



**Plots 9 & 10,  
Heolgerrig, Merthyr Tydfil**

**Preliminary Ecological Appraisal**

**July 2024**

# Acer Ecology

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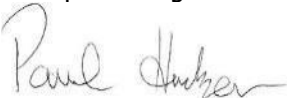
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**Document Verification Table**

| Plots 9 & 10, Heolgerrig, Merthyr Tydfil<br>Preliminary Ecological Appraisal |              |                                                                                                                        |                                                                                                                                |                                                                                                                                    |
|------------------------------------------------------------------------------|--------------|------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Revision                                                                     | Date         | Prepared by                                                                                                            | Checked by                                                                                                                     | Verified by                                                                                                                        |
| 1.0                                                                          | 05 July 2024 | Kelly Brown<br>Senior Ecologist<br> | Isabel Humphries<br>Assistant Ecologist<br> | Paul Hudson MCIEEM<br>Principal Ecologist<br> |

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## Summary

|                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Brief and Site Location</b>  | Acer Ecology Ltd. were instructed by Maxiom to conduct a preliminary ecological appraisal of land at Plots 9 & 10, Heolgerrig, Merthyr Tydfil, CF48 1UN, within the boundary of Merthyr Tydfil County Borough (Ordnance Survey Grid Reference centred at: SO 0395 0622).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Development Proposals</b>    | The proposed development works comprises of the construction of 2 detached properties on Plots 9 & 10 of the site. The area is already cleared for construction. Precise details of the properties being developed are unavailable at the time of writing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Impacts to Key Receptors</b> | <p>The development may result in adverse impacts to the following protected sites:</p> <ul style="list-style-type: none"><li>Indirect impacts are anticipated to the Cwm Glo a Glyndyrys SSSI, which lies 200m south of the site boundary during the construction phase without appropriate mitigation.</li></ul> <p>Provided appropriate precautionary and mitigation measures detailed in Section 4 are implemented, the development is not anticipated to result in adverse impacts to any habitats and species.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Invasive Species</b>         | The development may result in the spread of Buddleja invasive plant species. Measures to prevent this are set out in Section 4.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Required Actions</b>         | <p>The following provisional recommendations have been developed based on the development proposals available at the time of writing. They may be subject to change upon receipt of the final design:</p> <ul style="list-style-type: none"><li>Precautionary measures:<ul style="list-style-type: none"><li>The small areas of scattered bramble scrub should be removed outside of the bird nesting season (March to September inclusive) if required; and</li><li>A pre-commencement badger survey should be conducted prior to works starting on site. It is recommended that during the construction phase any steep sided holes left open overnight should be equipped with a mammal ladder.</li></ul></li><li>Mitigation measures:<ul style="list-style-type: none"><li>The retained area of broadleaved woodland adjacent to the clearance areas will be protected and securely fenced-off with appropriate temporary fencing;</li><li>A Construction and Environmental Management Plan (CEMP) should be produced for the works;</li><li>A Landscape and Ecological Management Plan (LEMP) should be produced as part of the planning conditions for the site; and</li><li>A sensitive lighting strategy should be produced as part of the planning conditions for the site.</li></ul></li><li>Compensation and enhancement measures:<ul style="list-style-type: none"><li>Broad recommendations include hedgerow planting; wildflower grassland creation; hedgehog, bird and bat boxes; amphibian ladders and hibernacula; and SuDs enhancements.</li></ul></li></ul> |
| <b>Licensing Requirements</b>   | None required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

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|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Conclusions</b> | <p>Provided the precautionary and mitigation measures detailed in Section 4 are implemented, the development is not anticipated to result in adverse impacts to any protected sites, habitats or species.</p> <p>The site's ecological value will not represent a fundamental constraint to the proposed development.</p> <p>If development works do not begin within eighteen months to two years of the date of this report of this report, an update survey is likely to be required in accordance with guidance from Natural Resources Wales (NRW) (CIEEM, 2019) and BS 42020:2013, to determine if conditions have changed since those described in this report.</p> |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 1. Introduction

### 1.1. Brief and Site Location

Acer Ecology Ltd. were instructed by Maxiom to conduct a preliminary ecological appraisal of land at Plots 9 & 10, Heolgerrig, Merthyr Tydfil, CF48 1UN, within the boundary of Merthyr Tydfil County Borough (Ordnance Survey Grid Reference centred at: SO 0395 0622)<sup>1</sup>. The assessment documents the baseline ecological condition of the survey area, which is shown by the red line boundary on Plan 1. Designated sites, habitats, protected and notable species of conservation interest that could be affected by the proposed works are identified, and subsequent recommendations provided.

This assessment will provide initial recommendations based on the development proposals available at the time of writing. They should be revised upon finalisation of the design.

### 1.2. Site Description

The proposed development site measures approximately 0.06 hectares, and mainly comprises cleared ground and a large rubble pile which was sparsely vegetated with ruderal and ephemeral short perennial species within the south of an active construction site. A small area of dense scrub was present on the eastern boundary. Immature secondary woodland and dense bramble scrub was present adjacent to the southern boundary. The site formerly comprised immature secondary woodland during the original PEA survey which was carried out by Pryce Consultant Ecologists in 2019. The land to the north and west of the site has been granted planning permission (application no. P/19/0228) for eight residential development plots which are subject to separate planning applications, four of which have been or were currently under construction at the time of survey. As part of the phased planning application each plot is subject to its own planning conditions and LEMP including biodiversity enhancements. The site is situated west of Merthyr Tydfil, to the north and east there are urban areas which are parts of the town, with the A470 approximately 30m to the south-east of the site boundary. The Cwm Glo a Glyndyrys SSSI lies approximately 200m south of the site boundary which comprises 181ha of extensive areas of marshy grassland, species-rich neutral grassland and acid grassland, and for the association of these habitats with others including woodland and heath. The site is also of special interest for its outstandingly diverse assemblage of grassland fungi, including 32 species of waxcap *Hygrocybe* spp, making it one of the best sites in Britain. The site is characterised by relatively flat topography and sits approximately 208m above sea level.

### 1.3. Proposed Works

The proposals include the development of two additional Plots 9 & 10 to the south-east of plots 1-8 which were actively under construction at the time of survey.

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<sup>1</sup> Latitude and Longitude: 51.746382 , -3.3926645/ what3words: pink.salad.leap

During Pre-Application consultations the LPA has advised that a Landscape and Ecological Management Plan (LEMP) is required in support of the detailed application for the plot which should be read in conjunction with the Landscape Master Plan applicable to the whole development site (Pryce Consultant Ecologists, 2020).

## **1.4. Scope of the Study**

The study comprised the following:

- A desk study to identify existing information on statutory and non-statutory sites of nature conservation interest, and records of notable or protected habitats or species within the site and its surrounding area;
- A Phase 1 Habitat Survey of the site, extended to search for evidence of, and potential for, protected fauna; and
- Identification of potential ecological constraints to the proposed development and assessments of impacts including appropriate mitigation measures where necessary.

## **1.5. Review of Historic Site Data**

A relevant historic report exists for the proposed development:

A Preliminary Ecological Appraisal Pryce Consultant Ecologists in September 2019.

The report stated *'The site is currently mainly occupied by planted woodland and colonising scrub with adjacent horse-grazed, rather sparse grassland, all established on regraded colliery spoil. These are all secondary habitats which have become established since the c.1990s and, although capable of supporting nesting birds and other fauna, cannot be considered to be any more than of local significance.'*

*The Merthyr Council Ecologist & Countryside Officer – Planning and Countryside has been consulted and commented as follows. "The possible ecological issues on the site are likely to include (but not be limited to): bats roosting in trees and/or foraging and commuting across the site, nesting birds, reptiles, west European hedgehog."*

*The present survey and SEWBRc data indicate that the most significant impacts from the proposed development are likely to be limited to the potential for disturbance to bats (which are European Protected Species), reptiles, terrestrial-phase amphibians and nesting birds (which are protected to varying degrees by the Wildlife and Countryside Act 1981) and Hedgehog (a Species of Principal Importance listed under section 7 of the Environment (Wales) Act 2016. Great Crested Newts are known from the area but it is judged that, as the nearest recorded breeding ponds are greater than 500m distant from the survey site, the proposed development will not significantly impact this species. The young age and generally etiolated conformation of most trees within the site present no, or only very limited potential for harbouring roosting bats. Furthermore, habitat with potential to attract reptiles and terrestrial-phase amphibians is judged to be limited to the edge habitat between the planted woodland and sparse grassland as shown on figure 3. There is also potential for Hedgehogs to seek refuge in this edge habitat.'*

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*The development of the site will result in the loss of cover, potential bird nesting sites, bird territories, faunal foraging resources and commuting routes for bats and other fauna within the application site but this loss is of low significance when viewed in the context of the extent of similar existing habitats that will remain in the vicinity.*

*Three plant species of County Borough Importance were recorded during the survey. Only a single plant of one of these species, Spiked Sedge, is located within the application site and will need to be disturbed by the proposed development. This was translocated within the scheme.*

Landscape and Ecology Management Plans were produced by Pryce Consultant Ecologists, for Plots 1-10 on the same site. The reports detailed that the site was cleared in 2020 and specified certain mitigation measure to be taken to create areas within the existing proposals for wildlife to inhabit. Site clearance was carried out in compliance with the recommendations made in Section 5 of the whole site Landscape Master Plan and the Landscape and Ecology Management Plan. Broad recommendations included broadleaved woodland retention on the northern and western aspects, hedgerow planting on the boundaries and between plots, wildflower grass verges along the access roads, integrated bat roost and bird nesting features in the new buildings, gullypot ladders for reptiles and amphibians, log piles and hibernacula, hedgehog gaps.

## **1.6. Reporting**

This report aims to:

- Outline the methodology used during the survey;
- Present the baseline ecological information;
- Provide an ecological evaluation of on-site habitats, including an assessment of the potential for protected species;
- Assess the potential impacts of the proposed development on ecological receptors;
- Assess the potential ecological constraints to the proposed development; and
- Provide recommendations for further survey, avoidance, mitigation and enhancement where appropriate.

