no light spill on any retained or planted vegetated (including off-site vegetation - e.g., there is a potential to impact animals using the nearby habitat features). The sensitive lighting scheme must follow advice details in 'Bats and Artificial Lighting in the UK: Technical Guidance Note 08/23' (2023)⁵ (Please refer to Appendix F).
- 5.11 **Recommendation 3 (Lighting During Development):** As a European Protected Species, disturbance of bats during foraging/commuting, even if accidental, is to be avoided. It is therefore recommended that the use of artificial lighting during the development of the site is avoided. External lighting must be restricted during the development period to that which is necessary for safety and security. This must be kept to a minimum (Appendix F).
- 5.12 If any development is to be conducted between March and September (inclusive), efforts must be made to avoid any adverse impacts on the commuting and foraging of bats near the site. External lighting must be restricted during the development period to that which is necessary for safety and security. This must be kept to a minimum.
- 3.14.2 **Recommendation 4 (Hibernation)** No specific bat hibernation survey works has been undertaken and therefore, taking a cautionary approach, works undertaken in the months (October-April inclusive) must therefore be avoided.
- 5.13 **Recommendation 5 (Nesting Birds):** All nesting birds, their chicks' eggs and active nests are protected under the Wildlife and Countryside Act 1981 (as amended). If a nest is discovered during works and is active, it must be left undisturbed until all the chicks have fledged. If any features associated with nesting birds are required to be altered during the bird breeding season, then a further inspection by a suitably qualified ecologist is required no more than 24 hours before this process commences. If an active nest is found by a site inspection, an exclusion zone around the nest will be necessary to preserve this feature until the chicks have fledged the nest.
- 5.14 These measures will allow the development to conform to current protective legislation as laid out in the Wildlife and Countryside Act 1981 (plus amendments)⁶.
- 5.15 **Recommendation 6 (Enhancement features)** Implementation of the enhancement features for net-gain biodiversity as outlined in the green infrastructure statement.

SECTION SIX: BIODIVERSITY ENHANCEMENT

⁵ <https://www.bats.org.uk/news/2023/08/bats-and-artificial-lighting-at-night-ilp-guidance-note-update-released>

⁶ <https://www.legislation.gov.uk/ukpga/1981/69>

- 6.1 In accordance with the provision of Chapter 6 of Planning Policy Wales (Distinctive and Natural Places) and Local Planning Policy, biodiversity enhancement measures should be incorporated into the landscaping scheme of any proposed works to maximise the ecological value of the site (Appendix G).
- 6.2 **Enhancements Features:** Under the Environment (Wales) Act 2016, public authorities (including local councils and the National Parks), 'must seek to maintain and enhance biodiversity in the exercise of functions; in relation to Wales, and in so doing promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions.' This replaces the section 40 duty in the Natural Environment and Rural Communities Act 2006 (NERC Act 2006), in relation to Wales, which states that; 'All public authorities have a statutory duty to conserve biodiversity in all of their functions.'
- 6.3 Local authorities are legally required to make efforts to protect and enhance wildlife and its habitat and this is executed, in part, through the requirement of an ecological assessment for planned development sites and, therefore, we recommend the following principles of design should be followed.
- 6.4 This is an enclosed urban site with a small rear yard along the western boundary. As such recommendations have been made
- 6.5 **Enhancement for Bats:** In line with the National Planning Policy Framework, the development should aim to enhance the Site for bats. Two artificial roosts should be installed on the southern or western elevation with the purpose of providing a roosting habitat for species such as pipistrelle⁷. In general, bats seek warm places and for this reason boxes should be located where they will receive full/partial sun, although installing features in a variety of orientations will provide a range of climatic conditions. Position boxes at least 3m above ground to prevent disturbance from people and/or predators.
- 6.6 In addition, the provision of a replacement roost for the identified greater horseshoe bat, offers an opportunity to increase opportunities for hibernating locally. By adding appropriate features to the proposed replacement roost, it would not only provide the conditions required for summer roosting great horseshoe bats, but also the hibernations conditions required for all locally recorded bat species. This can be achieved with the provision of internal baffles and cool-boxes or cool-towers. These features will provide a range a differing micro-habitat and allow bats to moderate their temperature throughout the summer and winter months.
- 6.7 **Enhancements for Birds:** This area is to be enhanced to provide additional opportunities for breeding birds. One 1SP Schwegler Sparrow Terrace⁸ (or similar) be attached to the eastern elevation, below the eaves. The nesting box must be of a woodcrete construction to ensure longevity.

SECTION SEVEN: ADDITIONAL INFORMATION

7.1 ENCOUNTERING A PROTECTED SPECIES DURING WORKS

- 7.1.1 If at any point during works a protected species is encountered on-site, it is essential that all work is to cease and that a suitably experienced ecologist is contacted for advice.

