

A Preliminary Ecological Appraisal Report

on behalf of
Mr. Darren Abraham

for
The Patches
Heolgerrig
Cyfarthfa
Merthyr Tydfil
CF48 1SA



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Project Overview

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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

This report presents the findings of a Preliminary Ecological Appraisal (PEA) undertaken for the Proposed Residential Development at 'The Patches, Heolgerrig, Cyfarthfa, Merthyr Tydfil, CF48 1SA,' commissioned by Mr. Darren Abraham. The assessment was conducted to identify ecological constraints and associated planning requirements regarding habitats and protected species, in support of a planning application for the demolition of an existing two-storey derelict cottage and the construction of two new-build residential units with off-road parking and associated landscaping works.

The field survey was conducted on 20 May 2025, covering a site area of approximately 1,325 m², divided into two plots. Plot A (≈865 m²) contains the derelict cottage and associated outdoor space, characterised by mixed habitat including disturbed ground, bare earth, and an intact but species-poor hedgerow at the northern boundary. Plot B (≈460 m²) is dominated by disturbed ground with early successional vegetation and is bounded by species-poor hedgerow.

A comprehensive desk study was undertaken, incorporating records from the South East Wales Biodiversity Records Centre (SEWBRc), which returned 808 species records within a 1km search radius. No records were documented on or directly adjacent to the site. The nearest records included terrestrial mammals at 798m (hedgehog), bats at 99m (pipistrelle), and reptiles/amphibians at 220m (common frog). The site is not located within any statutory nature conservation designations, though three Sites of Special Scientific Interest (SSSIs) are present within 3km, the nearest being Cwm Glo a Glyndyrys at approximately 250m.

Phase 1 habitat survey identified six main habitat types: scattered scrub, amenity grassland, disturbed land, intact native species-poor hedgerow, derelict building, and bare ground. The hedgerow represents the most ecologically valuable feature on site, supporting 24 plant taxa and providing important wildlife connectivity. The derelict cottage was assessed during a Preliminary Roost Assessment and categorised as having Moderate potential for supporting roosting bats, with numerous potential roost features identified including raised tiles, missing roof sections, and damaged edging.

The principal ecological constraints identified relate to potential bat roosting within the existing building structure and the risk of disturbing nesting birds during the breeding season. A low risk exists for encountering great crested newts given their known presence in the local area, though site connectivity is poor. Further survey requirements include a minimum of two dusk emergence surveys for bats and the implementation of a site-specific method statement for amphibians during site clearance works.

Comprehensive mitigation measures have been recommended including sensitive lighting schemes, timing restrictions for construction works, precautionary approaches for protected species, and habitat enhancement features. Biodiversity net gain will be achieved through the installation of integrated bat and bird boxes, hedgehog connectivity provisions, and native planting schemes incorporating species that support foraging bats and invertebrates. Implementation of these measures will ensure compliance with relevant legislation and policy requirements while delivering measurable ecological benefits for the site.

This Executive Summary is intended to provide an overview of the assessment of the proposed development site based on information received by Little Wing Ecology (CYF) at the time of production. This Executive Summary should be read in conjunction with the full report.

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1.0 Introduction

1.1 Background

This report details a Preliminary Ecological Appraisal (PEA) undertaken for the Proposed Residential Development at The Patches, Heolgerrig, Cyfarthfa, Merthyr Tydfil, CF48 1SA. The assessment was commissioned by the owner, Mr. Darren Abraham. The purpose of this appraisal is to inform the client of any ecological constraints and associated planning requirements regarding habitats and protected species, in support of a planning application for the demolition of an existing two-storey, derelict cottage and the construction of two new-build residential units with off-road parking and associated landscaping works. For the purposes of this document, the structure will be referred to as 'The Site'.

1.2 Site Details

The Site, located in the settlement of Heolgerrig, has an Ordnance Survey National Grid Reference of SO 02742 05931 at its approximate centre. The total site area is approximately 1,325 m², composed of two plots. Plot A = ~865 m² and Plot B = 460 m². The field survey was conducted on 20 May 2025. The site is divided into two plots. The larger, Plot A (~865 m²), is the site of a derelict cottage and its associated outdoor space. Habitat at Plot A is mixed – dominated by disturbed ground and bare earth but includes an intact but species poor hedge at the northern boundary. Plot B (~460 m²) is an ecologically simpler plot. Centrally it is dominated by disturbed ground characterised by early successional vegetation. The majority of the boundary is composed of a species poor hedgerow.

1.3 Report Context

This report is identified by the unique reference LT318-PEA-25 and was prepared on 20 August 2025. It should be read in conjunction with the accompanying architectural plans provided by the client.

1.4 Optimal Season Assessment for Survey Date

No major constraints were encountered during the PEA and all habitats on site were broadly identified with confidence. However, it must be noted that this PEA assessment is not intended to confirm the presence or absence of all plant species on site. This would require a more detailed botanical assessment over multiple site visits between April and September. At any given time of year, it is not possible to identify all plant species by conducting a single visit, as different species emerge and flower at different times of the year. The sward height, management regime and weather conditions can hinder the identification of specimens. However, it is possible to classify habitats and identify many species throughout the year in most circumstances. The baseline conditions described in this report were accurate at the time at which the survey was undertaken. Since the assessment took place during May, it is likely that some species were not recorded. However, it does provide a comprehensive ecological assessment of habitat types and dominant species at the time of the survey and highlights areas where further survey effort would be required.

