

A Bat Survey Report
on behalf of

Mr. Paul Thomas
for
The Hairport
Castle Yard
High Street
Twynnyrodyn
Merthyr Tydfil
CF47 8UP



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Project Overview

Client	Mr. Paul Thomas
Site / Job	The Hairport, Castle Yard, High Street, Twynyrodyn, Merthyr Tydfil, CF47 8UP
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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 owner of The Hairport, in Merthyr Tydfil town centre is preparing a planning application to Merthyr Tydfil County Borough Council, the local planning authority, to add low-profile solar panels to the roof of the building. To support the planning application process, a survey for the presence of bats and birds was undertaken in August 2024.

Following the results of a Preliminary Roost Assessment, one dusk activity survey, undertaken in accordance with national survey standards, was carried out with the purpose of identifying the presence/likely absence of bat roosts at the structure. The Hairport occupies an exclusively urban location and is impacted by high levels of artificial lighting at all elevations. No evidence was recorded of bats using the structure as a roost and bats are considered likely absent. Of the four recordings made, two species were identified commuting near the site. The observed behaviour was for animals commuting opposite the western boundary of the structure. The species identified during the survey effort included soprano pipistrelle and common pipistrelle. When the conservation significance of the site is considered, the impact is negligible (Collins, J. (Ed.) (2023).

Birds were also considered at the same time as the bat surveys. The Hairport supports limited features that could be exploited by nesting birds, but no active nests were identified during the survey visits. 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 Natural Environment and Rural Communities (NERC) Act (2006) 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 Little Wing Ecology (CYF) was commissioned to undertake a Bat Activity Survey, of a site known as, 'The Hairport, Castle Yard, High Street, Twynnyroddyn, Merthyr Tydfil, CF47 8UP.' The survey was undertaken 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, 'Building A.'
- 1.1.2 The owner of The Hairport, in Merthyr Tydfil town centre is preparing a planning application to Merthyr Tydfil County Borough Council, the local planning authority, to add low-profile solar panels to the roof of the building.
- 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 Building A.
 - 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 In addition to a Preliminary Roost Assessment, this report contains the results from one dusk activity survey, conducted during August 2024. The survey was carried out with the purpose of identifying the presence/likely absence of bat roosts at Building A. 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 04948 06370 (Appendix A), at an altitude of 187m above Ordnance, Building A is a well renovated commercial property. It is a fully renovated 19th C stone-built commercial unit with a slate roof and a modern rear extension. The building is in daily use and the owners propose to install solar panels to the roof to support the business.
- 1.2.2 Building A is located on a main service road (High Street) in Merthyr Tydfil town centre. Habitat in the immediate vicinity of the structure is predominantly urban, comprising other buildings, and made surfaces, such as roads and pavements. The River Tâf is located ≈300m to the west. All elevations of Building A are exposed to high levels of artificial lighting.

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: 7086850).

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 Building A. 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 carried out on the interior and exterior of Building A 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 the PRA and in-line with guidelines set out in, 'Bat Conservation Trusts Good Practice Guidelines (Collins, J. (Ed.) (2023),' Building A will subsequently be 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–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 Building A.

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 The structure is accessed via an entrance on the main service road (High Street). The structure is a fully renovated commercial unit with a relatively new roof, render and windows all of which are in good order. There are no visible gaps between slates, ridge tiles or flashing. Bargeboards are all well sealed against the building with the exception of a small gap along the western elevation. No gaps are present on the eastern or southern elevations.
- 3.2.2 An inspection was undertaken of the roof void. The underside of the roof has a breathable membrane which is well fitted. No bitumen membrane was present. Gaps were present on top of the wall at the southern gable and northern party wall. There was no light penetration recorded at the eastern or southern elevations but there was some recorded at the western eaves. A timber light well was present near the southern gable. This previously provided a window over the stair-well but has been blocked off top and bottom and is sealed with no access to the interior.
- 3.2.3 No bat droppings were recorded within the roof void and it is unlikely that bats would be present above the breathable membrane.
- 3.2.4 No evidence of nesting birds (active / inactive nests) was identified; however, the property offers limited potential at the rear eaves, specifically for house sparrows (*Passer domesticus*).
- 3.2.5 Following guidelines set out on Bat Conservation Trusts Good Practice Guidelines (Collins, J. (Ed.) (2023), Building A has been categorised as being of low risk, requiring a dusk survey for bats on a minimum of one occasion. This survey represented the minimum recommended number of visits to give confidence in a negative result for structures.
- 3.2.6 While the western bargeboard presents a potential access to the roof void, no evidence has been recorded of bats occupying this space currently or historically and the presence of a breathable membrane introduces additional hazards for roosting bats. While bats are not deterred from roosting where there is breathable membrane they can become entangled in the filaments of breathable membranes resulting in mortality. In addition, there are no obvious habitat features on or directly adjacent to the site likely to be used as flight paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard behaviour. Taking a step-wise approach – the zone of influence for the proposed works would be the cavity between the breathable felt layer and the slates, and centrally on the roof – an area where bats are likely absent. Taking a precautionary approach a degree of additional survey will mitigate this low/negligible risk.