7.2 EXPIRATION OF THIS REPORT

- 7.2.1 This report is valid for two years. In the event that works do not start within two years of the date of the original survey (i.e., August 2026) further survey and assessment will be necessary to qualify the results of this report and its recommendations.

⁷ https://www.wildcare.co.uk/beaumaris-bat-box.html?gad_source=1&gclid=CjwKCAiw65-zBhBkEiwAirqRMLWbfTavFlgGTv2ry0OGQEWnqN0eVseleG460NUFfHmi6NAF2TcGZhoCsKEQAvD_BwE

⁸ <https://www.nhbs.com/1sp-schwegler-sparrow-terrace>

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Appendix B: Site Photography



Plate 1 – Western elevation of Building A facing main service road showing flat concrete roof and blocked up window openings.



Plate 2 – Southern elevation showing blocked up windows. Arrow showing gaps between the blockwork and window opening.



Plate 3 – Gated doorway at the main service road providing access to the interior.



Plate 4 – Rear elevation of building B showing location of roost entrance used by greater horseshoe bat and on one occasion by a common pipistrelle.



Plate 5 – Taken at the entrance of Building B – from the central courtyard, facing east.



Plate 6 – Interior of building B showing rubble infill and small remaining opening at the adjacent stream.



Plate 7 – Ground-floor, rear room – window opening to the courtyard.



Plate 8 – First floor – roost entrance from the interior.



Plate 9 – First floor, middle room. Identified as a summer roost for a single greater horseshoe bat – most likely a lone male. Circle showing the location of a cluster of droppings. Arrows showing location of live sightings.



Plate 10 – Cluster of droppings identified within the roost.

Appendix C: Meet our Survey Team

Nic Aldridge (NA) is an ecologist with Little Wing Ecology and the author of this report. He is a licensed bat worker (S091427/1) with over 20 years' experience in education and conservation and over seven years' experience surveying built-structures, open habitats, and woodlands for bats. Following a degree in Botany and Zoology, Nic completed an MSc in Wildlife Management, Conservation and Control, at the University of Reading. He has practical experience in field-based research with a focus on invertebrate and vegetation diversity and producing phase 1 habitat surveys and habitat management plans. He is experienced in hand netting common pipistrelle and soprano pipistrelle from maternity roosts, has carried out the ringing of Daubenton's bats as part of a multi-year project on the species and has undertaken monitoring work on several important lesser horseshoe bat roosts. Nic writes EPS licence applications, ecological reports and provides Ecological Clerk of Works services. He has attended courses with the Bat Conservation Trust to improve his knowledge and skills and has led voluntary projects to develop habitats and collect species data. Nic founded Little Wing Ecology in 2021 as a not-for-profit, to use the skills and expertise of an ecological consultancy to work with the local community, support local conservation projects and provide training and education for the next generation of ecologists.
Elizabeth Winstanley (LW) is a Nature Recovery Officer with the large Conservation Organisation and a wildlife surveyor with Little Wing Ecology. She has over seven years' experience working in practical conservation. Following a degree in Outdoor Education, Liz volunteered with a Wildlife Trust before taking on her current responsibilities. She has held her current position since 2015. During this time, Liz has undertaken numerous surveys and monitoring projects, including work on butterfly transects, phase 1 habitat surveys, reptile and amphibian surveys, upland monitoring, BTO bird box round, dormouse training and recording, bumblebee conservation – bee walks and many more. Currently Liz is responsible for the management of seven Nature Reserves including four SSSI's. Liz has also attended several training sessions to develop her knowledge, understanding and practical skills in bat monitoring and bat ecology.
Tracey Cotterell (TC) is a Learning Coach with Blaenau Gwent Learning Zone (Coleg Gwent) and a wildlife surveyor with Little Wing Ecology. Tracey has a lifelong love of nature and enjoys spending her spare time volunteering with organisations such as The Welsh Wildlife Trusts, Blaenavon Heritage and Coleg Gwent Equine department. She enjoys being outdoors, whether in a working capacity or for personal interest such as running, riding, or surfing. She has volunteered throughout her life in roles as varied as an NHS First Responder, to working for the Wildlife Trust. During this time, she has gained skills in volunteering with environmental conservation matters, and through being a signaller in a search and rescue team. Tracey enjoys the responsibility of conserving the surrounding environment, learning, and helping to regulate human activities to minimise direct and indirect negative impacts on both flora and fauna. Tracey has also attended several training sessions to develop her knowledge, understanding and practical skills in bat monitoring and bat ecology.
Yvette Amos (YA) is a civil servant with Companies House and a wildlife surveyor with Little Wing Ecology. She has a lifelong love of nature and enjoys spending her spare time and vacations centred around nature and wildlife focused destinations. Yvette enjoys being outdoors, where she expresses her love of photography along with her interest in the natural world. She is experienced in data collection at a high level, having formerly worked for Cardiff University, School of Social Sciences and Computer Science. Yvette has attended several training sessions to develop her knowledge, understanding and practical skills in bat monitoring and bat ecology and is dedicated to gaining experience in nature conservation, wildlife management and ecology.
Richard Farr (RF) is a full-time student studying ecology/conservation science and a wildlife surveyor and assistant author of this report. Richard has a life-long love of nature and had previously worked with the Gwent Wildlife Trust, where he gained a wide set of practical skills and experiences which have developed his knowledge and understanding of ecology and conservation at a range of the Trust's Local Nature Reserves. He has also recently completed his second year of reading for a Bachelor's Degree in Ecology at University of the West of England (UWE), which has allowed him to develop knowledge and skills in numerous areas including; field/survey techniques, geographical information systems, habitat management/identification, data collection with analysis and RStudio. He has attended multiple training sessions to further develop skills and knowledge in bat monitoring, bat ecology, conducting surveys and associated reports.
Libby Cotterell (LC) is a full-time student and a wildlife surveyor with Little Wing Ecology. She has a lifelong love of nature and the outdoors and enjoys learning new skills and engaging in practical work, in order to have a positive impact on local conservation issues. Libby has attended several training sessions with Little Wing Ecology to develop her knowledge, understanding and practical skills in bat monitoring and bat ecology.
Elise Winstanley (ELW) is a full-time student and a wildlife surveyor with Little Wing Ecology. She runs a college newspaper and is committed to community engagement. Elise is currently studying law, psychology and criminology at A Levels, and has a keen interest in nature and habitat preservation. Libby has attended several training sessions with Little Wing Ecology to develop her knowledge, understanding and practical skills in bat monitoring and bat ecology.
George Harley (GH) is a full-time student and a wildlife surveyor with Little Wing Ecology. He has a love of the outdoors and enjoys learning new skills and engaging in practical work. George has attended several training sessions with Little Wing Ecology to develop his knowledge, understanding and practical skills in bat monitoring and bat ecology.