2.0 Methodology

2.1 Desk Study

A desk study was undertaken to gather existing ecological information pertinent to the site. The South East Wales Biodiversity Records Centre (SEWBRc) was contacted for local environmental records (LERC reference: 0256-102). Additionally, personal records held by the author were consulted. Other relevant resources, including Data Map Wales, were also searched. A 1km search radius was applied for all records. Only those species records occurring within the last ten years were considered relevant for detailed analysis, although consideration was taken of earlier records. No previous ecological reports for the site were provided by the client.

2.2 Field Survey

A Preliminary Ecological Assessment was undertaken using standard Phase 1 habitat survey techniques as a guiding principle. The site was surveyed by walking a zig-zag pattern, with systematic and methodical notes being recorded on the habitat and site conditions. This was followed by a complete circuit of the site boundaries, where additional notes were made as necessary. Photographs were taken to document the site's boundaries, areas of ecological interest, and features characteristic of the on-site habitats.

During the survey, the potential for protected species was assessed, and any signs or evidence of their use were noted. Features such as piles of rubble, banks, or tree roots were assessed for their potential to be used as refugia or hibernacula for reptiles and hedgehogs. Water bodies were evaluated for their potential to provide opportunities for amphibians and reptiles. Furthermore, the presence of physical signs of other relevant species, such as droppings, footprints, or foraging marks, were recorded where observed. Any flora or fauna protected under the Wildlife and Countryside Act 1981 were also noted.

A Daytime Bat Walkover (DBW) was conducted to identify opportunities for bat roosts and potential roosting features (PRFs). As part of this, the habitats both on-site and immediately beyond the site boundary were assessed to identify potential commuting and foraging corridors. This thorough assessment allowed for the determination of the overall suitability of the location for bats and informed the need for any further surveys.

The field survey was conducted by Nic Aldridge - Ecologist, who is also the author of this report.

Table 2.1: Weather Conditions during Field Survey (20 May 2025)

Parameter	Start Conditions (09:30hrs)	End Conditions (11:30hrs)
Temperature (°C)	18.1	21.1
Cloud Cover (Oktas)	4	3
Precipitation	Nil	Nil
Wind (Beaufort Scale)	F1	F1

3.0 Results

3.1 Desk Study Results

The local biological records search (LERC: 0256-102) reported 808 species records. No records were documented on or directly adjacent to this site. These are briefly summarised in the bullet list below:

- Terrestrial mammals (excluding bats) accounted for 10 species records (i.e., 1.24% of all records). This record is for hedgehog at 798m.
- Chiroptera (bats) accounted for 46 species records (i.e., 5.69%). The nearest records for pipistrelle at 99m, and common pipistrelle (*Pipistrellus pipistrellus*) at 119m.
- Reptiles and amphibians accounted for 50 species records (i.e., 6.19%). These are for common frog (6 records – between 220-928m), great crested newt (30 records – between 267-1620m), palmate newt (4 records – between 294-1620m), common toad (4 records – between 724-1620m), common lizard (2 records – between 584-872m), and grass snake (1 record – 514m).
- Birds accounted for 277 species records (i.e., 34.28%), 56.68% of which were for CAT1 species. The nearest three records include swift (150m), house sparrow (150m), and lesser black-backed gull (150m).

- Flowering plants accounted for 39 species records (i.e., 4.83%) including 8 CAT1 records. These are for bluebell (4 records – between 804-1011m), stag's-horn clubmoss (3 records – between 495-1452m), English sticky eyebright (1 record – 613m), large-flowered sticky eyebright (1 record – 804m). 10 records were returned for CAT4 species records (invasive species), the nearest of which were for Japanese knotweed (1 record – 190m), and snowberry (3 records – between 618-1011m).

- Other species included:

- Invertebrates (168 records, including the nearest for; marsh fritillary, small pearl-bordered fritillary, emerald damselfly).
- Bryophytes (7 records, including chalk comb-moss, heath star moss, and ciliated fringewort).
- Fungi and Slime Moulds (201 records, including various waxcap species).
- Lichens (1 record, for *Usnea articulata*).

3.2 Statutory Sites

No part of the site is within a statutory site of nature conservation interest. There are 3 statutory sites within 3km including Cwm Glo a Glyndyrys (SSSI - being the nearest at ≈250m), Cwm Taf Fechan Woodlands (SSSI at ≈1.9km), and Bryncarnau Grasslands, Llwydcoed (SSSI - at ≈2.5km). Also notable is a section of ancient woodland (≈500m) and a traditional orchard feature (at ≈650m).

4.0 Phase 1 Habitat Survey Results

4.1 Habitat Descriptions

- **Scattered scrub (A2.2):** An area of scrub borders the hedgerow feature along the northern boundary of Plot A, with an additional small area present at the southern boundary of the same plot. This southern section may represent a defunct hedge remnant at this boundary. The scrub vegetation provides limited ecological value but offers potential nesting opportunities for common bird species and shelter for small mammals.