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

3.3 Local Records for Bats

3.3.1 The local biodiversity records provided by SEWBRc returned 2,006 species records, including 233 records for bat species and 319 records for bird species locally. Some of these were too old to be considered viable. The closest (<1km) and most significant records are summarised here. There were 25 records for bats within 500m. Of these, seven records were for common pipistrelle, six for soprano pipistrelle, four for brown long-eared, one for lesser horseshoe bat, two for noctule and five were not identified to species level. There is at least one additional species recorded between 0.5-1km, myotis, although these records have not been identified to species level. Between 1km-2km there are an additional four species recorded: serotine, greater horseshoe bat, Daubenton's bat and Natterer's bat.

3.3.2 In total there are 17 roost records within 1km, the closest being the record for common pipistrelle and brown long-eared bat at 60m. In total there are six common pipistrelle day roosts between 60-872m, three brown long-eared day roost at 60- 194m, two soprano pipistrelle day roosts at 75m and 305m, a lesser horseshoe bat day roost at 120m, and five day-roosts for unidentified species between 194m-598m. In addition to these records, the author has recent personal records, presently to be uploaded to the national database, for a greater horseshoe bat day roost at 200m, a greater horseshoe bat night roost at 210m and a lesser horseshoe bat night roost at 200m.

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

3.4.1 Habitat in the immediate vicinity of the structure is predominantly urban, comprising other buildings, and made surfaces, such as roads and pavements.

3.4.2 All elevations of Building A are exposed to high levels of artificial lighting. While the structure is very much set within an urban landscape, a little further afield there are green spaces which offer connectivity.

3.4.3 The River Tâf is located ≈300m to the west. An open section of the Nant Morlais is located ≈90m to the north-west – this re-enters a culvert at ≈120 to the west. This open section of stream supports a small and fragmented woodland of ≈230m x ≈90m, which itself is separated from the River Tâf by ≈80m of urban development.

3.4.4 Approximately 70m to the north-east, beyond the buildings which mark High Street is a green urban space, which from satellite images is composed of amenity grassland, woodland and a brownfield site. This space provides connectivity east to Old Thomastown Park, Thomastown Park and Cyfarthfa High School playing fields, which in turn are connected to Whitey Park.

3.4.5 Both upstream and downstream, the River Tâf provides a high-quality riparian habitat with excellent foraging opportunities, both features provide excellent connectivity to the wider landscape.

3.5 Suitability for Hibernating Bats

3.5.1 The features identified within the PRA are considered to offer a negligible risk at providing the hibernating conditions that bats prefer. No cellars or underground spaces were identified. As pipistrelle species are known to hibernate in buildings, this will need to be taken into consideration, during the winter months.

3.6 Activity Survey Recordings

3.6.1 On 22.08.2024, no bats were recorded as roosting at Building A. During this first survey, only four recordings made, all of which were made to the west of the structure. No bats were recorded along the eastern or

southern elevation. To the west only two bats were observed by the surveyor, these were commuting along the fence line of the adjacent commercial unit. The remaining two recordings were for animals behind the surveyor, presumably in the same commercial unit and most likely commuting past. Bat interest at Building A consisted predominantly of very low levels of commuting opposite the western elevation. One recording was made of common pipistrelle and three of soprano pipistrelle.

3.6.2 A bat activity plan is presented in Appendix D and raw data for observations is presented in Appendix F.

3.7 Roost Characterisation

3.7.1 During dusk observations no bats were recorded emerging from Building A and bats are considered to be likely absent from the structure.

3.8 Infrared Video Survey

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

3.8.2 In this survey the NVA was ineffective due to the high levels of artificial light impacting the structure.



Plate A: Infrared Monitoring (NVA - Image quality)

3.9 Field Survey Details & Weather Conditions

Date	Timings (BST)		Notes, Sunset Times	Weather Conditions		
	Start	End		Variable	Start	End
22.08.2024	20.10	21.35	Dusk Activity Survey Sunset: 20.21	Temp (°C)	20.1	15.0
				Cloud Cover (Oktas)	7	8
				Precipitation	Nil	Nil
				Beaufort Scale	F0	F2

Table 3.2: Field Survey Details and Weather Conditions

3.10 Additional Ecological Constraints (Results)

3.10.1 No limitations to access were encountered. 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, a combination of very low bat activity, very high levels of artificial lightings and safety concerns, led to a decision to end the survey at 1 hour and 15 minutes following sunset. The light tolerance species, characteristic of this survey site are early emergers and, the survey team were confident from recorded activity, that these species had emerged within half an hour of sunset. In parallel to this were safety concerns in relation to verbal and physical harassment of one surveyor by patrons of the adjacent public house. In combination, early

survey termination was warranted in this instance to protect surveyors and without any significant concerns over impacting the outcome and survey results.