Reviewer(s)

Sam Haycock (SH) is a founding director of Little Wing Ecology and a commercial assurance executive with a national company. Sam has over 20 years' experience in the education sector and four years' experience managing two rural enterprise companies, of which she was a director for three years. She brings a broad range of interdisciplinary skills to her role at Little Wing Ecology where she has responsibility for editing, reviewing, data management and finances. In 2021, Sam became a founding director of Little Wing Ecology, as a social enterprise, that aims to use the skills and expertise of an ecological consultancy, to work with the local community, support local conservation projects and provide training and education for the next generation of ecologists and conservationists.

Appendix D: Survey Plan & Bat Activity

Date: September 2024

Produced by: Little Wing Ecology

Our Reference: LT180-BAS-24

Author: N S Aldridge

Legend

- ▲ Droppings (Clusters)
- ◆ Roost entrance(s)
- Location of surveyors (08.07.2024)
- Location of surveyors (16.06.2024)
- Location of passive survey
- Location of data-loggers
- Building(s)
- Boundary
- Flight path of greater horseshoe
- Flight path of all other bats



QGIS Development Team, <2024>. QGIS Geographic Information System. Open-Source Geospatial Foundation Project.

Appendix E: Activity Survey – Recordings (Raw data)

DATE	Time (start)	Time (end)	SPECIES (COMMON)	No	Surveyor's Position	OBSERVER'S NAME	COMMENT	CLASS OF SITE
15.05.2024	9.45	11.00	Greater horseshoe	1	Internal inspection	Nic Aldridge	A cluster of droppings found during a preliminary roost inspection, later confirmed as greater horseshoe.	Day Roost
06.06.2024	20.45	20.46	Greater horseshoe	1	Recorded during roost inspection	Richard Farr	Recorded outside roost entrance.	Day Roost
06.06.2024	21.31	22.11	Common pipistrelle	3	East	Richard Farr	Live sighting and recording	Foraging
06.06.2024	21.41	21.59	Common pipistrelle	6	East	Richard Farr	Digital recording	
06.06.2024	21.53	21.53	Soprano pipistrelle	1	East	Richard Farr	Live sighting and recording	Day Roost - Emerged from the theatre next door.
06.06.2024	21.55	21.55	Soprano pipistrelle	1	East	Richard Farr	Live sighting and recording	Foraging
06.06.2024	22.37	22.37	Soprano pipistrelle	1	East	Richard Farr	Digital recording	
06.06.2024	21.29	21.29	Chiroptera	1	East	Richard Farr	Digital recording	
06.06.2024	21.59	21.59	Greater horseshoe	1	Central	Nic Aldridge	Emergence	Day Roost
06.06.2024	20.40	20.45	Greater horseshoe	1	Central	Nic Aldridge	Internal inspection	Day Roost
06.06.2024	21.43	21.54	Greater horseshoe	1	Central	Nic Aldridge	Live sighting	Sampling behaviour recorded at rear window opening.
06.06.2024	22.00	22.00	Common pipistrelle	1	Central	Nic Aldridge	Emergence	Day Roost
06.06.2024	21.31	21.17	Common pipistrelle	5	Central	Nic Aldridge	Live sighting and recording	Foraging
06.06.2024	21.49	21.52	Soprano pipistrelle	2	Central	Nic Aldridge	Live sighting and recording	Foraging
06.06.2024	20.10	20.10	Common pipistrelle	1	West	Samantha Paterson	Live sighting and recording	Foraging
06.06.2024	20.04	22.41	Common pipistrelle	5	West	Libby Cotterell	Digital recording	
07.07.2024	21.49	22.24	Soprano pipistrelle	3	East	Richard Farr	Digital recording	
07.07.2024	21.55	22.37	Common pipistrelle	2	East	Richard Farr	Digital recording	
07.07.2024	22.03	22.04	Greater horseshoe	3	East	Richard Farr	Live sighting and recording	Foraging
07.07.2024	21.20	21.56	Common pipistrelle	3	West	Samantha Paterson	Digital recording	
07.07.2024	21.55	21.55	Greater horseshoe	1	Central	Yvette Amos	Live sighting and recording	Day Roost - Emergence from rear window opening.
07.07.2024	21.49	21.49	Greater horseshoe	1	Central	Yvette Amos	Live sighting and recording	Sampling at rear window opening.