## 2. Methods

### 2.1. Scope of Assessment

This assessment has been undertaken following the approach detailed in the Chartered Institute of Ecology and Environmental Management's 'Guidelines for Ecological Impact Assessment in the UK and Ireland' (CIEEM, 2018). The assessment has focussed on 'Important Ecological Features' that are present within the 'Zone of Influence' of the project. Important Ecological Features, as detailed in Box 14 of the CIEEM's Guidelines comprise:

- Habitats and Species of Principal Importance for the Conservation of Biodiversity in Wales;
- Legally protected species; and
- Red Listed or rare species (based on Red Data Book lists, Birds of Conservation Concern and species considered to be nationally rare/scarce).

The Zone of Influence (ZoI) is the area over which a development proposal could have an influence on ecological features. The ZoI will vary for different features, although the ZoI for this proposed development comprises the land within the red line boundary and immediately adjacent habitat features.

### 2.2. Desk Study

#### 2.2.1. Protected Sites, Habitats and Species

Existing information on designated sites and protected species was obtained from the sources detailed in Table 1.

Table 1: Sources of Data

| Source                                                                      | Data                                                                                                                   | Radius of Search                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Natural resources Wales (NRW) Geographical Information Systems (GIS) Layers | Statutory and non-statutory nature conservation designated sites                                                       | Ramsar/Special Area of Conservation (SACs)/Special Area of Protection (SPAs)/Site of Special Scientific Interest (SSSIs) National Nature Reserves (NNRs), Local Nature Reserves (/LNRs), Ancient Semi-Natural Woodland, (ASNW), Restored Ancient Woodland Sites (RAWS) and Plantation on Ancient Woodland Sites (PAWS) - 2km <sup>2</sup><br><br>SACs (designated for bats) - 10km |
| South East Wales Biological Records Centre (SEWBRc)                         | Protected species records (SEWBRc unique reference: 0245-178)<br><br>Site of Importance for Nature Conservation (SINC) | 1km.<br><br>1km.                                                                                                                                                                                                                                                                                                                                                                   |

All available records of bat roosts, badger, dormouse, amphibians and reptiles were considered. For other species, only records collected within the last 10 years were considered relevant.

The protected species search of 1km is considered appropriate. Page 15 of CIEEM's Guidelines for Preliminary Ecological Appraisals states that 'Existing ecological information for the site and adjacent areas should extend to at least 1km from the site boundaries (or 0.5 km for sites of approximately 1 ha or less). The search for desk study information will need to extend further beyond the site boundaries to ensure that all information of relevance to the assessment has been collected. In this instance a 1km data search for protected species is considered appropriate.

## **2.2.2. Landscape Context**

The site and wider landscape were assessed and characterised using aerial images, Ordnance Survey maps and SEWBrEC data. The presence of off-site features and habitats, which add to the ecological value within the wider area (for example, ponds within 0.5km of the site) were identified. Where appropriate, such features were scoped into the detailed assessment of impacts presented in Section 3.

## **2.2.3. Ancient Woodland**

Although ancient woodland is not a designated site as such, it is often listed as a designated site due to its ecological significance and associated protection. Ancient woodland has therefore been included within the non-statutory designated site section of this report.

## **2.2.4. Planning Authority**

The Merthyr Tydfil Council Planning Portal<sup>2</sup> was consulted to determine if any previous survey information was available for the site, or immediate surroundings.

## **2.3. Field Study**

### **2.3.1. Personnel**

The field survey was undertaken in inclement weather on the 4<sup>th</sup> June 2024 by Kelly Brown<sup>3</sup>.

### **2.3.2. Vegetation and Habitats**

The vegetation and habitat types present within the survey area were categorised and mapped in accordance with the standard<sup>4</sup> The UK Habitat Classification (version 2) codes (UK Hab 2023). Dominant and conspicuous plant species were recorded for each habitat. Target notes were used to record information on features of ecological interest, such as evidence of, or habitats with potential to support, protected species, or where any features of interest too small to map were recorded. Following the completion of the survey, a colour-coded habitat plan was digitised using QGIS to show the extent and distribution of the different habitat types present within the site (see Plan 3).

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<sup>2</sup> <https://www.merthyr.gov.uk/resident/planning-and-building-control/planning-search-and-weekly-lists/>

<sup>3</sup> Kelly holds a Field Identification Skills Certificate (FISC) Level 4 botanical qualification and holds NRW survey licences for bats, dormice and great crested newts.

<sup>4</sup> Some additional categories were also used if applicable e.g. broadleaved trees indicated by green filled circles rather than using secondary codes.

Habitats of principal importance detailed within Section 7 of Environment Wales Act 2016 within the site were identified.

Invasive plant species listed on Schedule 9<sup>5</sup> of the Wildlife and Countryside Act 1981 (as amended), such as Himalayan balsam (*Impatiens glandulifera*), giant hogweed (*Heracleum mantegazzianum*) and Japanese knotweed (*Fallopia japonica*) were also noted during the survey, if present.

### 2.3.3. Protected and Notable Species

Evidence of, and habitats with, potential to support protected or notable species were noted, especially species meeting any of the following criteria:

- Listed under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species (Amendment) (EU Exit) [‘CHSAEU’] Regulations 2019;
- Listed under Section 7 of the Environment (Wales) Act 2016 as being of principal importance for maintaining and enhancing biodiversity in Wales;
- Listed as a local priority for conservation, for example in the relevant Local Biodiversity Action Plan (LBAP);
- Red Listed using International Union for the Conservation of Nature (IUCN) criteria (e.g. in one of the UK Species Status Project<sup>6</sup> reviews, in the Species of Conservation Concern Red, Amber or Near Threatened List<sup>7</sup>, Birds of Conservation Concern in Wales<sup>8</sup>, or, where a more recent assessment of the taxonomic group has not yet been undertaken, listed in a Red Data Book);
- Listed as a Nationally Rare or Nationally Scarce species (e.g. in one of the Species Status Project reviews) or listed as a Nationally Notable species where a more recent assessment of the taxonomic group has not yet been undertaken; and/or
- Endemic to a country or geographic location (it is appropriate to recognise endemic sub-species, phenotypes, or cultural behaviours of a population that are unique to a particular place).

Only those species with potential to be present on-site are mentioned within this report. The methodologies used were as follows:

### **Birds**

Any birds observed during the field survey were recorded, in addition to features capable of supporting nesting birds (e.g. trees, hedgerows, buildings, bramble, ruderal vegetation and rough grassland etc.). The site was also assessed for its actual and potential suitability to support Wildlife and Countryside Act 1981 (as amended) Schedule 1 species.

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<sup>5</sup> Schedule 9 species of plants and animals are ones that do not naturally occur in Great Britain but have become established in the wild and represent a threat to the natural fauna and flora.

<sup>6</sup> The Species Status project is the successor to the JNCC’s Species Status Assessment project, providing up-to-date assessments of the threat status of various taxa using the internationally accepted Red List guidelines (<http://jncc.defra.gov.uk/page-1773>).

<sup>7</sup> Eaton *et al.* (2015) Birds of conservation concern 4: the population status of birds in the UK, Channel Islands and Isle of Man. British Birds 108: 708-746.

<sup>8</sup> Johnstone, I. and Bladwell, S. (2016) Birds of Conservation Concern in Wales 3: the population status of birds in Wales. Birds in Wales 13 (1).

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A comprehensive bird survey, such as a breeding bird survey, was not undertaken as this was beyond the scope of the assessment.

## **Bats**

### Preliminary Ground-level Roost Assessment

There are no trees present within the survey area, therefore a preliminary ground-level assessment was not carried out.

### Buildings Assessment

There are no buildings present within the survey area, therefore a building assessment was not carried out.

### Terrestrial Habitat Assessment

A preliminary assessment of the value of the site for bats (and any potential roost sites therein) was made in accordance with Table 4.1 of the Bat Surveys for Professional Ecologists (Collins, 2023) (see Appendix 5). The assessment was based on the relative abundance and quality of habitat features within the site, and surrounding landscape, suitable for roosting, foraging and commuting bats.

Landscape features suitable for foraging and commuting bats include linear landscape features such as watercourses, transport corridors (e.g. roads, sunken lanes railways), walls, hedgerows, coppice, woodland fringe, tree lines, ditches and areas of scrub and pasture.

## **Dormice**

The habitats on site are not suitable for supporting dormice. In addition, no records of dormice within 1km of the site have been provided by SEWBRc. Therefore, no adverse impacts are envisaged to occur. This species is therefore not mentioned further in this report.

Furthermore, no woodland or scrub surrounding the site boundary will be cleared. In addition, no records of dormice within 1km of the site were provided by SEWBRc. Therefore, no adverse impacts to this species are envisaged to occur. This species is therefore not mentioned further in this report.

## **Great Crested Newts**

The survey area was appraised for its suitability to support great crested newts (*Triturus cristatus*) (GCN). The assessment was based on guidance outlined in the Herpetofauna Workers' Manual (Joint Nature Conservation Committee, 2003) and the Great Crested Newt Conservation Handbook (Langton, Beckett & Foster, 2001).

Ordnance Survey maps and aerial images of the land surrounding the site were consulted to determine if any waterbodies or watercourses were present within the site or within 0.5km of it. One pond, within the

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Cwm Glo a Glyndyrys SSSI, and several watercourses, including the Afon Taf SINC, were identified within the study area (see Plan 6).

Access had not been arranged at the point of survey, and therefore a Habitat Suitability Index (HSI) (Oldham *et al.*, 2000) Assessments of these ponds could not be undertaken as part of the study.

Pond 1 is separated from the proposed development site by the two unnamed watercourses which lie south of the site boundary. However, flowing water is considered to be unsuitable for supporting GCN (English Nature, 2001). This watercourse was therefore deemed unsuitable for supporting GCN.

Major rivers are considered to act as a barrier GCN migration (English Nature, 2001) and therefore, the likelihood of GCN migrating onto the proposed development site is considered to be very low.

No additional suitable water bodies were recorded from within the study area, although it is possible that some garden ponds could be present in the area.