3.11 A Summary of Evidence

Survey Location	Species (Recorded)	Notes
Building A	Soprano pipistrelle Common pipistrelle	Droppings: No droppings were recorded at Building A. Live sightings: During one dusk observation no bats were recorded emerging from Building A. All the observations and recordings made were of bats commuting. Roost Type: No roost has been identified at Building A. Bats are considered likely absent.

Table 3.3: Summary of Evidence

3.12 Impact Assessment

- 3.12.1 When the nature conservation significance of the site is considered against recognised criteria (Bat Mitigation Guidelines 2004 and Good Practice Guide: NRW Approach to Bats and Planning October 2015 and IUCN Red List of Threatened Species), the nature conservation status of the site is assessed to be negligible and bat roosts are considered likely absent from Building A. Two species were identified commuting near Building A; common pipistrelle and soprano pipistrelle (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 a dusk emergence survey conducted in August of 2024, no evidence was recorded of bats using Building A as a roost and bats are considered likely absent. Of the four recordings made, two species were identified commuting near the site. The observed behaviour was for animals commuting opposite the western boundary of the structure. The species identified during the survey effort included soprano pipistrelle and common pipistrelle.
- 4.2 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. If impacts of this nature will arise, then 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. As bat roosts are considered likely absent from Building A, a licence is not required at this time. In the event that works do not start within two years of the survey date (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.
- 4.5 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.
- 4.6 Building A supports features that could be exploited by nesting birds, e.g., house sparrows (*Passer domesticus*). A cautionary approach is recommended with particular reference to the bargeboards.

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 (Additional Survey Work):** No further survey is recommended at this time. In the event that works do not start within two years of the survey date (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. 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.

- 5.3 **Recommendation 2 (Post Development Lighting Scheme):** To prevent any adverse impact upon the potential roosting, commuting and foraging habitats for bats adjacent to Building A (post development) 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). The sensitive lighting scheme must follow advice details in 'Bats and Artificial Lighting in the UK: Technical Guidance Note 08/23' (2023)¹ (Please refer to Appendix F).
- 5.4 **Recommendation 3 (Hibernation and Pipistrelles):** As pipistrelle species are known to hibernate in buildings a precautionary approach will be followed. Any works with regards to the stripping of roofing materials or exposing the wall plate during the winter months (October-April – inclusive) to be supervised by a suitably qualified and experienced bat ecologist under the direction of a method statement. Stripping of roofing materials or exposing the wall plate during the winter months must be undertaken by a suitably experienced and licensed bat ecologist and only when temperatures are 10°C or above.
- 5.5 **Recommendation 4 (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.
- 5.6 These measures will allow the development to conform to current protective legislation as laid out in the Wildlife and Countryside Act 1981 (plus amendments)².
- 5.7 **Recommendation 5 (Enhancement features)** Implementation of the enhancement features for net-gain biodiversity as outlined in the green infrastructure statement.

SECTION SIX: BIODIVERSITY ENHANCEMENT

- 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 **Enhancement for Bats:** In line with the National Planning Policy Framework, the development should aim

¹ <https://www.bats.org.uk/news/2023/08/bats-and-artificial-lighting-at-night-ilp-guidance-note-update-released>

² <https://www.legislation.gov.uk/ukpga/1981/69>

to enhance the Site for bats. Two Beaumaris Bat Box³, or similar artificial roost should be installed on the southern elevation with the purpose of providing a roosting habitat for species such as pipistrelle. 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. The most suitable location is at the southern elevation, directly below the eaves.

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 survey date (i.e., August 2026) further survey and assessment will be necessary to qualify the results of this report and its recommendations.