07.07.2024	20.01	20.01	Common pipistrelle	1	Central	Yvette Amos	Live sighting and recording	Night - roost - Emergence from roof of adjacent theatre, following an earlier emergence from Thespian House.
07.07.2024	21.56	21.56	Chiroptera	1	Central	Nic Aldridge	Digital recording	Weak signal.
07.07.2024	22.20	22.20	Myotis spp.	1	Central	Nic Aldridge	Digital recording	Weak signal.
05.08.2024			Greater horseshoe	1	First floor, front room.	Nic Aldridge	Digital recording - internal static survey.	Night Roost
31.07.2024			Common pipistrelle	1	First floor, front room.	Nic Aldridge	Digital recording - internal static survey.	Night Roost
03.08.2024			Soprano pipistrelle	1	First floor, front room.	Nic Aldridge	Digital recording - internal static survey.	Night Roost
02.08.2024			Lesser horseshoe	1	First floor, front room.	Nic Aldridge	Digital recording - internal static survey.	Night Roost
31.07.2024			Noctule	1	First floor, front room.	Nic Aldridge	Digital recording - internal static survey.	

Appendix F: Bat Friendly Lighting Scheme

Bat sensitive lighting schemes must follow advice details in 'Bats and Artificial Lighting in the UK: Technical Guidance Note 08/23' (2023) and comprise of: <https://www.bats.org.uk/news/2023/08/bats-and-artificial-lighting-at-night-ilp-guidance-note-update-released>

To prevent any adverse impact upon the potential roosting, commuting and foraging habitats for bats adjacent to the Site (post development), specifically on the nearby mature trees, a lighting plan is required. Lighting for the site must be functional and directional only and kept to a minimum servicing the public areas of the proposed development (as required for safety and security). It must be achieved using baffles and screens, if necessary, to ensure no light spill on any retained or planted vegetation (including off-site vegetation - e.g., there is a potential to impact animals using the nearby habitat features).

- A sensitive lighting scheme is recommended and must be created. The sensitive lighting scheme must follow advice details in 'Bats and Artificial Lighting in the UK: Technical Guidance Note 08/23' (2023) and comprise of:
- Light fixtures, filaments, light spill and artificial light must be directed away from bat roost entrances, both existing and those to be created as part of the mitigation.
- Luminaries are to be LED only, due to their sharp cut-off, lower intensity, good colour rendition and dimming capability. Luminaires must have a warm white spectrum (ideally <2700 Kelvins), reducing the blue light component and increasing the red-light component.
- Luminaries must feature peak wavelengths high the 550nm to avoid the component of light most disturbing to bats.
- Heights of fixtures must be carefully considered to minimise light spill. Only luminaries with an upward light ratio of 0% and with good optical control must be used.
- Luminaries must always be mounted on the horizontal, i.e., no upward tilt.
- Any external security lighting must be set on motion sensors and short (15 second) timers.
- As a last resort, accessories such as baffles, hoods or louvres must also be used, and directed away from any natural features and must not encroach outside the Site boundaries, particularly the surrounding trees, hedgerows, and other vegetation in the landscape.

Appendix G: Policy and Legislation in Wales

Under Regulations 9 (1 & 5) of the Habitat Regulations, local authorities have a duty to have regard for the requirements of the Habitats Directive. This includes maintaining populations of European Protected Species in “favourable conservation status”, and potential for such protected species (for example, bats) should be considered when carrying out a preliminary assessment.