As part of the assessment, ponds are scored using 10 suitability indices<sup>9</sup>: Each of these features is awarded a score between 0 and 1, and a final score is calculated, also between 0 and 1 (a higher score representing more optimal conditions for GCN). This final score enables the pond to be ranked in terms of its suitability (poor, below average, average, good or excellent) and to estimate the likely presence of GCN within the water body.

The HSI assessment is not a substitute for undertaking GCN surveys, but can be used to inform the assessed likelihood of presence or absence. It is not sufficiently precise to prove that a higher score confirms presence, or a lower score confirms absence.

A full GCN survey was not undertaken, as this was beyond the scope of this assessment.

## ***Otters, Water Voles and White-Clawed Crayfish***

The nearest suitable watercourse for otters is the Afon Taff, approximately 645m east of the proposed development site. This watercourse is separated from site by the A470 and residential and commercial development associated with the town of Merthyr Tydfil. Due to the urbanised nature of the development to the area between the site and this watercourse, there is negligible likelihood of otters, water voles or white-clawed crayfish being present within the site, and they are not mentioned any further in this report.

## ***Badgers***

Earth embankments, wooded copses, hedgerows and dense bramble beds are habitat features that often contain evidence of badgers (*Meles meles*). Where present on-site and within a 30m buffer adjacent to the site, these and other suitable habitat features were searched for such evidence. Where present, the location of badger signs such as setts, runs, dung pits or latrines, prints, hair and foraging snuffle holes, were recorded.

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<sup>9</sup> The 10 suitability indices are: location, pond area, pond drying, water quality, shade, waterfowl presence, fish presence, number of ponds in the local area, terrestrial habitat, and macrophyte cover.

## ***Reptiles***

An assessment of the suitability of on-site habitats to support reptiles was made. Reptiles require a diverse range of habitats to meet their needs such as hedgerows, scrub, rough grassland, woodpiles, rubble, banks and compost heaps. The potential of the site to provide hibernation opportunities and spring/summer/autumn habitat was also assessed, with reference to guidance provided in the Herpetofauna Workers' Manual (Joint Nature Conservation Committee, 2003), the Reptile Management Handbook (Edgar, Foster & Baker, 2011) and the Reptile Mitigation Guidelines Technical Note TIN 102 (Natural England, 2013). The following factors were considered: vegetation type and structure; insolation (sun exposure); slope aspect; topography; surface geology; habitat connectivity; habitat size; prey abundance; refuge opportunity; hibernation opportunity; egg-laying potential for grass snake (*Natrix helvetica*); public pressure; percentage of shade; levels of disturbance and management regime.

A targeted presence/likely absence reptile survey was not undertaken as it was beyond the scope of this assessment.

## ***Hedgehogs***

The site's potential to support hedgehog was assessed using guidance on habitats of importance in Hedgehogs and Development (People's Trust for Endangered Species, 2022)<sup>10</sup> with the following habitats particularly favoured: dense scrub to build hibernation nests in during the winter; short grass to forage in for invertebrate prey; longer grass to forage in and to make nests in during the summer; areas of leaf litter to collect and use for hibernation nests; log piles and decaying vegetation to forage in and hibernate in; and hedgerows and boundary vegetation that are important corridors for travel and nesting sites.

## ***Other Species***

General habitat suitability and incidental sightings of other animal species were also noted.

### **2.3.4. Assessment of Ecological Value**

The value of the habitats and features of the site have been provisionally evaluated and graded in accordance with the Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland (CIEEM, 2018). The level of value of specific ecological receptors is assigned using a geographic frame of reference, i.e. international value being most important, then national, regional, county, district, local and, lastly, within the immediate zone of influence of the site only. Brief descriptions of how Acer Ecology interprets these categories are set out in Appendix 3.

Potential impacts on important ecological features (species, habitats and ecosystems<sup>11</sup>) are identified and assessed. Mitigation measures have been devised following the mitigation hierarchy and appropriate mechanisms for securing mitigation measures have been identified.

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<sup>10</sup> <https://www.hedgehogstreet.org/wp-content/uploads/2022/08/PTES-BHPS-Hedgehogs-and-development-guide-2022.pdf>

<sup>11</sup> The 2018 EcIA Guidelines from CIEEM make it clear that an EcIA should consider the impacts upon ecosystems, as well as habitats and species. Statements to this effect are found throughout the document including in sections 1.3, 1.9, 2.3, 4.1 and 4.8 etc.

## **2.3.5. Limitations**

### General Temporal Limitations

Any ecological survey can only identify what was present on-site at the time the survey was conducted and habitat usage by species can change over time.

### Incomplete Survey Information

Full surveys for the protected species listed previously have not yet been carried out. For some species of fauna for which evidence has been found or which are considered likely to occur on site, further targeted survey is advisable at a more appropriate time of year (see Section 4).

### Restricted Access to Water Bodies Within 0.5km of Site

Access to the waterbody within 0.5km of the site was not possible as some are situated on private land and access permissions had not been agreed at the time of the survey.

## 3. Baseline Ecological Conditions, Evaluation and Development Impacts

The baseline conditions and evaluation of the *in-situ* habitats and the actual/potential presence of protected species are discussed in this section. Potential impacts on protected sites, *in-situ* habitats and protected or notable species arising from the proposed development are identified, including both direct and indirect impacts and those associated with construction and operational stages.

A summary of relevant legislation and planning policies relating to protected sites, habitats and species is provided in Appendices 1 - 2.

### 3.1. Statutory Nature Conservation Designated Sites

#### Statutory Sites (SACs or SSSIs) Designated for Bats within 10km of Site

No SACs or SSSIs specially designated for bats lie within 10km of the site.

#### SSSIs, LNR and National Park within 2km of Site

The proposed development site lies within 2km of the following statutory sites:

Table 2: Statutory Sites Designated Within 2km

| Site Name and Designation              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Distance and Direction from Development Site | Development Impacts                                                                                                                                                                                                                                                                             |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cwm Glo a Glyndyrys SSSI <sup>12</sup> | <p>Cwm Glo a Glyndyrys is of special interest for its extensive areas of marshy grassland, species-rich neutral grassland and acid grassland, and for the association of these habitats with others including woodland and heath. It is also of special interest for its outstandingly diverse assemblage of grassland fungi, including 32 species of waxcap <i>Hygrocybe</i> spp, making it one of the best sites in Britain.</p> <p>The significant grassland fungal community has developed on the drier, more freely drained areas of the site, predominantly occurring in association with species rich neutral grassland and dry acid grassland habitats on site. The tips present throughout the site support much of the fungi interest. Species of note include three of the four grassland species listed on the UK Biodiversity Action Plan list – the big blue pinkgill <i>Entoloma bloxamii</i>, the olive earthtongue <i>Microglossum olivaceum</i> and the dark-purple earthtongue</p> | 200m south of the site boundary.             | Considering the distance between the designated site and the proposed development site no direct impacts to the SSSI are anticipated. However, the development is likely to have indirect impacts through dust, noise and hydrological impacts through the construction and operational phases. |

<sup>12</sup> [https://naturalresources.wales/media/665303/SSSI\\_1597\\_Citation\\_EN0015616.pdf](https://naturalresources.wales/media/665303/SSSI_1597_Citation_EN0015616.pdf)

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|                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                         |                                                                                                                                                                                                                                                                                         |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                 | <p><i>Geoglossum atropurpureum</i>. Other species of note include smoky spindles <i>Clavaria fumosa</i> and the diverse assemblage of waxcap <i>Hygrocybe</i> spp. fungi. Some 32 species of waxcaps have been identified at Cwm Glo a Glyndyrys, including the pink waxcap <i>Hygrocybe calyptriformis</i> and such uncommon species in Wales as <i>H. ingrata</i> and the nitrous waxcap <i>H. nitrata</i>, making the area one of the best sites for these attractive fungi in western Europe.</p> <p>A number of bird species are found at Cwm Glo a Glyndyrys and, including nightjar <i>Caprimulgus europaeus</i>, cuckoo <i>Cuculus canorus</i>, tree pipit <i>Anthus trivialis</i>, whinchat <i>Saxicola rubetra</i>, wood warbler <i>Phylloscopus sibilatrix</i> and redstart <i>Phoenicurus phoenicurus</i>. Great crested newts <i>Triturus cristatus</i> have been recorded in ponds on the site.</p> |                                         |                                                                                                                                                                                                                                                                                         |
| Cwm Taf Fechan Woodlands SSSI/LNR <sup>13</sup> | <p>Semi-natural broadleaved woodland. Wide variety of plants including several rare species. The dominant tree species are oak, ash, and downy birch, with an understorey of shrubs such as hazel and hawthorn. The Taf Fechan crosses the north crop of Carboniferous Limestone. The humid conditions in the wooded ravine allow a particularly rich moss and liverwort flora to grow, with over a hundred species recorded. There are a number of scarce plant species, such as limestone fern, a species found on limestone in South Wales, North-East Wales, Avon, Somerset and parts of northern England. There are also areas of acid grassland, limestone grassland and dry heath. These add diversity to Cwm Taf Fechan and help to maintain the large number of species to be found there.</p>                                                                                                           | 1.4km north of the site boundary.       | Considering the distance between the designated site and the proposed development site, the nature of it's designating features, the somewhat limited ecological connectivity, and the small-scale of the proposals, no adverse impacts are anticipated as a result of the development. |
| Brecon Beacons National Park <sup>14</sup>      | <p>Sandstone cliffs and rock outcrops, screes, cliff ledge vegetation, dry heathland, rare plants, and broad-leaved woodland. Important example of the Old Red Sandstone uplands. There is mixed broadleaf woodland in the sheltered valleys, rock-ledge flora on escarpments of the major corries and blanket bog and montane bent-fescue grassland on the summit ridges. Cliff</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1.68km north-west of the site boundary. | Considering the distance between the designated site and the proposed development site, the nature of it's designating features, the somewhat limited ecological connectivity, and the                                                                                                  |

<sup>13</sup> [https://naturalresources.wales/media/642350/SSSI\\_0404\\_Citation\\_EN001d5eb.pdf](https://naturalresources.wales/media/642350/SSSI_0404_Citation_EN001d5eb.pdf)