³ https://www.wildcare.co.uk/beaumaris-bat-box.html?gad_source=1&gclid=CjwKCAiw65-zBhBkEiwAjrqRMLWbfTavFJgGTV2rv0OGQEWnqN0eVseleG460NUFfHmi6NAF2TcGZhoCsKEQAvD_BwE

REFERENCES & Bibliography

- Bat Conservation Trust. Bats and Artificial Lighting in the UK: Bats and the Built Environment Series Guidance Note 08/23 (2023).** Available at: <https://www.bats.org.uk/news/2023/08/bats-and-artificial-lighting-at-night-ilp-guidance-note-update-released#:~:text=The%202023%20guidance%20note%20considers,in%20the%20level%20of%20impact.>
- Bat Conservation Trust.** Available at: <https://www.bats.org.uk/our-work/buildings-planning-and-development/roost-replacement-and-enhancement/case-studies/lesser-horseshoe-bat-night-roosts-forest-of-dean>
- Bat Conservation Trust. Bats and Lighting in the UK: Bats and the Built Environment Series (A Working Document).** Available at: https://plan-actions-chiropteres.fr/sites/default/files/fichiers/bats_and_lighting_in_the_uk_2009.pdf
- Bat Conservation Trust (2010) UK Bats.** Accessed on 20/05/2022. Available at: http://www.bats.org.uk/pages/uk_bats.html
- Beddoes Products.** Accessed 20/09/2022. Available at: <https://beddoesproducts.com/>
- Biodiversity: Code of Practice for Planning and Development - BS 42020:2013 (2013).** Available at: <https://www.omegawestdocuments.com/media/documents/43/43.35%20BSI%20Biodiveristy%20Code%20of%20Practice.pdf>
- CIEEM – Bat Mitigation Guidelines (Beta Version 1.0: June 2021).** A guide to impact assessment, mitigation and compensation for developments affecting bats. Available at: <https://cieem.net/i-am/current-projects/bat-mitigation-guidance/>
- Collins, J. (Ed.) (2023).** 'Bat Surveys for Professional Ecologists – Good Practice Guidelines, 4th Edition.' Bat Conservation Trust, London. Available at: <https://www.bats.org.uk/resources/guidance-for-professionals/bat-surveys-for-professional-ecologists-good-practice-guidelines-4th-edition>
- Government of Wales: Environment [Wales] Act (2016).** Available at: <https://www.legislation.gov.uk/anaw/2016/3/contents>
- Hundt, L. (Ed.) (2012).** 'Bat Surveys: Good Practice Guidelines, 2nd edition.' Bat Conservation Trust, London.
- Mitchell-Jones, A.J. (2004).** 'Bat Mitigation Guidelines.' English Nature, Peterborough.
- Mitchell-Jones, A.J. (1992).** 'Focus on Bats.' English Nature, Peterborough.
- Mitchell-Jones A.J. and McLeish A.P. (2004).** 'The Bat Workers Manual, 3rd Edition,' English Nature, Peterborough.
- Ninnes, R. (2015).** 'NRW Approach to Bats and Planning,' Natural Resources Wales, Bangor.
- Russ, J. (2012).** 'British Bat Calls: A Guide to Species Identification.' Pelagic Publishing, Exeter.
- Russ, J. (Ed.) (2021).** 'Bat Calls of Britain and Europe: A Guide to Species Identification.' Pelagic Publishing, Exeter.
- UK Government: The Conservation of Habitats and Species Regulations (2019).** Available at: <https://www.legislation.gov.uk/uksi/2017/1012/contents/made>
- UK Government: Wildlife and Countryside Act (1981) - as amended.** Accessed 20/05/2022. Available at: <https://www.legislation.gov.uk/ukpga/1981/69>
- Williams, C. (2010).** 'Biodiversity for Low and Zero Carbon Building: A Technical Guide for New Build.' RIBA Publishing, London
- Wray, S., Wells, D., Long, E., & Mitchell-Jones, A.J. 2010.** Valuing bats in ecological impact assessment. In Practice, No 70, Institute of Ecology and Environmental.



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

Appendix B: Site Photography

	
Plate 1 – External - Southern elevation – Slates, bargeboards and flashing all well sealed.	Plate 2 – External - Eastern elevation – bargeboards well sealed.
	
Plate 3 – External - Northern elevation – bargeboards well sealed.	Plate 4 - External – Western elevation – PRF at bargeboard.
	
Plate 5 – External – Northern elevation – access at bargeboard.	Plate 6 – External – Eastern elevation – missing brick.
	
Plate 7 – Internal – Light shaft – sealed and inaccessible.	Plate 8 – Internal – Western eaves.

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: August 2024
Produced by: Little Wing Ecology
Our Reference: LT216-BAS-24
Author: N S Aldridge

- Legend
- Building A
 - Site boundary
 - Bat Activity



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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
22.08.20 24	20.46	20.46	Common pipistrelle	1	West	Tracey Cotterell	Digital recording	
22.08.20 24	21.15	21.15	Soprano pipistrelle	1	West	Tracey Cotterell	Digital recording	
22.08.20 24	21.38	21.38	Soprano pipistrelle	2	West	Tracey Cotterell	Commuting	Commuting

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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