- **Amenity grassland (J1.2):** Adjacent to the derelict cottage at Plot A, small sections of species-poor amenity grassland are present. These areas represent sections of level ground that have been less impacted by clearance works at the site. The grassland is characterised by common species typical of frequently managed areas with limited botanical diversity. This section contained two target notes:

- **Target Note Number TN1:** Stone piles were recorded within the amenity grassland. These features provide limited potential as refugia for small mammals, reptiles, and amphibians, and offer potential basking opportunities for reptiles.
- **Target Note Number TN2:** Wood piles were also recorded within this habitat. These features provide limited potential as refugia for small mammals, reptiles, and amphibians, and offer potential basking opportunities for reptiles.

- **Disturbed land - ephemeral (J1.3):** Plot B is dominated by a level area of disturbed ground characterised by early successional vegetation. The presence of pioneer plant species suggests that this area was cleared within the last two years. The habitat is of limited ecological value but may provide foraging opportunities for ground-feeding birds and small mammals.

- **Intact hedge - native species poor (J2.1.2):** An intact but species-poor hedge was recorded along the northern boundary of Plot A and along the northern, eastern, and southern boundaries of Plot B. This feature supported the highest species diversity within the site, with 24 taxa documented, including seven woody species comprising both native trees and shrubs. The arboreal component was represented by *Fraxinus excelsior* (ash) and *Acer pseudoplatanus* (sycamore), while the shrub layer included *Sambucus nigra* (elder), *Crataegus monogyna*

(hawthorn), *Corylus avellana* (hazel), *Ilex aquifolium* (holly), and *Rosa canina* (dog rose). The hedge understory was characterised by pteridophyte species including *Dryopteris* spp. and *Dryopteris affinis* (scaly male-fern), alongside shade-tolerant herbaceous taxa such as *Geum urbanum* (wood avens), *Hedera helix* (ivy), and *Veronica chamaedrys* (germander speedwell). This hedgerow provides important habitat connectivity and supports nesting birds, foraging opportunities for bats, and shelter for various small mammals.

- **Building (J3.6):** A traditional cottage of approximately 200 years in age is located on Plot A. The structure is in a poor state of repair and can be considered derelict. Several sections of roof and roof edging are missing, and movement in the roof structure has resulted in displacement of ridge tiles. Concrete tiles are present, with evidence recorded of both bitumen felt and breathable felt underlaying, suggesting incremental repairs undertaken over several years. The building provides potential roosting opportunities for bats and nesting sites for birds, particularly in the damaged roof areas.

- **Bare ground (J4):** In addition to the disturbed ground at Plot B, areas of bare ground are present at Plot A where site clearance has occurred, including access provision for a storage container and skip. At Plot A, this habitat lacks the density of herbaceous cover present elsewhere, suggesting more regular disturbance up to the present date. The exposed soil provides limited ecological value but may support early colonising plant species.

Additional features recorded: A small stream was identified adjacent to the main service road, near the southern boundary of the site. This feature provides potential, but limited habitat for amphibians and supports riparian vegetation. A large pond was recorded approximately 450m to the east of the site with poor connectivity. This water body may provide breeding habitat for amphibians and foraging opportunities for bats.

5.0 Preliminary Roost Assessment (PRA) / Daytime Bat Walkover (DBW)

5.1 Structures

Building A (Main Property)

Construction & Condition: A traditional two-storey stone and lime cottage featuring a pitched concrete tiled roof was assessed. The roof incorporates cement-based ridge tiles with rudimentary timber bargeboards and uPVC rainwater goods. The overall fabric was found to be in very poor condition and the structure can be considered derelict.

Potential Roost Features (PRFs) identified: Numerous raised tiles were recorded as a result of structural movement in the roof assembly. An area of missing tiles was observed on the rear extension roof, providing direct flight access into the property interior. Several sections of cement-based roof edging were found to be absent, providing direct access opportunities to the underside of the tile courses. A section of roof sheeting was missing from the side extension, creating an aperture of sufficient size to allow direct flight access into the structure. A small roof void was present, though physical access for detailed inspection was not possible. Limited visual assessment of this void was achieved, but not to a degree that would satisfy comprehensive evidence collection regarding potential occupation.

Evidence of Bats: No physical evidence of bat occupation, such as droppings, staining, or feeding remains, was recorded during the external assessment.

Roost Potential Categorisation: The structure was assessed as having **Moderate Roosting Potential**. The numerous access points and available roosting spaces within the roof structure provide suitable opportunities for bat occupation, particularly for crevice-dwelling species. Breeding colony potential was not identified as a primary concern given the structural instability and high disturbance likelihood.

Hibernation Potential: No classic hibernation sites were identified within the assessed structure. No cellars, underground spaces, or thermally stable environments typically associated with hibernation roosts were recorded. However, as pipistrelle species are known to utilise buildings for hibernation purposes, a precautionary approach will be recommended for any proposed demolition works.

5.2 Habitat Suitability for Commuting and Foraging Bats

- **Flight Paths:** The mature trees and hedgerows along the northern boundary provide a continuous linear feature, offering **High suitability** for commuting bats, particularly connecting to the adjacent stream corridor. The remainder of the site offers **Low suitability** due to open, disturbed areas with limited connectivity and structural diversity.
- **Foraging Habitat:** The adjacent stream provides **Moderate suitability** foraging habitat, supporting insect populations typical of riparian environments. The nearby mature woodland feature (≈150m west) offers **High suitability** for generalist foraging bats, providing diverse microhabitats and abundant invertebrate prey resources.