<sup>14</sup> [https://naturalresources.wales/media/646120/SSSI\\_0564\\_Citation\\_EN00127d2.pdf](https://naturalresources.wales/media/646120/SSSI_0564_Citation_EN00127d2.pdf)

# Acer Ecology

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                  |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------|
|  | ledges support tall-herb vegetation. Rare plants on the cliffs include northern bedstraw ( <i>Galium boreale</i> ), serrated wintergreen ( <i>Orthilia secunda</i> ), dwarf willow ( <i>Salix herbacea</i> ), purple saxifrage ( <i>Saxifraga oppositifolia</i> ) and a range of hawkweeds ( <i>Hieracium</i> ) that have a very restricted distribution in Wales. North facing cliffs of Craig Cerrig-gleisiad, Craig Cwm-llwch, Craig Cwm-Sere, Graig Cwm Cynwyn and Craig Cwareli support a range of arctic-alpine plant species, for example; purple saxifrage ( <i>Saxifraga oppositifolia</i> ), dwarf willow ( <i>Salix herbacea</i> ), serrated wintergreen ( <i>Orthilia secunda</i> ) and northern bedstraw ( <i>Galium boreale</i> ). |  | small-scale of the proposals, no adverse impacts are anticipated as a result of the development. |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------|

## 3.2. Non-statutory Nature Conservation Designated Sites

### SINCs

The proposed development site lies within 2km of the following non-statutory site:

Table 3: Non-Statutory Site Designated Within 2km

| Site Name and Designation | Description                                                                                                                                                                                                                                                                                                                                                                               | Distance and Direction from Development Site | Development Impacts                                                                                                                                                                                                                                                                             |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cwm Glo <sup>15</sup>     | Contains the Cwm-Glo a Glyndyrus SSSI which is of international significance for grassland fungi. Extensive areas of marshy grassland, species rich neutral grassland and acid grassland alongside woodland and heath supporting an impressive variety of protected, rare and uncommon species including marsh fritillary butterfly ( <i>Euphydryas aurinia</i> ) and Great Crested Newt. | 0.08km south-west of the site boundary.      | Considering the distance between the designated site and the proposed development site no direct impacts to the SINC are anticipated. However, the development is likely to have indirect impacts through dust, noise and hydrological impacts through the construction and operational phases. |
| Cwm Taf Fechan            | No citation available <sup>16</sup> .                                                                                                                                                                                                                                                                                                                                                     | 0.52km north of the site boundary.           | Considering the distance between the designated site and the proposed development site, the nature of it's designating features, the somewhat limited ecological connectivity, and the small-scale of the proposals, no adverse                                                                 |

<sup>15</sup> [http://citations.lercwales.org.uk/sinc/mtr/Cwm\\_Glo.pdf](http://citations.lercwales.org.uk/sinc/mtr/Cwm_Glo.pdf)

<sup>16</sup> No citation available at: [http://citations.lercwales.org.uk/index\\_sinc\\_mtr](http://citations.lercwales.org.uk/index_sinc_mtr)

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|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                    |                                                                                                                                                                                                                                                                                         |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                    | impacts are anticipated as a result of the development.                                                                                                                                                                                                                                 |
| Cwm Taf Fields & Cefn Coed Tip <sup>17</sup> | Linear series of fields between the Afon Taf Fawr and the A470, also containing areas of semi-natural woodland and a re-vegetated limestone slag tip from the former Cyfarthfa Ironworks as well as smaller areas of semi-improved acid grassland, scrub, bracken slopes and dry heathland.                                                                                                                                                                                                                                                                                                                                                                                                      | 0.57km north of the site boundary. | Considering the distance between the designated site and the proposed development site, the nature of it's designating features, the somewhat limited ecological connectivity, and the small-scale of the proposals, no adverse impacts are anticipated as a result of the development. |
| Afon Taf SINC <sup>18</sup>                  | The major river in the County Borough. Includes areas of bankside habitats, particularly towards the south where the river corridor is less industrialised than further north. Associated habitats are chiefly semi-natural woodland, including areas of ancient semi-natural woodland and linear wet woodlands. There are also numerous neutral grasslands, scrub patches and bracken stands, as well as small areas of marshy grassland and tall herb vegetation. Notable features of the river course include cobble banks which support localised plants. Otter occurs throughout the length of the river which is known to be of value to a wide variety of birds, fish, bats and reptiles. | 0.63km east of the site boundary.  | Considering the distance between the designated site and the proposed development site, the nature of it's designating features, the somewhat limited ecological connectivity, and the small-scale of the proposals, no adverse impacts are anticipated as a result of the development. |
| Rhydycar West <sup>19</sup>                  | Very extensive mosaic of ffridd enclosures supporting complex of semi-upland and lowland habitats, partly contained within conifer plantation. Main components are ancient semi-natural woodland fragments, other seminatural woodlands, wet heathland, dry heathland, marshy grassland and semi-improved neutral grasslands.                                                                                                                                                                                                                                                                                                                                                                    | 0.88km south of the site boundary. | Considering the distance between the designated site and the proposed development site, the nature of it's designating features, the somewhat limited ecological connectivity, and the small-scale of the proposals, no adverse impacts are anticipated as a result of the development. |
| Cwm Taf Fawr <sup>20</sup>                   | Section of major river tributary of the Afon Taf. The river extends into Brecon Beacons National Park to the north. Includes adjacent woodlands, which are relatively undisturbed in the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.98km north of the site boundary. | Considering the distance between the designated site and the proposed development site, the nature of it's designating                                                                                                                                                                  |

<sup>17</sup> [http://citations.lercwales.org.uk/sinc/mtr/Cwm\\_Taf\\_Fields\\_&\\_Cefn\\_Coed\\_Tip.pdf](http://citations.lercwales.org.uk/sinc/mtr/Cwm_Taf_Fields_&_Cefn_Coed_Tip.pdf)

<sup>18</sup> [http://citations.lercwales.org.uk/sinc/mtr/Afon\\_Taf.pdf](http://citations.lercwales.org.uk/sinc/mtr/Afon_Taf.pdf)

<sup>19</sup> [http://citations.lercwales.org.uk/sinc/mtr/Rhydycar\\_West.pdf](http://citations.lercwales.org.uk/sinc/mtr/Rhydycar_West.pdf)

<sup>20</sup> [http://citations.lercwales.org.uk/sinc/mtr/Cwm\\_Taf\\_Fawr.pdf](http://citations.lercwales.org.uk/sinc/mtr/Cwm_Taf_Fawr.pdf)

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|  |                                                                                                                                                                                                                                   |  |                                                                                                                                                                  |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | upper reaches and more urban in character further downstream. The upper reaches in particular are of high ecological value, comprising limestone gorge woodland with a rich ground flora. Numerous rare plant species occur here. |  | features, the somewhat limited ecological connectivity, and the small-scale of the proposals, no adverse impacts are anticipated as a result of the development. |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Ancient Woodland Sites

The following table shows the ancient woodland sites within 2km of the site:

Table 4: Ancient Woodland Sites Within 2km

| Ancient Woodland Site                                      | Number within 2km of Site                                                                                                                                                                                         |
|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ancient Semi-Natural Woodland (ASNW) <sup>73</sup>         | Seven                                                                                                                                                                                                             |
| Restored Ancient Woodland Sites (RAWS) <sup>74</sup>       | Three                                                                                                                                                                                                             |
| Plantations on Ancient Woodland Sites (PAWS) <sup>75</sup> | One                                                                                                                                                                                                               |
| Ancient Woodland Sites of Unknown Category <sup>76</sup>   | One                                                                                                                                                                                                               |
| Nearest Area of Ancient Woodland                           | An unnamed area of ASNW located 0.69km to the south-west of the site                                                                                                                                              |
| Development Impacts                                        | No development impacts due to the distance between these woodlands and the proposed development site, together with the small-scale nature of the works. They are therefore not mentioned further in this report. |

### 3.3. Habitats and Vegetation

The proposed development site measures approximately 0.06 hectares, and mainly comprises cleared ground and a large rubble pile which was sparsely vegetated with ruderal and ephemeral short perennial species within the south of an active construction site. A small area of dense scrub was present on the eastern boundary. Immature secondary woodland and dense bramble scrub was present adjacent to the southern boundary. The site formerly comprised immature secondary woodland during the original PEA survey which was carried out by Pryce Consultant Ecologists in 2019. The results of the general survey of habitats and vegetation are shown on Plan 5.

The site consists of the following elements which are described in detail below. These comprise:

Dense Scrub (H3);

Lowland broadleaved woodland (W1f); and

Developed land (Ub1).

### 3.4. Habitat Descriptions

#### 3.4.1. Dense Scrub (H3)

Two areas of bramble scrub were present within the site boundary:

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- **Area 1:** There was a thin strip of scattered bramble *Rubus fruticosus* agg and unmanaged neutral grassland along the eastern boundary of the site comprising frequent bramble, rough meadow grass *Poa trivialis*, Yorkshire-fog *Holcus lanatus* and false oat grass *Arrhenatherum elatius* with occasional common vetch *Vicia sativa*, hawthorn *Crataegus monogyna*, autumn hawksbit *Scorzonoides autumnalis*, cut-leaved crane's-bill *Geranium dissectum*, spear thistle *Cirsium vulgare*, dandelion *Taraxacum officinale*, field forget-me-not *Myosotis arvensis*, creeping buttercup *Ranunculus repens*, lesser hop trefoil *Trifolium dubium*, broadleaved dock *Rumex obtusifolium*, creeping thistle *Cirsium arvense*, hoary willowherb *Epilobium parviflorum*, cow parsley *Anthriscus sylvestris* and creeping cinquefoil *Potentilla reptans* with rare herb-Robert *Geranium robertianum*, hawkweed *Hieracium sp*, nipple wort *Lapsana communis* and wood avens *Geum urbanum*.
- **Area 2:** There was a strip of dense bramble scrub along the southern boundary between the site and the secondary woodland edge.