The framework for this protection is provided within several pieces of legislation from the Government of Wales and the UK Government. Furthermore, several pieces of legislation exist that are specifically relevant to individual species. These include:

- Conservation of Habitats and Species Regulations 2010.
- The Conservation of Habitats and Species Regulations (2017) - as amended.
- The Environment (Wales) Act 2016.
- The Wildlife and Countryside Act (1981) - as amended.
- Natural Environment and Rural Communities Act 2006.
- Conservation of Habitats and Species Regulations 2017.

Additional information on the legal scope of these acts can be found in the Appendix and a link to the full documentation can be found in, the references and bibliography section, and the Appendix.

Policy	Description
The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019	Bats are specifically protected by (The Habitat Regulations). The Habitat Regulations are the way in which EU legislation is transposed into UK law. All species protected via this legislation are defined as ‘European Protected Species.’ The Habitat Regulations make it an offence to deliberately capture, kill, disturb, or trade in European Protected Species (i.e., those listed on Schedule 2), of which all UK bats are included. However, these actions can be made lawful through the granting of a license by Natural Resources Wales (NRW). Licenses may be granted for a number of purposes but only after the LPA and NRW is satisfied that there are no satisfactory alternatives and that such actions will have no detrimental effect on the wild populations of bats.
The Environment (Wales) Act 2016	Section 7 of the Environment (Wales) Act 2016 requires all statutory authorities including Local Planning Authorities (LPA) to have due regard for living organisms and types of habitats that are of key significance to sustain and improve biodiversity in relation to Wales. Furthermore, the LPA have a duty under the Act to take all reasonable steps to maintain and enhance the living organisms and types of habitats included on any list published under Section 7 and to encourage others to take such steps.
Wildlife and Countryside Act 1981 (as amended)	The Wildlife and Countryside Act 1981 (as amended) (The WCA 1981) is the principal legislation by which most species are protected in Wales. Bats are protected under Schedule 5 of the WCA 1981, which makes it an offence to damage or destroy a bat roost; intentionally or recklessly disturb a bat or a roost, or intentionally or recklessly obstruct access to a roost. The interpretation of a bat roost is “any structure or place which any wild [bat]...uses for shelter or protection”. Because bats tend to reuse the same roosts, the legal opinion is that the roost is protected whether or not the bats are present at the time. In relation to birds, the WCA 1981 makes it an offence to intentionally kill, injure or take any wild bird; take, damage, or destroy the nest of any wild bird while that nest is in use or being built. Schedule 1 of the WCA Act 1981 includes bird species for which addition the additional offence of disturbing these species at their nests or their dependent young.

Bats and the Law

All species of bats are protected throughout the UK. However, there are differences in approach to the protection of bats taken by the different devolved administrations. This means that bat mitigation strategies will need to take due account of the relevant legislation and licensing system that apply in each. In this section, the legal framework underpinning these protections is outlined (CIEEM 2023).

The UK is a contracting party to the 1979 Convention on the Conservation of European Wildlife and Natural Habitats (commonly referred to as the Bern Convention). The Bern Convention has been described as the “European treaty for the conservation of nature.” Its provisions with regards to bats are transposed into law in England and Wales via the Conservation of Habitats and Species Regulations 2019 (the England and Wales Habitats Regulations), and the Wildlife and Countryside Act 1981 (as amended) (the W&CA);

All species of bat, their breeding sites and their resting places in England and Wales are protected through a ‘dual’ system of protection, under the England and Wales Habitats Regulations and W&CA. Because two regimes give legal protection to bats, the implications of both regimes must be fully understood.

Regulation (Reg.) 43 of the England and Wales Habitats Regulations makes it an offence to:

- deliberately capture, injure or kill a bat;
- deliberately disturb bats (which includes any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate or to affect significantly the local distribution or abundance of the species to which they belong);

- damage or destroy a breeding site or resting place of a bat; or
- possess, control, transport, sell or exchange, or offer for sale or exchange, any live or dead bat or part of a bat or anything derived from a bat or any part of a bat.

Under Section 9 of the W&CA (s.9(4)(b), 9(4)(c) and 9(5) only), it is an offence (in relation to bats) to:

- intentionally or recklessly disturb a bat while it is occupying a structure or place of shelter or protection;
- intentionally or recklessly obstruct access to any structure or place used by a bat for shelter or protection; or
- sell, offer or expose for sale, or have in their possession or transports for the purpose of sale, any live or dead bat or any part of, or anything derived from a bat (or be responsible for adverts suggesting the intention to do this).

The government's statutory conservation advisory organisation, Natural Resources Wales, is responsible for administering European Protected Species (EPS) licences that permit activities that would otherwise lead to an offence.

A licence can be obtained if the following three tests have been met:

- Regulation 53(9)(a) - there is, "no satisfactory alternative," to the derogation, and;
- Regulation 53(9)(b) - the derogation, "will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range," and;
- Regulation 53(2)(e) - the derogation is for the purposes of, "preserving public health or public safety or other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment."