5.3 Other Protected Species Results

No other specific protected species surveys were undertaken as part of this Preliminary Ecological Appraisal. However, habitat assessments were conducted to evaluate the potential presence of other protected species groups. The site features, including stone and wood piles, hedgerow boundaries, and areas of disturbed ground, provide suitable refugia and foraging opportunities for various protected species including reptiles, amphibians, and small mammals. The derelict building structure may also provide nesting opportunities for protected bird species, particularly those associated with traditional building features.

6.0 Survey Constraints and Limitations

6.1 Constraints Encountered

Type of Constraint: Access.

Description of Constraint: Internal access to the roof space was not possible due to poor access provision and structural instability of the derelict building.

Implications and Mitigation: This constraint restricted the opportunities for identifying physical evidence of bat occupation, such as droppings, staining, or feeding remains within the roof void. However, this limitation will be mitigated through vigilance during any future intrusive works and through the provision of additional surveys, specifically dusk emergence and dawn re-entry surveys, should the Preliminary Roost Assessment categorisation warrant further investigation.

Type of Constraint: Seasonality.

Description of Constraint: Botanical identification was restricted by the inherent limitations of a single-visit assessment, as different plant species emerge, flower, and fruit at various times throughout the growing season.

Implications and Mitigation: While comprehensive species-level identification was not achievable across all taxa, it remains possible to classify habitat types and identify dominant species throughout the year under most circumstances, as was successfully achieved during this assessment. The baseline habitat characterisation described in this report provides an adequate foundation for ecological impact assessment and mitigation planning purposes.

7.0 Discussion

7.1 Ecological Value and Significance

The site's ecological value is considered to be mixed. The disturbed ground habitats are of low intrinsic ecological value, providing limited opportunities for wildlife. However, the intact hedgerow provides a small area of quality habitat that supports the highest botanical diversity recorded on site and offers important connectivity for wildlife movement. The adjacent stream is considered of local ecological value, providing connectivity to the wider landscape and supporting foraging resources for various species groups.

With regard to great crested newts, populations are present locally within the surrounding landscape. However, taking into account the poor connectivity between the site and these established populations, combined with the limited (suitable) aquatic opportunities available on site, the risk of encountering this species is considered low. Nevertheless, a precautionary approach will be required given the mobile nature of this species and the proximity of known breeding populations.

The site offers suitable, albeit limited, habitat for common bird species and generalist invertebrates. The hedgerow boundary provides nesting opportunities and foraging resources, while the disturbed areas may support ground-feeding species. No other protected species were identified during the survey, but their potential presence cannot be entirely discounted given the habitat types present and the inherent limitations of a preliminary assessment.

7.2 Potential Ecological Impacts (in absence of mitigation)

Without the implementation of appropriate mitigation measures, several potential ecological impacts could arise from the proposed development:

• **Bats:** The proposed works on the main building could directly impact any bat roost that may be present, potentially leading to damage or destruction of roosting sites, or causing injury or mortality to bats. Construction activities, including noise, vibration, and lighting, could disturb bats utilising roosts within the building or affect commuting and foraging behaviour in the surrounding area.

Nesting Birds: Potential disturbance to nesting birds could occur if works are undertaken during the bird breeding season, typically March to August inclusive. This could result in nest abandonment, reduced breeding success, or direct harm to eggs and chicks.

8.0 Recommendations

8.1 Further Survey Requirements

Bats (Building A): A minimum of two dusk emergence surveys are required during the optimal survey season (May to September inclusive) to adequately characterise bat activity and determine the precise nature and significance of any roost present within the structure.

Amphibians: A site-specific method statement for site clearance is required to mitigate the limited risk of encountering amphibians on-site, with specific reference to great crested newts given their known presence in the local area.

8.2 Avoidance, Mitigation, and Enhancement Measures

Presence/Possible Absence Bat Survey: Building A has been categorised as being of moderate potential for supporting roosting bats. This structure will require dusk emergence surveys on two occasions, no less than 21 days

apart, subject to its impact by any subsequent development works. Dusk surveys are required to determine the presence or likely absence of roosting bats, species identification, population size, roost type, and the requirement for any associated mitigation. In accordance with best practice guidance, two nocturnal surveys will be required, which can be undertaken between May and mid-September inclusive. Taking a precautionary approach, additional survey work may be required if higher than expected activity is recorded.

Hibernating Bats: As pipistrelle species are known to utilise buildings for hibernation purposes, a precautionary approach will be followed. Any works regarding Building A during the winter months (October to April inclusive) are to be supervised by a suitably qualified and experienced bat ecologist under the direction of a method statement.

Method Statement for Great Crested Newts: To mitigate the low risk of encountering amphibians, reptiles, and small mammals, particularly within the hedgerow, scrub, and stored materials areas, a fingertip search must be conducted by a suitably experienced and licensed ecologist prior to any site clearance works, under the direction of a site-specific method statement. This approach is essential to prevent the potential for accidental injury or mortality of these animals during construction activities. Should any protected species be identified during the search, all work must cease, and a European Protected Species (EPS) licence from Natural Resources Wales will be required before work can recommence. Given the potential for these species to be present year-round, a precautionary approach is advised.