Photo 1: Area 1, scattered scrub along the eastern boundary



Photo 2: Dense scrub along the southern boundary



## 3.4.2. Lowland broadleaved woodland (W1f)

Immature secondary broadleaved woodland was present adjacent to the southern boundary of the site. The majority of the trees were immature with shallow roots growing on coal spoil. The canopy and shrub layers comprised frequent goat willow *Salix capreae*, hazel *Corylus avellana* and Italian alder *Alnus cordata* with occasional butterfly bush *Buddleja davidii*. The ground layer comprised abundant bramble with frequent cleavers *Gallium aparine* with occasional herb-Robert, germander speedwell *Geranium chamaedrys*, chervil *Anthriscus cerefolium*, broadleaved willowherb *Epilobium montanum*, rosebay willowherb *Chamerion angustifolium*, nettle *Urtica dioica*, sweet vernal grass *Anthoxanthum odoratum*, squirrel-tail fescue *Vulpia bromoides*, false oat-grass and shining crane's-bill *Geranium lucidum* with rare prickly sowthistle *Sonchus asper*, foxglove *Digitalis purpurea*, ragwort *Senecio jacobaea*, rose *Rosa sp* and wood avens.

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Photo 3: Woodland adjacent to the southern boundary, looking south



Photo 4: Area 4, the woodland adjacent to the southern boundary, looking west



## 3.4.3. Developed land (Ub1)

A majority of the site comprised cleared ground and a large rubble pile which was sparsely vegetated with ruderal and ephemeral short perennial species within the south of an active construction site. The rubble pile was vegetated with ephemeral short perennial and ruderal species including frequent creeping buttercup, Yorkshire-fog, weld *Reseda luteola* and colt's-foot *Tussilago farfara* with occasional hoary willowherb, common mouse-ear *Cerastium fontanum*, broadleaved willowherb, hairy bittercress *Cardamine hirsuta*, perennial sowthistle *Sonchus arvensis*, nipplewort, chervil, rough meadowgrass, common bent *Agrostis capillaris*, cock's-foot *Dactylis glomerata*, wood speedwell *Veronica montana*, bush vetch *Vicia sepium*, hairy tare *Vicia hirsuta*, lesser hop trefoil, field speedwell *Veronica arvensis*, charlock *Sinapis arvensis* and common poppy *Papaver rhoeas* with rare thyme-leaved speedwell *Veronica serpyllifolia*, brooklime *Veronica beccabunga*, foxglove, annual pearlwort *Sagina apetala*, slender St John's wort *Hypericum pulchrum*, greater plantain *Plantago major*, butterfly bush and narrow-leaved bird's-foot trefoil *Lotus glaber*.

Photo 5: Vegetated rubble pile within the centre of the site, looking south



Photo 6: Northern aspect of the rubble pile within the centre of the site, looking east



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| Table 5: Habitats Recorded on Site              |                                                                       |                                                                                                                  |                                                                               |                                                                 |
|-------------------------------------------------|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-----------------------------------------------------------------|
| Phase 1 Habitat                                 | UK Habs Habitat                                                       | Description                                                                                                      | Ecological Value                                                              | Development Impacts                                             |
| Dense Scrub (A2.1)                              | Dense Scrub (H3);                                                     | Along the eastern and southern boundaries of the site.                                                           | Site value                                                                    | This habitat is likely to be retained as part of the proposals. |
| Broadleaved woodland (A1.1.1)                   | Lowland broadleaved woodland (Wdf)                                    | A small area of immature broadleaved woodland is present along the southern boundary of the site.                | Section 7 habitat<br><br>Local importance<br><br>UK Habs high distinctiveness | This habitat is likely to be retained as part of the proposals. |
| Ephemeral and Short Perennial Vegetation (J1.3) | Sparsely vegetated land (S);                                          | The areas of hardstanding and rubble throughout the site are vegetated with ephemeral and short perennial.       | Site value                                                                    | This habitat is likely to be removed as part of the proposals.  |
| Hard Standing <sup>13</sup>                     | Urban - Developed land; sealed surface (u1b) secondary codes: 89, 111 | This habitat conforms to Urban; developed land, sealed surface with very low distinctiveness within the UK habs. | Negligible value.<br><br>UK Habs very low distinctiveness.                    | This habitat is likely to be removed as part of the proposals.  |

## 3.5. Invasive Plant Species

Details of the invasive species on site are described in detail below:

Table 6: Invasive Species on Site

| Species  | Occurrence on Site                                                          | Legislation                                                                                                                                                                                                                                                                              | Assessment of Potential Development Impacts                                                                                                                                                                                                    |
|----------|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Buddleia | Along the southern boundary (TN01) and within the centre of the site (TN03) | Whilst this species is not listed as a Schedule 9 invasive species, it is a non-native species that poses a conservation threat to native biodiversity and habitats, such that further releases should be regulated. This species has a negative effect on the biodiversity of the site. | The proposed development could potentially result in the spread of buddleia, an invasive ornamental species. Current guidelines from the Non-Native Species Secretariat should be followed when removing this plant, as outlined in Section 4. |

Photo 7: Buddleja along the southern boundary of the site (TN01)



## 3.6. Assessment of Ecological Value of Off-site Habitats

### Survey Results

The Cwm Glo a Glyndyrys SSSI and SINC lies approximately 200m south of the site boundary which comprises 181ha of extensive areas of marshy grassland, species-rich neutral grassland and acid grassland, and for the association of these habitats with others including woodland and heath. The site is also of special interest for its outstandingly diverse assemblage of grassland fungi, including 32 species of waxcap *Hygrocybe* spp, making it one of the best sites in Britain.

### Assessment of Development Impacts

Due to the distance between the site and the SSSI no direct impacts are anticipated however there is potential for the proposals to have negative indirect impacts through air pollution, noise and hydrological impacts during the construction and operational phases of the development if appropriate pollution

prevention and mitigation measures are not implemented. Detailed recommendations are provided in Section 4.

## 3.7. Protected and Notable Species

### 3.7.1. Notable Plant Species

#### Data Trawl Results

SEWBRc returned records of 39 rare and/or 'notable' plants (including species regarded as 'Locally Important', LBAP species and UK Red Data Book-listed species).

Five priority plant species were recorded within 1km of the site, namely: bluebell (*Hyacinthoides non-scripta*), stag's-horn clubmoss (*Lycopodium clavatum*), english sticky eyebright (*Euphrasia officinalis* subsp. *anglica*), large-flowered sticky eyebright (*Euphrasia officinalis* subsp. *pratensis*) and lesser butterfly-orchid (*Platanthera bifolia*).

However, bluebell is mainly protected from sale via its listing under Schedule 8 of the Wildlife and Countryside Act.

Five species of conservation concern were recorded within 1km of the site, namely: welsh poppy (*Meconopsis cambrica*), rock stonecrop (*Sedum forsterianum*), annual beard-grass (*Polypogon monspeliensis*), soft-leaved sedge (*Carex montana*), and limestone fern (*Gymnocarpium robertianum*).

29 species of local importance were recorded within 1km of the site, namely: greater knapweed (*Centaurea scabiosa*), viper's-bugloss (*Echium vulgare*), common rock-rose (*Helianthemum nummularium*), bee orchid (*Ophrys apifera*), green field-speedwell (*Veronica agrestis*), lamiastrum galeobdolon subsp. *montanum* (*Lamiastrum galeobdolon* subsp. *montanum*), alternate water-milfoil (*Myriophyllum alterniflorum*), small pondweed (*Potamogeton berchtoldii*), bird cherry (*Prunus padus*), water avens (*Geum rivale*), common butterwort (*Pinguicula vulgaris*), upright brome (*Bromopsis erecta*), smooth brome (*Bromus racemosus*), greater pond-sedge (*Carex riparia*), whorl-grass (*Catabrosa aquatica*), hieracium umbellatum subsp. *umbellatum* (*Hieracium umbellatum* subsp. *umbellatum*), pink water-speedwell (*Veronica catenata*), long-stalked yellow-sedge (*Carex viridula* subsp. *brachyrrhyncha*), thyme-leaved sandwort (*Arenaria serpyllifolia* subsp. *serpyllifolia*), small cudweed (*Filago minima*), grass vetchling (*Lathyrus nissolia*), intermediate lady's-mantle (*Alchemilla xanthochlora*), sweet-briar (*Rosa rubiginosa*), moonwort (*Botrychium lunaria*), dwarf thistle (*Cirsium acaule*), limestone bedstraw (*Galium sternerii*), yellow water-lily (*Nuphar lutea*), wintergreen (*Pyrola rotundifolia*), and dwarf elder (*Sambucus ebulus*).

#### Field Survey Results

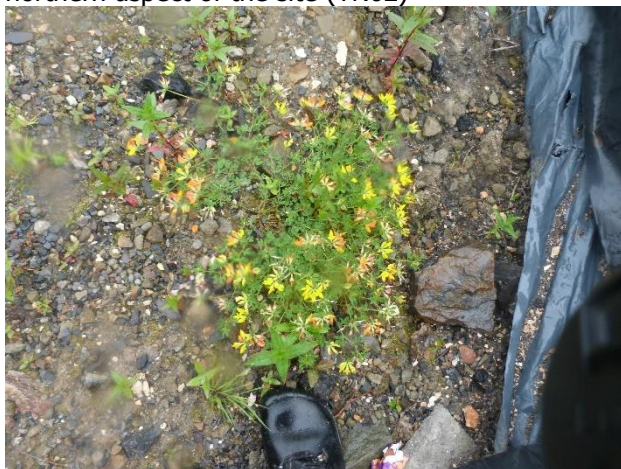
Narrow-leaved bird's-foot trefoil was recorded from the western aspect of the site (TN02) which is listed as 'Near threatened' on the vascular plant red data list for Wales<sup>21</sup>. However, it is often included as 'bird's-foot trefoil' or mis-named as *L. corniculatus* in species mixes on restoration schemes. The Colliers Row site is

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<sup>21</sup> <https://www.biodiversitywales.org.uk/File/119/en-GB>

on recontoured and seeded colliery spoil which is likely to have been sown with the reclamation seed mix used at the site so it cannot be regarded to be of conservation concern.