Planning Policy

Where relevant, the ecological assessment takes account of the legislative protection afforded to specific habitats and species where applicable. Under the Environment (Wales) Act 2016, public authorities (including local councils and the National Parks), 'must seek to maintain and enhance biodiversity in the exercise of functions; in relation to Wales, and in so doing promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions.' This replaces the section 40 duty in the Natural Environment and Rural Communities Act 2006 (NERC Act 2006), in relation to Wales, which states that; 'All public authorities have a statutory duty to conserve biodiversity in all of their functions.'

The Environment (Wales) Act 2016, provides a context for the delivery of multi-functional green infrastructure as documented within the Planning Policy Wales (Edition 11) and the Annex to Heads of Planning Letter Dated 11 October 2023: Addressing the Nature Emergency through the Planning System: Updated National Planning Policy for Chapter 6 of Planning Policy Wales.

Its protection and provision can make a significant contribution to the sustainable management of natural resources, and in particular to protecting, maintaining and enhancing biodiversity and the resilience of ecosystems in terms of the diversity within and connections between ecosystems and the extent and condition of these ecosystems, so that they are better able to resist, recover from and adapt to pressures. This means that the development of green infrastructure is an important way for local authorities to deliver their Section 6 duty¹¹³.

GREEN INFRASTRUCTURE DEFINITION AND TERMINOLOGY

Green Infrastructure (GI) has been defined by the Landscape Institute in their publication, Green Infrastructure: An integrated approach to land use (2013), as *"the network of natural and semi-natural features, green spaces, rivers and lakes that intersperse and connect villages, towns and cities. Individually, these elements are GI assets, and the roles that these assets play are GI functions. When appropriately planned, designed and managed, the assets and functions have the potential to deliver a wide range of benefits – from providing sustainable transport links to mitigating and adapting the effects of climate change."*

Natural Resource Wales (NRW) defines Green Infrastructure as *"a term that's sometimes used to describe a wide range of natural and semi-natural features, spaces, rivers and lakes including parks, fields, allotments, hedgerows, roadside verges and gardens, not to mention entire ecosystems such as wetlands, waterways and mountain ranges."*

Green infrastructure is broadly analogous to 'Natural Capital', which can be defined as '...the elements of nature that produce value (directly and indirectly) to people, such as the stock of forests, rivers, land, minerals and oceans. It includes the living aspects of nature (such as fish stocks) as well as the non-living aspects (such as minerals and energy resources). Natural capital underpins all other types of capital... and is the foundation on which our economy, society and prosperity is built.' (The Natural Capital Committee 2017).

The Landscape Institute position statement "Green infrastructure: connected and multifunctional landscapes" provides the following definitions for Green Infrastructure terminology:

- **Green Infrastructure Assets:** GI assets include the natural elements which provide social, environmental or economic benefit. They can be specific sites or broader environmental features within and between rural and urban areas. A useful approach to outlining the different types of GI asset is to classify them according to the spatial scale at which each would typically be found.
- **Connectivity:** Connectivity between different GI assets will help maximise the benefits that they generate. This connectivity can be visual or notional; however physical connections make the most impact. This connectivity can enhance public engagement with the natural environment, improve opportunities for biodiversity migration and assist in encouraging sustainable forms of travel.
- **Green Infrastructure Functions:** GI functions are the roles that assets can play if planned, designed and managed in a way that is sensitive to, and includes provision for, natural features and systems. Each asset can perform different functions, a concept known as multifunctionality.
- **Multifunctionality:** Understanding multifunctionality is central to the GI approach to land use planning. Where land performs a range of functions it affords a far greater range of social, environmental and economic benefits than might otherwise be delivered. Ecosystem services underpinning the multiple functions that GI assets perform is the concept of ecosystem services. Health and wellbeing depends on the range of services provided by 6 ecosystems and their constituent parts: water, soils, nutrients and organisms. These services include:
 - Support: necessary for all other ecosystem services, e.g. soil formation and photosynthesis; — provision: food, fibre, fuel;

- Regulation: air quality, climate control, erosion control; and,
 - Culture: non-material benefits for people, including aesthetic qualities and recreational experiences.
- GI approach: GI approaches to land-use planning promote the widest range of functions which can be performed by the same asset, unlocking the greatest number of benefits. Such an approach enables us to demand more from the land in a sustainable way; by helping to identify when it can provide multiple benefits and to manage the many, often conflicting, pressures for housing, industry, transport, energy, agriculture, nature conservation, recreation and aesthetics. It also highlights where it is important to retain single or limited land use functions."

NATIONAL PLANNING POLICY

Future Wales - The National Plan 2040 (Welsh Government 2021)

Policy 9 Resilient Ecological Networks and Green Infrastructure of the Future Wales - The National Plan 2040 states the following with regard to 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 Policy Wales sets out a range of policies to maintain and enhance biodiversity, promote the resilience of ecosystems, including the stepwise approach, and to maximise the provision of green infrastructure. The strategic focus of Future Wales on urban growth requires an increased emphasis on biodiversity enhancement (net benefit) in order to ensure that growth is sustainable.