Sensitive Lighting Scheme: To prevent any adverse impact on potential commuting and foraging habitats for bats post-development, the provision of any permanent lighting on-site will require a sensitive lighting scheme. A lighting plan for the site must be functional and directional only, kept to a minimum, and service only the public areas of the proposed development as required for safety and security purposes. Lighting must be achieved using baffles and screens if necessary to ensure no light spill on any retained or planted vegetation, including off-site vegetation where there is potential to impact animals using nearby habitat features. The sensitive lighting scheme must follow advice detailed in 'Bats and Artificial Lighting in the UK: Technical Guidance Note 08/23' (2023).

Boundary Lighting Restrictions: No external lighting is to be installed along the northern boundary of the site to prevent adverse impacts on the existing hedgerow feature.

Construction Period Lighting: Between March and September inclusive, external lighting during the development period is to be limited to that which is necessary for safety and security purposes. This must be kept to a minimum and, where possible, works should be restricted to daylight hours. This requirement is necessary to prevent incidental impacts on commuting and foraging bats at the site.

Hedgehog Connectivity: To prevent local habitat fragmentation and maintain connectivity for hedgehogs, it is recommended that access holes of suitable size to allow passage are incorporated into the base of each new garden fence.

Nesting Birds Protection: If a nest is discovered during works and is active, it must be left undisturbed until all chicks have fledged. If any features associated with nesting birds are required to be altered during the bird breeding season, 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 during site inspection, an exclusion zone around the nest will be necessary to preserve this feature until the chicks have fledged.

Nesting Bird Compensation: To compensate for the loss of nesting bird habitat, an appropriate number of bird boxes must be installed on nearby trees or structures before site operations have been completed. Precise specifications and numbers of bird boxes must be advised once final layout designs have been finalised. However, suitable models will be of woodcrete construction to ensure longevity.

Enhancement Measures:

- Installation of integrated bat boxes within the new development.

- Installation of integrated bird nesting boxes suitable for common garden birds and house sparrows.
- Incorporation of access holes for hedgehogs at the base of new garden fences.
- Planting of native, wildlife-friendly species in landscaped areas.
- Retention and enhancement of existing linear features such as hedgerows to maintain ecological connectivity.

Biodiversity Net Gain: Implementation of biodiversity enhancement features is required to achieve a net gain for the site, as outlined in Section 10.0.

9.0 Report Validity

This report is valid for a period of 24 months from the survey date.

10.0 Biodiversity Net Gain

In accordance with the provisions of Chapter 6 of 'Planning Policy Wales' (Distinctive and Natural Places) and Local Planning Policy, biodiversity enhancement measures will be incorporated into the landscaping scheme of the proposed works to maximise the ecological value of the site and achieve measurable biodiversity net gain.

10.1 Specific Enhancement Measures

Enhancement for Bats: To provide roosting habitat for crevice-dwelling bat species, such as the common pipistrelle (*Pipistrellus pipistrellus*), one 'Integrated Eco Bat Box'¹ or similar artificial roost will be installed as high as possible on the southern or western elevation of each new unit. In general, bats seek thermally advantageous locations, and for this reason boxes should be positioned where they will receive full or partial sun exposure, although installing features in a variety of orientations will provide a range of climatic conditions. Bat boxes should be positioned at least 3m above ground level (ideally 6m) to prevent disturbance from people and potential predators. The most suitable location is at the southern elevation, directly below the eaves.

Enhancement for Birds: To provide additional nesting opportunities for breeding birds, one '1SP Schwegler Sparrow Terrace'² or similar woodcrete construction nest box will be attached as high as possible on the northern or eastern elevation gable of each new unit. This will compensate for the loss of nesting habitat within the existing building structure and provide opportunities for cavity-nesting species.

Enhancement for Hedgehogs: To maintain and enhance connectivity for hedgehogs and prevent habitat fragmentation, one hedgehog access hole (approximately 13cm×13cm) will be incorporated at the base of each new garden fence. This measure will ensure continued movement corridors for this protected species across the developed site.

Enhancements for Birds and Invertebrates (Planting and Landscaping): To mitigate for the potential loss of scrub habitat, maintain ecological connectivity, and increase local biodiversity, native trees, shrubs, or hedgerow planting will be established. For hedgerow installations, a double-row planting configuration is recommended, with rows positioned at least 40cm apart and planted at a density of 4-6 plants per metre, highlighting the importance of hedgerows for UK Biodiversity Action Plan (BAP) priority species.

To provide enhanced foraging habitat for bats, the planting scheme will include species that attract night-flying insects, such as evening primrose (*Oenothera biennis**), goldenrod (*Solidago virgaurea**), honeysuckle (*Lonicera periclymenum**), and fleabane (*Pulicaria dysenterica**).

¹ <https://www.nestbox.co.uk/products/integrated-eco-bat-box>

² <https://www.nhbs.com/1sp-schwegler-sparrow-terrace>

A species-rich under-canopy seed mix will be incorporated with all tree planting and hedgerow installations, and a species-rich seed mix will be utilised for all new green spaces and lawn areas to maximise botanical diversity and invertebrate habitat provision.

Implementation and Maintenance: The property owners will be responsible for the implementation of these enhancement measures and the ongoing maintenance of all enhancement features in perpetuity. Should any feature fail or become damaged through natural weathering or other causes, it will be promptly replaced to ensure continued biodiversity benefit.