Photo 8: Narrow-leaved bird's-foot trefoil along the northern aspect of the site (TN02)



### 3.7.2. Birds

#### Desk Study Results

SEWBRc returned records of 33 priority bird species within 1km of the site, namely: skylark (*Alauda arvensis*), kingfisher (*Alcedo atthis*), tree pipit (*Anthus trivialis*), goldeneye (*Bucephala clangula*), black-headed gull (*Chroicocephalus ridibundus*), cuckoo (*Cuculus canorus*), reed bunting (*Emberiza schoeniclus*), peregrine (*Falco peregrinus*), hobby (*Falco subbuteo*), kestrel (*Falco tinnunculus*), pied flycatcher (*Ficedula hypoleuca*), brambling (*Fringilla montifringilla*), herring gull (*Larus argentatus*), linnet (*Linaria cannabina*), grasshopper warbler (*Locustella naevia*), red kite (*Milvus milvus*), house sparrow (*Passer domesticus*), marsh tit (*Poecile palustris*), dunnoek (*Prunella modularis*), bullfinch (*Pyrrhula pyrrhula*), starling (*Sturnus vulgaris*), green sandpiper (*Tringa ochropus*), redwing (*Turdus iliacus*), song thrush (*Turdus philomelos*), fieldfare (*Turdus pilaris*), barn owl (*Tyto alba*), lesser redpoll (*Acanthis cabaret*), nightjar (*Caprimulgus europaeus*), wood warbler (*Phylloscopus sibilatrix*), lesser spotted woodpecker (*Dryobates minor*), merlin (*Falco columbarius*), crossbill (*Loxia curvirostra*), and corncrake (*Crex crex*).

33 birds listed as species of conservation concern were recorded within 1km of the site, namely: skylark (*Alauda arvensis*), kingfisher (*Alcedo atthis*), tree pipit (*Anthus trivialis*), goldeneye (*Bucephala clangula*), black-headed gull (*Chroicocephalus ridibundus*), cuckoo (*Cuculus canorus*), reed bunting (*Emberiza schoeniclus*), peregrine (*Falco peregrinus*), hobby (*Falco subbuteo*), kestrel (*Falco tinnunculus*), pied flycatcher (*Ficedula hypoleuca*), brambling (*Fringilla montifringilla*), herring gull (*Larus argentatus*), linnet (*Linaria cannabina*), grasshopper warbler (*Locustella naevia*), red kite (*Milvus milvus*), house sparrow (*Passer domesticus*), marsh tit (*Poecile palustris*), dunnoek (*Prunella modularis*), bullfinch (*Pyrrhula pyrrhula*), starling (*Sturnus vulgaris*), green sandpiper (*Tringa ochropus*), redwing (*Turdus iliacus*), song thrush (*Turdus philomelos*), fieldfare (*Turdus pilaris*), barn owl (*Tyto alba*), lesser redpoll (*Acanthis cabaret*), nightjar (*Caprimulgus europaeus*), wood warbler (*Phylloscopus sibilatrix*), lesser spotted

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woodpecker (*Dryobates minor*), merlin (*Falco columbarius*), crossbill (*Loxia curvirostra*), and corncrake (*Crex crex*). jackdaw (*Coloeus monedula*), wren (*Troglodytes troglodytes*), and british dipper (*Cinclus cinclus gularis*).

Two birds listed as other bird species (i.e. invasive species) were recorded within 1km of the site, namely: Canada goose (*Branta canadensis*) and Egyptian goose (*Alopochen aegyptiaca*).

## Field Survey Results and Evaluation of Ecological Value of Site for Birds

A low number of birds were recorded on site, including: blackbird (*Turdus merula*), blue tit (*Parus caeruleus*), great tit (*Parus major*) and wood pigeon (*Columba palumbus*).

A majority of the site provides negligible potential to support nesting birds including the areas of hardstanding and rubble pile. The site was cleared prior to the ecological survey and forms part of an active construction site. The dense scrub on the southern boundary and the off-site immature broadleaved woodland provide suitable habitat to support nesting birds however this is likely to be retained as part of the proposals. The bramble scrub along the eastern aspect was scattered and relatively isolated within the site boundary with low potential to support nesting birds.

## Impact Assessment of Proposed Development on Birds

The following direct impacts to nesting birds may occur as a result of the development:

- Small areas of dense bramble scrub along the southern aspect and scattered bramble scrub within the eastern aspect may be removed to facilitate the development.
- Death or injury to adults or destruction of nests during vegetation clearance of the bramble scrub. However, such impacts can be avoided either via the retention of the habitat, or by timing works so that they occur outside of the nesting bird season (September to February inclusive), and by adopting sensitive working practices as detailed in Section 4; and
- Permanent nesting habitat loss at a small-scale.

The following indirect impacts to nesting birds may occur as a result of the development:

- Habitat degradation; and
- Increases in disturbance levels.

### **3.7.3. Bats**

#### Desk Study Results

SEWBRc returned three records of bat roosts within 1km:

| Species                                                 | Total Number of Records | Distance to Nearest Record | Most Recent Record | Maximum Count |
|---------------------------------------------------------|-------------------------|----------------------------|--------------------|---------------|
| Common pipistrelle ( <i>Pipistrellus pipistrellus</i> ) | Two                     | 0.52km                     | 2019               | One           |
| Pipistrelle bat species                                 | One                     | 0.93km                     | 2003               | One           |

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|                             |  |  |  |  |
|-----------------------------|--|--|--|--|
| ( <i>Pipistrellus sp.</i> ) |  |  |  |  |
|-----------------------------|--|--|--|--|

SEWBRc also returned records of bats foraging or commuting within 1km of the site. These included: common pipistrelle (*Pipistrellus pipistrellus*), unidentified pipistrelle (*Pipistrellus sp.*), brown long-eared (*Plecotus auritus*), soprano pipistrelle (*Pipistrellus pygmaeus*), lesser horseshoe (*Rhinolophus hipposideros*), greater horseshoe (*Rhinolophus ferrumequinum*), and unidentified myotis (*Myotis sp.*).

## Field Survey Results and Evaluation of Ecological Value of Site for Bats

### **Trees**

All of the trees within the survey area were assessed for their suitability to support roosting bats. The majority of scattered trees were immature in age with no PRFs present.

### **Foraging and Commuting Habitat**

A majority of the habitats comprise negligible potential to support foraging and commuting bats including the areas of cleared land and rubble pile. The immature broadleaved woodland along the southern boundary of the site provides higher potential to support foraging and commuting bats. Additionally, this habitat provides good connectivity between the site and the Cwm Glo a Glyndyrys SSSI which lies 200m south of the site boundary. Overall, the site provides low quality foraging and commuting habitat for bats due to the lack of suitable habitat features on site.

## Impact Assessment of Proposed Development on Bats

The following indirect impacts to bats may occur as a result of the development:

- Due to the change of use of the site, increases in artificial lighting levels will be significant, both during the construction phase and the operational phase of the development. If this lighting envelops the retained immature broadleaved woodland, it could adversely affect foraging and commuting bats.

### **3.7.4. Dormice**

#### Desk Study Results

SEWBRc returned no records of dormice within 1km of the site.

## Field Survey Results Evaluation of Ecological Value of Site for Dormice

A majority of the habitats comprise negligible potential to support dormice including the areas of cleared land and rubble pile. The immature broadleaved woodland along the southern boundary of the site provides higher potential to support dormice however it comprises species which are not core species associated with dormice including goat willow and Italian alder. Hazel is present within the woodland adjacent to the southern boundary and within the wider site however this will be retained as part of the proposals. Overall,

the site provides negligible quality habitat for dormice due to the lack of suitable habitat on site. Additionally, no records of dormice were returned within 2km of the site boundary.

## Impact Assessment of Proposed Development on Dormice

The likelihood of dormice being present on site is considered to be negligible and no adverse impacts are subsequently anticipated. They are therefore not mentioned further in this report.

### **3.7.5. Great Crested Newt**

#### Desk Study Results

SEWBRc returned one record of GCN within 1km of the site, recorded in 2005, 0.9km south-west of the site. There are records of other amphibians, comprising two records of common frog (*Rana temporaria*) and one palmate newt (*Lissotriton helveticus*).

#### Field Survey Results

#### ***Aquatic Habitat***

One pond is present within 500m which lies 334m south-west of the site boundary. All other waterbodies within 500m comprise flowing water including a network of ditches which lies approximately 85m south at the closest point. The Afon Taff lies approximately 645m east which is a major barrier to amphibian movement.

#### ***Terrestrial Habitats***

The habitats within the site boundary comprise cleared land and a rubble pile vegetated with sparse ephemeral short perennial and tall ruderal vegetation which cleared prior to the survey. There is an isolated patch of scattered bramble scrub on the eastern aspect and dense bramble scrub and immature broadleaved woodland adjacent to the southern aspect. There is an active construction site present to the western and northern aspects of the site.

#### Evaluation of Ecological Value of Site for Great Crested Newt

A majority of the habitats comprise negligible potential to support GCN including the areas of cleared land and rubble pile. The immature broadleaved woodland along the southern boundary of the site provides higher potential to support GCN however this will be retained as part of the proposals. Overall, the site provides negligible quality habitat for GCN due to the lack of suitable habitats on site.

The pond is located within the Cwm Glo a Glyndyrys SSSI which provides high suitability habitat including unmanaged grassland, scrub and broadleaved woodland, which is likely to support any population of GCN present within the waterbody.

## Impact Assessment of Proposed Development on Great Crested Newt

The likelihood of GCN being present on site is considered to be negligible and no adverse impacts are subsequently anticipated. They are therefore not mentioned further in this report.

### **3.7.6. Badgers**

#### Desk Study Results

SEWBRc returned four badger records within 1km of the site. This included an observation of a sett in 2007, 0.8km south-west from the proposed development site.

#### Field Survey Results

No setts or signs of badgers were observed on site or within 30m of the eastern or southern boundaries of the site.

#### Evaluation of Ecological Value of Site for Badgers

Although no evidence of badgers was recorded on site, there is considered to be some limited potential for them to venture onto the site from the surrounding landscape to forage sporadically.