As the population of Wales becomes increasingly urban, the opportunity to optimise well-being benefits from green infrastructure will be greatest in and around these areas. Innovative use of nature-based solutions and integrating green infrastructure in and around urban areas can help restore natural features and processes into cities and landscapes. Providing locally accessible, high quality green spaces and corridors helps to maintain and enhance the strategic functioning of 8 of our natural resources and ecological networks and address physical and mental well-being. Local green infrastructure assets such as public rights of way, common land, parks, village greens and allotments can all make a cumulative contribution towards wider national scale ecological connectivity. The real-life importance of urban green spaces was demonstrated when people were restricted to taking exercise in immediately local green spaces during the COVID-19 lockdown."

Planning Policy Wales - Edition 11 (Welsh Government 2021)

Planning Policy Wales - Edition 11 states the following with regard to green infrastructure; "Integrating Green Infrastructure and Development: Green infrastructure plays a fundamental role in shaping places and our sense of well-being, and are intrinsic to the quality of the spaces we live, work and play in. The planning system should protect and enhance green infrastructure assets and networks because of these multi-functional roles. The protection and enhancement of biodiversity must be carefully considered as part of green infrastructure provision alongside the need to meet society's wider social and economic objectives and the needs of local communities. The multiple benefits that resilient ecosystems and green infrastructure offer to society, including the economic and social contribution they make to local areas, should be taken into account when balancing and improving these needs.

The quality of the built environment should be enhanced by integrating green infrastructure into development through appropriate site selection and use of creative design. With careful planning and design, green infrastructure can embed the benefits of biodiversity and ecosystem services into new development and places, helping to overcome the potential for conflicting objectives, and contributing towards health and well-being outcomes. There are multiple ways of incorporating green infrastructure, dependent on the needs and opportunities a site presents. Landscaping, green roofs, grass verges, sustainable urban drainage and gardens are examples of individual measures that can have wider cumulative benefits, particularly in relation to biodiversity and the resilience of ecosystems as well as in securing the other desired environmental qualities of places."

Update to Chapter 6 of Planning Policy Wales: Welsh Government recently made changes to Planning Policy Wales Edition 11 to address the nature emergency by publishing a revised Chapter 6 'Distinctive and Natural Placemaking and Well-Being'. The policy changes came into immediate affect in October 2023 and impacts on all planning applications. There is a great deal to consider in the revised Chapter 6, however the main policy changes relate to:

- Green Infrastructure
- Net Benefit for Biodiversity and the Step Wise Approach
- Protection for Sites of Special Scientific Interest
- Trees and Woodlands

One key change is the requirement for all planning applications to be submitted with a 'Green Infrastructure Statement' (para 6.2.5). A 'Green Infrastructure Statement' is now required with all new applications and should describe how green infrastructure has been incorporated into the proposal.

The statement should be proportionate to the scale and nature of the proposed development, for example on householder and minor developments this would normally be a short description.

The Green Infrastructure statement will be an effective way of demonstrating positive multi-functional outcomes which are appropriate to the site in question and must be used for demonstrating how the 'Step-wise Approach' (Paragraph 6.4.21) has been applied.

Building Better Places, The Planning System Delivering Resilient and Brighter Futures Placemaking and the Covid-19 recovery (Welsh Government 2020)

Within the above document under 'Green infrastructure, health and well-being and ecological resilience' it states the following regarding green infrastructure: "Resilient ecological networks, whilst vital for nature recovery, are also integral to our health and well-being and form part of our response to climate change. The crisis has highlighted the importance of access to green spaces and opportunities to connect with the natural and historic environment. It has highlighted that easy access and proximity to quality greenspace is severely lacking in some areas and to some sections of our communities and actions to reduce such inequalities should be prioritised as part of wider regeneration and improvement activities as a matter of social and environmental justice. At the same time it is notable how, with the advent of fewer unnecessary journeys and increased walking and cycling, biodiversity has the opportunity to thrive.

We must reverse biodiversity decline and enhance the resilience of ecosystems, as well as enable opportunities for social and economic activity based on valuing and enabling access to the natural and historic environment. The planning system has a key responsibility in securing green infrastructure, which plays a fundamental role in shaping places and our sense of well-being and is intrinsic to the quality of spaces in which we live, work and play."

Active Travel (Wales) Act (2015) The Active Travel (Wales) Act (2015)

This Act set out that Welsh ministers must publish annual reports on the amount of active travel journeys made in Wales. There is also a requirement for Local Authorities to identify and plan for active travel routes and increase the provision for walking and cycling, and encourage users to rely less on cars. Local highway authorities are required to give greater consideration to the requirements of walkers and cyclists and provide greater 10 infrastructure provision to them. The act also highlights the need to build connections between key sites such as workplaces, hospitals, schools and shopping areas with active travel routes.