10.2 Conclusion of Biodiversity Net Gain

The proposed enhancement measures detailed above will maintain ecological connectivity across the site, increase local biodiversity through habitat diversification, and provide additional nesting and foraging opportunities for a range of wildlife species. Through the implementation of these targeted interventions, the development will achieve measurable biodiversity net gain for the site, contributing positively to the local ecological network and fulfilling policy requirements for environmental enhancement.

11.0 References

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Appendix A: Site Location

Date: August 2025

Produced by: Little Wing Ecology

Our Reference: LT318-PEA-25

Author: N S Aldridge

Legend

- Site location



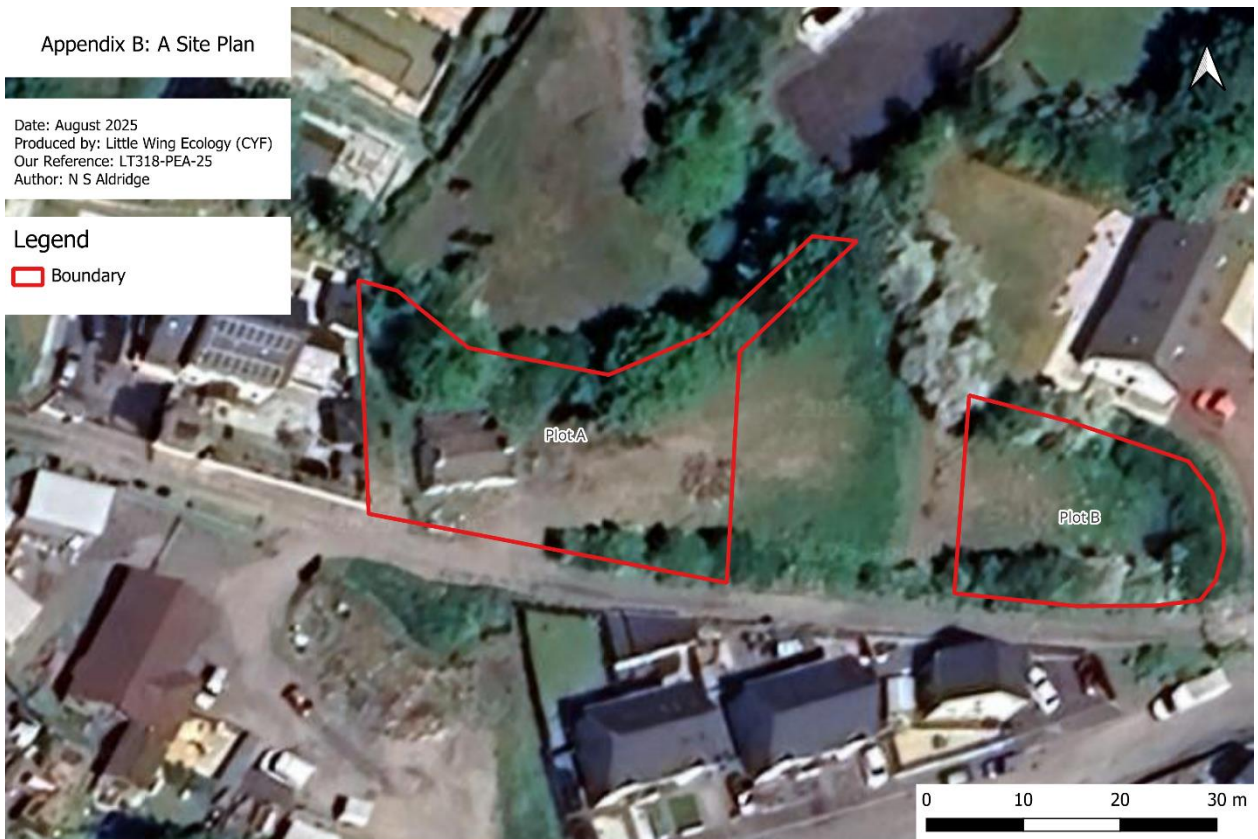
QGIS Development Team, <2025>. QGIS Geographic Information System. Open-Source Geospatial Foundation Project.

Appendix B: A Site Plan

Date: August 2025
Produced by: Little Wing Ecology (CYF)
Our Reference: LT318-PEA-25
Author: N S Aldridge

Legend

□ Boundary



QGIS Development Team, <2025>. QGIS Geographic System. Open-Source eospacial Foundation Project.

Appendix C: Phase 1 Map

Date: August 2025
 Produced by: Little Wing Ecology (CYF)
 Our Reference: LT318-PEA-25
 Author: N S Aldridge

Legend

-  A2.2 - Scrub - scattered
-  J1.3 - Disturbed land - short perennial
-  J2.1.2 - Intact hedge - species-poor
-  J3.6 - Buildings
-  J4 - Bare ground
-  J5 - Other habitat
-  J2.4 - Fence
-  Target Note
-  1 - Wood pile
-  2 - Stone pile
-  Boundary



QGIS Development Team, <2025>. QGIS Geographic System. Open-Source eospacial Foundation Project.

Appendix D: Site Photographs - Habitat



Scattered Scrub (A2.2)



Amenity Grassland (J1.2)



Disturbed land - ephemeral (J1.3)



Intact hedge - native species poor (J2.1.2)



Building (J3.6)



Bare ground (J4)



Other (J5)

Appendix E: Target Notes (Photography)



Target note 1 – Rock piles – Potential shelter for small mammals, reptiles and amphibians.