## Impact Assessment of Proposed Development on Badgers

The likelihood of badgers sett building on site is considered to be negligible and no adverse impacts are subsequently anticipated. Likewise, there is considered to be a low risk of badgers foraging or commuting across the site. However, precautionary measures including site protocols are detailed in Section 4 below.

### **3.7.7. Reptiles**

#### Desk Study Results

SEWBRc returned two records of reptiles within 1km of the site. These included: one common lizard (*Zootoca vivipara*) and one grass snake.

#### Field Survey Results and Evaluation of Ecological Value of Site for Reptiles

The habitats within the site boundary comprise cleared land and a rubble pile vegetated with sparse ephemeral short perennial and tall ruderal vegetation which cleared prior to the survey. There is an isolated patch of scattered bramble scrub on the eastern aspect and dense bramble scrub and immature broadleaved woodland adjacent to the southern aspect. There is an active construction site present to the western and northern aspects of the site.

The immature broadleaved woodland base along the southern boundary of the site provides higher potential to support reptiles however this will be retained as part of the proposals. Overall, the site provides negligible quality habitat for reptiles including the areas of cleared land and rubble pile due to their isolation within the site boundary and the lack of suitable vegetation cover.

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## Impact Assessment of Proposed Development on Reptiles

The likelihood of reptiles being present on site is considered to be negligible and no adverse impacts are subsequently anticipated. They are therefore not mentioned further in this report.

### **3.7.8. Other Mammals**

#### Desk Study Results

SEWBRc returned eight records of other mammals within 1km of the site, comprising: seven common hedgehog (*Erinaceus europaeus*), and one weasel (*Mustela nivalis*).

#### Field Survey Results

No incidental observations of notable mammals were recorded during the survey.

#### Evaluation of Ecological Value of Site for Other Mammals

All of the habitats present within the site boundary provide suitable habitat to support hedgehogs however the small sized of the site is unlikely to support a large population.

The site has good connectivity between the residential properties on the western and northern aspects and the wider landscape.

#### Impact Assessment of Proposed Development on Other Mammals

The presence of hedgehogs on site cannot be ruled out completely. Additionally, the site forms a small part of suitable habitat for hedgehogs within the wider landscape.

The following direct impacts to other mammals may occur as a result of the development:

- Death or injury during vegetation clearance; and
- Habitat loss at a small-scale on a permanent basis

The following indirect impacts to other mammals may occur as a result of the development:

- Increases in disturbance levels.

The impact on potential hedgehog habitat on site is considered to be relatively low and permanent.

### **3.7.9. Invertebrates**

#### Desk Study Results

SEWBRc returned records of 72 notable invertebrate species from within the study area, comprising:

50 priority invertebrate species were recorded within 1km of the site, namely: grey dagger (*Acronicta psi*), knot grass (*Acronicta rumicis*), beaded chestnut (*Agrochola lychnidis*), green-brindled crescent (*Allophyes oxyacanthae*), ear moth (*Amphipoea oculea*), mouse moth (*Amphipyra tragopoginis*), dusky brocade (*Apamea remissa*), garden tiger (*Arctia caja*), small pearl-bordered fritillary (*Boloria selene*), minor

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shoulder-knot (*Brachylomia viminalis*), mottled rustic (*Caradrina morpheus*), broom moth (*Ceramica pis*), small heath (*Coenonympha pamphilus*), small blue (*Cupido minimus*), small square-spot (*Diarsia rubi*), dusky thorn (*Ennomos fuscantaria*), dingy skipper (*Erynnis tages*), autumnal rustic (*Eugnorisma glareosa*), ghost moth (*Hepialus humuli*), rustic (*Hoplodrina blanda*), rosy rustic (*Hydraecia micacea*), shoulder-striped wainscot (*Leucania comma*), rosy minor (*Litoligia literosa*), dot moth (*Melanchra persicariae*), powdered quaker (*Orthosia gracilis*), grass rivulet (*Perizoma albulata albulata*), white ermine (*Spilosoma lubricipeda*), buff ermine (*Spilosoma lutea*), feathered gothic (*Tholera decimalis*), blood-vein (*Timandra comae*), cinnabar (*Tyria jacobaeae*), brown-spot pinion (*Anchoscelis litura*), pearl-bordered fritillary (*Boloria euphrosyne*), sallow (*Cirrhia icteritia*), small phoenix (*Ecliptopera silaceata*), double dart (*Graphiphora augur*), dark brocade (*Mniotype adusta*), shaded broad-bar (*Scotopteryx chenopodiata*), hedge rustic (*Tholera cespitis*), dark-barred twin-spot carpet (*Xanthorhoe ferrugata*), flounced chestnut (*Anchoscelis helvola*), anomalous (*Stilbia anomala*), neglected rustic (*Xestia castanea*), marsh fritillary (*Euphydryas aurinia*), narrow-bordered bee hawk-moth (*Hemaris tityus*), grayling (*Hipparchia semele semele*), v-moth (*Macaria wauaria*), dark spinach (*Pelurga comitata*), argent & sable (*Rheumaptera hastata hastata*), and sword-grass (*Xylena exsoleta*).

Six invertebrate listed as species of conservation concern were recorded within 1km of the site, namely: gyrimus natator (*Gyrinus natator*), scarce grass-veneer (*Crambus pratella*), buff-tailed mining bee (*Andrena humilis*), cassida hemisphaerica (*Cassida hemisphaerica*), chaetarthria simillima (*Chaetarthria simillima*), and tanyptera atrata (*Tanyptera atrata*).

15 invertebrate listed as locally important species were recorded within 1km of the site, namely: silver-washed fritillary (*Argynnis paphia*), small garden bumble bee (*Bombus hortorum*), heath bumblebee (*Bombus jonellus*), red-tailed bumblebee (*Bombus lapidarius*), white-tailed bumblebee (*Bombus lucorum*), common carder bee (*Bombus pascuorum*), early bumblebee (*Bombus pratorum*), buff-tailed bumblebee (*Bombus terrestris*), emerald damselfly (*Lestes sponsa*), scallop shell (*Rheumaptera undulata*), golden-ringed dragonfly (*Cordulegaster boltonii*), bilberry bumblebee (*Bombus monticola*), bumblebee (*Bombus*), spike-marked drill (*Dichrorampha alpestrana*), and birch conch (*Thyralia nana*).

One invertebrates listed as other species were recorded within 1km of the site: harlequin ladybird (*Harmonia axyridis*).

## Field Survey Results and Evaluation of Ecological Value of Site for Invertebrates

No incidental observations of invertebrates were recorded during the survey. The ephemeral short perennial and tall ruderal species on the rubble pile within the centre of the site may be a nectar sources for a variety of bees and invertebrates. The areas of immature broadleaved woodland on the southern boundary are likely to be important hosts for associated invertebrate assemblages.

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## Impact Assessment of Proposed Development on Invertebrates

The invertebrates using the site for habitat are unlikely to solely rely on the site for their continued survival. While some habitat loss will occur across the site, this can be more than offset by providing a range of new habitats within the development that will benefit invertebrates, Plans for enhancement planting across the site have potential to greatly increase the floristic diversity of the site, therefore introducing more opportunity for a wider range of invertebrates to utilise the site post-development.

## 4. Required Actions and Conclusions

The following recommendations are likely to be secured through planning conditions. They have been developed based on the development proposals available at the time of writing. However, they may be subject to change upon receipt of the final design. The implementation of these recommendations will ensure compliance with the Planning Policy Wales version 12 (Welsh Government, 2024)<sup>22</sup>, TAN 5 *Nature Conservation and Planning* (2009), Section 6 and 7 of the Environment Wales Act, 2016, the Conservation of Habitats and Species Regulations 2017 which has been updated by the Conservation of Habitats and Species (Amendment) (EU Exit) [‘CHSAEU’] Regulations 2019 and the Merthyr Local Development Plan 2016 - 2031<sup>23</sup>.

The recommendations aim to avoid or minimise adverse impacts on the environment and protected species, mitigate and compensate for losses where damage is unavoidable and promote opportunities to enhance biodiversity. There is a requirement that developments must provide net benefit for biodiversity.

### 4.1. Biodiversity and Ecosystem Enhancement Scheme/Green Infrastructural Plan

Local Authorities have a duty (known as the Biodiversity and Resilience of Ecosystems Duty) under the Environment (Wales) Act 2016 to seek to maintain and enhance biodiversity in the exercise of their functions. Section 6.4.12 of Planning Policy Wales states that *‘Where biodiversity enhancement proportionate to the scale and nature of the development is not proposed as part of an application, significant weight will be given to its absence, and unless other significant material considerations indicate otherwise, it will be necessary to refuse permission’*.

Where possible the existing on-site habitat will be retained to ensure that species are not adversely affected by the development. Native species of local provenance grown in the UK will be used for any new planting on the site. A soft and hard landscaping plan will need to be provided to inform the Green Infrastructure Statement and demonstrate Net Biodiversity Benefit (NBB) and include:

- Detailed planting/sowing specifications including species, size, density spacing, cultivation protection (fencing, staking, guards) and methods of weed control;
- Details of surfacing, boundary treatments and landscaping structures including design, location, hedgehog accessibility, size, colour, materials and openings;
- Details of planting of rainwater gardens and other sustainable urban features (if proposed);
- Details of the immediate and ongoing management of the site; and
- Details of the funding mechanisms in place to plan can be successfully implemented.

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<sup>22</sup> Planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions ... and in so doing promote the resilience of ecosystems. Development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity.

<sup>23</sup> <https://www.merthyr.gov.uk/media/5642/replacement-ldp-written-statement-final-composite-version-140120.pdf>

A biodiversity and ecosystem enhancement scheme will need to be provided. This could include the incorporation of permanent bat roosting feature(s), hedgehog homes and nesting opportunities for birds. A Green Infrastructure Statement will need also to be produced for the site. This should ensure that all elements of green infrastructure are coordinated from the outset, so that biodiversity, trees, soils, landscaping, SuDS, amenity, access, recreation and climate change mitigation and adaptation are integrated into a scheme which delivers multiple benefits. Ideally the Green Infrastructure Statement should be a strategy which informs the design and layout of a scheme and details how a functionally connected habitat can be created that will increase biodiversity.