The Well-being of Future Generations Act (2015)

The Well-being of Future Generations Act requires public bodies in Wales to consider the longterm impact of their decisions, to work better with people, communities and each other, and to prevent persistent problems such as poverty, health inequalities and climate change.

The Planning Act (Wales) 2015 states that Local Planning Authorities must exercise their function in relation to the determination of planning applications "...as part of carrying out sustainable development in accordance with the Well-being of Future Generations (Wales) Act 2015 (annex 2), for the purpose of ensuring that the development and use of land contribute to improving the economic, social, environmental and cultural well-being of Wales." (PA(W), Sec.2(2)).

Technical Advice Notes (TANs)

Technical Advice Notes should be read in conjunction with Planning Policy Wales (PPW). TANs should be taken into account by the local planning authorities in the preparation of Development Plans. They may be material to decisions on individual planning applications and will be taken into account by inspectors and the Welsh Government in the determination of appeals and called-in planning applications. The following TANs are relevant to green infrastructure:

TAN 5: Nature Conservation and Planning (2009): This Technical Advice Note provides advice about how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation. It brings together advice on sources of legislation relevant to various nature conservation topics which may be encountered by local planning authorities. The key principles of planning for nature conservation are set out followed by advice about the preparation and review of development plans, including the relevant statutory requirements.

TAN 12: Design (2016): The revised Technical Advice Notes (TAN) aims to equip all those that are involved in the design of development with advice on how sustainability, through good design, may be facilitated through the planning system. It sets out the core design principles that any development proposal must follow to help create a sustainable environment and exhibit a high level of design quality. These are structured via five the following key objectives of good design:

- Access - Ensuring ease of access for all;
- Character - Sustaining or enhancing local character; promoting legible development; promoting a successful relationship between public and private space; promoting quality, choice and variety; and promoting innovative design;
- Community Safety - Ensuring attractive, safe public spaces and security through natural surveillance;
- Environmental Sustainability - Achieving efficient use and protection of natural resources and enhancing biodiversity; and,
- Movement - Promoting sustainable means of travel.

TAN 16: Sport, Recreation and Open Space (2009): This Technical Advice Note provides advice on the role of the planning system in making provision for sport and recreational facilities and informal open spaces, as well as protecting existing facilities and open spaces in urban and rural areas in Wales. The guidance includes advice on Open Space Strategies and Open Space Assessments and outlines the need to consider green corridors and natural and semi-natural greenspaces when forming development proposals.

Assessment of Existing Green Infrastructure

For all major developments, the existing green infrastructure resource in and around the site must be described and assessed. A thorough contextual analysis of the role of existing green infrastructure in and around the site (e.g. hydrology, habitats, public rights of way and parks) should be provided, appropriate to the scale of the proposed development. This should include a large-scale map identifying the role of existing green infrastructure in the connecting wider landscape and neighbourhood context. Evidence used to describe this resource can include novel approaches such as mapping of ecosystems and ecosystem services, and GIS network and opportunity analysis, as these and other resources become available.

An Ecological Assessment, proportionate to the size of the development is required to identified existing Green Infrastructure features such as;

- Streams/rivers;
- Woodland, hedgerows and scrub;

- Roadside verges and street trees;
- Footpaths; and
- Open mosaic habitat/previously developed land (Brownfield sites), etc.,



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About Us

Little Wing Ecology is a not-for-profit ecological consultancy based in the South Wales Valleys. Specializing in bat surveys for housing developments, but providing a wide range of ecological services, it provides appropriate expertise on behalf of a range of clients.

We are a small ecological consultancy dedicated to providing an easy-to-use and jargon-free service. We produce the following products:

- Preliminary Ecological Appraisal
- Preliminary Roost Assessment
- Bat Surveys
- Mitigation Planning
- European Protected Species License Applications
- On-site Services to Support Planning Applications and Development

As a Consultancy, we use our experience, expertise, and love of wildlife to provide an easy to access and pragmatic service that upholds the highest standards of conservation.

As a Not-for-Profit Social Enterprise, we reinvest our profits. We work with valleys communities, conservation groups, local authorities, and other groups to support these three key areas:

A. Helping Nature

Developing and supporting habitat gain in the valleys through:

- Habitat improvement.
- Developing the built environment for the benefit of wildlife.
- Long-term monitoring projects for wildlife populations in the valleys.

B. Working with People

- Providing employment, training and voluntary opportunities for the local community and young people to help them build their skills, develop a stronger relationship with nature and build confidence in themselves.

C. Supporting Communities

- Reinvesting in nature and people, locally.
- Supporting education within communities to promote a positive relationship between people and wildlife.
- Providing pro-bono surveys for worthwhile causes.

Adroddiad Arolwg gan



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