Target note 2 – Wood piles – Potential shelter for small mammals, reptiles and amphibians.

Appendix F: PRA & Daytime Bat Walkover (Photography)



Exterior – Southern elevation - multiple PRFs recorded.



Exterior – Western elevation - multiple PRFs recorded.



Exterior – Northern elevation - multiple PRFs recorded.



Exterior – Eastern elevation - multiple PRFs recorded.



Exterior – PRF – Raised ridge tiles



Exterior – PRF – Multiple raised tiles



Exterior – PRF – Broken roof panel	Exterior – PRF – Missing roof edge
 A photograph showing the exterior of a building with a light-colored, textured wall. A dark, rectangular roof panel is broken and hanging off the edge of the roof. Green foliage is visible in the background.	 A photograph showing the exterior of a building with a dark, tiled roof. The edge of the roof is missing, and the tiles are visible. Green foliage is visible in the background.
Exterior – PRF – Missing roof edge	Exterior – PRF – Missing tiles – hole in roof
 A photograph showing the exterior of a building with a light-colored, textured wall. The roof edge is missing, and the interior of the building is visible. Green foliage is visible in the background.	 A photograph showing the exterior of a building with a light-colored, textured wall. A hole in the roof is visible, showing the interior of the building. Green foliage is visible in the background.
Interior – No physical evidence of roosting was recorded.	Interior – restricted access to small loft space. Some portions of bitumen and breathable membrane were visible.

Appendix G – Species List

Common name	Scientific name	Scattered Scrub (A2.2)	Amenity Grassland (J1.2)	Disturbed land - ephemeral (J1.3)	Intact hedge - native species poor (J2.1.2)	Bare ground (J4)	Other (J5)
Bird - Blackbird	<i>Turdus merula</i>				x		
Bird - Dunnock	<i>Prunella modularis</i>				x		
Bird - House sparrow	<i>Passer domesticus</i>				x		
Bird - Robin	<i>Erithacus rubecula</i>				x		
Bird - Song thrush	<i>Turdus philomelos</i>				x		
Bird - Siskin	<i>Spinus spinus</i>				x		
Bird - Wren	<i>Troglodytes troglodytes</i>				x		
Black medic	<i>Medicago lupulina</i>					x	
Bramble (European blackberry)	<i>Rubus fruticosus</i>	x	x	x	x	x	
Buttercup (Creeping)	<i>Ranunculus repens</i>	x	x	x	x	x	
Clover (Red)	<i>Trifolium pratense</i>			x		x	
Colt's foot	<i>Tussilago farfara</i>	x	x	x			
Cranesbill spp.,	<i>Geranium spp.,</i>		x				
Daisy (ox-eye)	<i>Leucanthemum vulgare</i>			x			
Daisy (Common)	<i>Bellis perennis</i>			x			
Dandelion (common)	<i>Taraxacum officinale</i>			x		x	
Dock (Broad-leaved)	<i>Rumex obtusifolius</i>	x	x	x	x	x	
Dog rose	<i>Rosa canina</i>				x		
Fern	<i>Dryopteris spp.,</i>				x		
Fern (Scaly male)	<i>Dryopteris affinis</i>				x		
Grasses - Meadow foxtail	<i>Alopecurus pratensis</i>	x		x			
Grasses - Yorkshire fog	<i>Holcus lanatus</i>		x	x		x	
Grasses - Red fescue	<i>Festuca rubra</i>			x		x	
Hawksbeard (Beaked)	<i>Crepis vesicaria</i>			x			
Herb Robert	<i>Geranium robertianum</i>		x		x		
Ivy (Common)	<i>Hedera helix</i>		x		x		
Nettle (Common)	<i>Urtica dioica</i>		x				
Pinapple weed	<i>Matricaria discoidea</i>					x	
Plantain (Broad leaved)	<i>Plantago major</i>					x	
Plantain (Ribwort)	<i>Plantago lanceolata</i>			x	x		
Rush (Hard)	<i>Juncus inflexus</i>		x	x			
Speedwell (Germander)	<i>Veronica chamaedrys</i>				x		
Thistle (Bull)	<i>Cirsium vulgare</i>		x				
Thistle (Creeping)	<i>Cirsium arvense</i>			x			
Thistle (Prickly-sow)	<i>Sonchus asper</i>		x			x	
Thistle (Sow)	<i>Sonchus spp.,</i>		x			x	
Tree - Ash (European)	<i>Fraxinus excelsior</i>				x		
Tree - Sycamore	<i>Acer pseudoplatanus</i>		x		x		
Tree/shrub - Elder	<i>Sambucus nigra</i>				x		
Tree/shrub - Hawthorn (Common)	<i>Crataegus monogyna</i>	x			x		
Tree/shrub - Hazel (common)	<i>Corylus avellana</i>				x		
Tree/shrub - Holly (Common)	<i>Ilex aquifolium</i>				x		
Tree/shrub - Willow (Goat)	<i>Salix caprea</i>		x				
Vetch (Bush)	<i>Vicia sepium</i>		x				
Willowherb (Broad-leaved)	<i>Epilobium montanum</i>	x	x	x		x	
Willowherb (Rosebay)	<i>Chamaenerion angustifolium</i>	x	x	x			
Wood avens	<i>Geum urbanum</i>	x			x		

Appendix H: Meet the 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 eight 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 a large Conservation Organisation, and a wildlife surveyor with Little Wing Ecology. She has over ten years' experience working in practical conservation. Following a degree in Outdoor Education, Liz volunteered with The 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, intermediate tree survey and inspection, dormouse training and recording, bumblebee conservation – bee walks and many more. Currently Liz is responsible for the management of seven Nature Reserves including four SSSIs. 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 employed by the NHS as a Porter 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 the TRF (Trail Riders Fellowship). 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 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 wildlife surveyor with Little Wing Ecology. Richard has a life-long love of nature and has 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 recently completed his bachelor's degree in ecology and conservation science at the 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, consultancy, habitat management/identification, data collection, data analysis using software such as 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 previously ran a college newspaper and is committed to community engagement - both in her academic life and in the local community, as shown by her willingness to integrate herself into the towns of both Ebbw Vale and Lampeter. Elise is currently studying creative writing and has a keen interest in nature and habitat preservation. She has attended several training sessions with Little Wing Ecology to develop her knowledge, understanding and practical skills in bat monitoring and bat ecology.
Nadine Morgan (NM) is a County Ecologist with a Local Authority and wildlife surveyor with Little Wing Ecology, with over 15 years experience of working in conservation. Following a degree in Physical Geography, Nadine volunteered with a Wildlife Trust and with the Countryside Team in a Local Authority before becoming employed in a Local Authority as a Biodiversity Officer. She held this position since 2010 before taking on the role of County Ecologist in 2020 and has held this position since. She has been a Full member of CIEEM since 2022. During this time responsibilities have included, delivering environmental education, working with community groups, carrying out practical conservation on several Local Nature Reserves, conducting ecological surveys on Phase 1 Habitats, reptile & amphibian, curlew monitoring and also bat surveys. The results of surveys have been used to inform the writing of ecological management plans for several sites. Nadine has attended many ecological training sessions to enhance her knowledge and skills.
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 I: Species potential defined by integrating national guidelines e.g. Hundt 2012

Confirmed Presence	Species recorded to be present during the survey. Evidence of species is recorded during the survey.
High	Buildings, trees or other structures with features of interest for use by protected species are recorded e.g. nesting habitat, roosting opportunities and/or ponds. Habitat with high quality foraging opportunities e.g. broadleaved woodland, tree-lined watercourses and grazed grassland. The site is connected to the wider landscape by strong linear features that have the potential to be used by commuting species e.g. a river, stream and/or hedgerows. The site is close to known locations of recorded protected species.
Medium	Several potential habitat opportunities in buildings, trees or other structures recorded during the survey. Habitat could be used for foraging e.g. trees, shrubs, grassland and/or water. The site is connected to the wider landscape by linear features that could be used by commuting species e.g. lines of trees, scrubs or linked back gardens.
Low	A small number of less significant features are recorded. Isolated habitat suitable for foraging e.g. a lone tree or patch of scrub. An isolated site which is not connected by significant linear features in the landscape.
Negligible	No suitable habitats observed.

Appendix J: Bat Friendly Lighting Scheme

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., if there is 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 detailed 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 of 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.

A copy of 'Bats and Artificial Lighting in the UK: Technical Guidance Note 08/23' (2023) can be found here:

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

Appendix K: Policy and Legislation in Wales

Under Regulation 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 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), it is an offence 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: 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 help 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 for 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 identify 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.,



CYFYNGIADAU

Mae Little Wing Ecology (CYF) wedi paratoi'r Adroddiad hwn at ddefnydd y Cleient neu ei Asiantau uchod yn unig yn unol â'n telerau busnes, y cyflawnwyd ein gwasanaethau oddi tanynt. Ni roddir unrhyw warant arall, wedi'i mynegi neu ei hawgrymu, ynghylch y cyngor proffesiynol sydd wedi'i gynnwys yn yr Adroddiad hwn nac unrhyw wasanaethau eraill a ddarperir gennym ni. Ni all unrhyw barti arall ddibynnu ar yr Adroddiad hwn heb gytundeb ysgrifenedig penodol ymlaen llaw gan Little Wing Ecology (CYF).

Mae'r asesiadau a wnaed yn rhagdybio y bydd y safle(oedd) a'r cyfleusterau yn parhau i gael eu defnyddio i'w pwrpas presennol heb newid sylweddol. Mae'r casgliadau a'r argymhellion yn yr Adroddiad hwn yn seiliedig ar wybodaeth a ddarparwyd gan eraill ac ar y dybiaeth bod yr holl wybodaeth berthnasol wedi'i darparu gan y partïon hynny y gofynnwyd amdani. Nid yw gwybodaeth a gafwyd gan drydydd partïon wedi'i dilysu'n annibynnol gan Little Wing Ecology (CYF).

Cynhyrchwyd gan:

Rhif cwmni:

Cyfeiriad:

E-bost:

Ffôn:

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About Us

Little Wing Ecology is a not-for-profit ecological consultancy based in the South Wales Valleys. Specialising 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
- Green Infrastructure Statements
- European Protected Species License Applications
- On-site Services to Support Planning Applications and Development
- eDNA Reports
- Reptile Surveys

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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