## **4.2. Precautionary Measures**

### **4.2.1. Timing of Works for Birds**

If removal of the areas of bramble scrub along the southern and eastern aspects is required to facilitate the development vegetation clearance should be carried out outside of the bird nesting season (March-September inclusive).

### **4.2.2. Badgers**

A pre-commencement badger survey should be conducted prior to works starting on site to check for badger setts which may be excavated within the site boundary prior to the development commencement.

it is recommended that during the construction phase any steep sided holes left open overnight should be equipped with a mammal ladder (a reinforced plywood board >60cm wide set at an angle of no greater than 30o to the base of the pit) to prevent entrapment.

## **4.3. Mitigation Measures**

Broad mitigation measure for the habitats present within the sit boundary are given below:

### **4.3.1. Protection and Retention of Woodland Habitats**

The immature broadleaved woodland on the southern boundary of the site will be retained and protected from the development. There is a risk that they may be subject to root damage as a result of heavy plant movement over the root protection area, or accidental damage during general construction activities. Protective barriers will therefore be installed prior to any site work, to ensure that no such inadvertent impacts occur. These will be established in line with the standard tree root protection zones which is calculated as an area equivalent to a circle with a radius 12 times the stem diameter.

The retained broadleaved woodland adjacent to the clearance areas will be protected and securely fenced-off with appropriate temporary fencing (e.g. 'Heras' fencing) and treated in accordance with British Standard BS5837 (2012) Trees in Relation to Design, Demolition and Construction – Recommendations. The fences will be erected prior to the commencement of construction work and will left in place until development completion. These protective measures will prevent any accidental damage to the woodland

and mitigate potential direct impacts to any protected or priority species that may be utilising this habitat, including bats, dormice, nesting birds, reptiles and hedgehogs. This will help to maintain the biodiversity value and ecological connectivity of the site. The fencing will be installed under supervision of an ecologist to ensure that a suitable buffer is retained around the woodland habitats.

Screening barriers should be installed to protect the retained hedgerows from dust and pollution during the construction phase of the development. The hard landscape areas and residential house should remain unlit by artificial light to mitigate the effect on nocturnal wildlife.

Suitable fencing can be found in Appendix 6.

#### **4.3.2. Buddleja Eradication Strategy**

Buddleja is present along the southern boundary and on the eastern aspect of rubble pile in the centre of the site. Buddleja will be eradicated from the site as far as possible and appropriate measures implemented to prevent the accidental spread of this species during the development. Invasive plant material is considered a 'controlled waste' and must be disposed of in accordance with, and environmental permit issued under, the Environmental Permitting (England and Wales) Regulations 2007. A dedicated invasive species management plan to eradicate this species from the site will be required from a specialist invasive species consultant.

#### **4.3.3. Construction and Environmental Management Plan (CEMP)**

Considering the potential for impacts to the Cwm Glo a Glyndyrys SSSI, it is considered that a CEMP will be required before any construction activities commence on site. The CEMP will identify the responsibilities of various organisations and people to comply with legislation and ensure that mitigation measures are implemented as proposed.

The CEMP should aim to:

- Detail management measures to minimise environmental impact from the construction phase of the development;
- Provide a framework within which the measures will be implemented throughout the project; and
- Provide project-specific management measures.

It is proposed that this document is reviewed if activities or conditions on-site change in a way which influences management measures. The document will be reviewed at set intervals and new information added as appropriate.

#### **4.3.4. Landscape and Ecological Management Plan**

During Pre-Application consultations by Pryce Consultant Ecologists, the LPA has advised that a Landscape and Ecological Management Plan (LEMP) is required in support of the detailed application for the plot which

should be read in conjunction with the Landscape Master Plan applicable to the whole development site (Pryce Consultant Ecologists, 2020).

Therefore, a Landscape and Ecological Management Plan (LEMP) should be produced as part of the planning conditions for the site detailing the methodology, environmental considerations and maintenance specifications and monitoring requirements, if needed, for the scheme. The LEMP should include a long-term management plan for the site post-development.

#### **4.3.5. Sensitive Lighting Strategy**

The lighting design for the site will be kept to the minimum level which meets the needs of security and health and safety. The unnecessary lighting of habitats which could potentially be used by bats, dormice and badgers such as nearby trees, scrub habitats etc. will be avoided.

External lighting will be minimised and installed at low-level only (i.e. no higher than eaves level and lower than 2.4m) and directed downward (i.e. below the horizontal plane with no upward tilt). Fully shielded lights with front and side hoods/shields or cowls will be installed to prevent upwards and horizontal light spill. The lighting source will not be visible.

Lighting will not be located in the vicinity of, or shine towards the trees and areas of scrub which surround the site, thus maintaining a 'dark corridor' and avoiding/minimising disturbance to commuting and foraging bats and dormice. Any security lights used will operate on a passive infrared (PIR) motion sensor sensitive to large objects only, to avoid constant triggers by bat passes and with timers set on a short duration (i.e. a maximum 'on' time of one minute) to reduce the amount of 'lit time'. The lights will either have an integrated LED light source, or use LED bulbs. They will be low intensity (i.e. circa 11 watts) and have a warm white colour temperature of 3000K or less (ideally 2700K if commercially available). White, blue and green lighting sources including mercury or metal halide, CPO and CDO (ceramic discharge metal-halide) bulbs which have significant effect on bats will be avoided. Examples of suitable light fittings are provided within Appendices 7 and 8.

#### **4.4. Enhancement Measures and Biodiversity Net Gain**

##### **4.4.1. Hedgerows and Trees**

New sections of native species hedgerow should be planted along the southern and western boundaries of the site to ensure that there is no-net loss of foraging and commuting habitat for bats in the long term and to provide a habitat corridor on the boundaries of the site. Some standard trees should be allowed to develop to provide continuous canopy cover around the site boundary to develop a more complex habitat in the long term; approximately 1 per 40m length of hedge.

The species planted should be proficient fruiting/nut bearing species which are known to benefit a range of species including dormice, birds and small mammals. The species should be native and of local provenance to provide a large species-rich diversity. Species could include, but are not limited to; hazel,

hawthorn, elder, dog rose, guelder rose, rowan, alder buckthorn, honeysuckle, and holly which are in-line with the LEMP for Plots 1-8 and Plots 9 & 10 (Pryce Consultant Ecologists, 2020 & 2023). Other species which could be planted include oak, birch and goat willow. Hedgerows should be managed in an appropriate way to optimise their biodiversity value which should be included within the LEMP for the site.

#### 4.4.2. Grassland Compensation

To compensate for the loss of the small area of ephemeral short perennial and tall ruderal vegetation within the site, which comprises flowering species which have potential to support invertebrate species, areas of grassland planting within the site could be enhanced with seed mix suitable for the local soil conditions and geology of the site.

The Landscape Master Plan (Pryce Consultant Ecologists, 2020) for the site shows small areas of wildflower rich verges along the new internal access roads, one of which will lie adjacent to the northern aspect of the site. In addition to these road verges, additional areas of wildflower grassland could be created within the design of the site. The bases of the new sections of hedgerow could be sown with a wildflower seed mix to create an 'ecotone' habitat between the hedgerow base and the edge of the development which should be a minimum of 1-2m wide.

The type of ready-made mixtures which could be used include a Welsh meadow seed mix<sup>24</sup>, which is harvested from two hay meadows in West Pembrokeshire and North Carmarthenshire to ensure local provenance, along the internal road verges and a hedgerow and light shade mix<sup>25</sup> along the hedgerow bases. These measures should be included within the LEMP for the site.

Alternatively, a seed mix could be collected from species rich areas of grassland habitats present with the Cwm Glo a Glyndyrys SSSI, which lies 200m south of the site through brush harvesting<sup>26</sup> a small amount of seed in autumn to ensure local provenance<sup>27</sup> with consent from the landowner.

#### 4.4.3. SuDS

As of 7th January 2019, all construction work in Wales with drainage implications, of 100m<sup>2</sup> or more, is required to have SuDS to manage on-site surface water (whether they require planning permission or not). These SuDS must be designed and constructed in accordance with the Welsh Government Standards for Sustainable Drainage<sup>28</sup>.

The SUDs which have been incorporated into the design for plots 1-8 comprise rain gardens which are planted depression designed to capture, infiltrate, and treat rainwater from impervious surfaces such as roofs, driveways, and roads<sup>29</sup>. The water is stored in an underground tank within each plot which flows

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<sup>24</sup> [Welsh Meadow Seed | Packets | British Wildflower Seeds | British Wildflower Meadow Seeds](#)

<sup>25</sup> <https://britishwildflowermeadowseeds.co.uk/collections/shady-sites/products/hedgerow-and-light-shade-seed-mix>

<sup>26</sup> [Brush harvesting.p65 \(cieem.net\)](#)

<sup>27</sup> [Wyndrush Wild](#)

<sup>28</sup> <https://gov.wales/sites/default/files/publications/2019-06/statutory-guidance.pdf>

<sup>29</sup> [https://greenblue.com/gb/blue/?utm\\_source=google&utm\\_medium=cpc&utm\\_campaign=suds&utm\\_content=rain\\_garden\\_suds&gad\\_source=1&gclid=Cj0KCQjw7ZO0BhDYARIsAfttkCj8htAelAoLrfFOTZIRPsOw3gXa5u2aQtcB\\_bEJGwQ0nGYPaHaMykaAvYOEALw\\_wcB](https://greenblue.com/gb/blue/?utm_source=google&utm_medium=cpc&utm_campaign=suds&utm_content=rain_garden_suds&gad_source=1&gclid=Cj0KCQjw7ZO0BhDYARIsAfttkCj8htAelAoLrfFOTZIRPsOw3gXa5u2aQtcB_bEJGwQ0nGYPaHaMykaAvYOEALw_wcB)

into the local drain network. It is recommended that Plots 9 and 10 incorporate similar SUDs to be in keeping with the masterplan for the site.

Photo 9: The attenuation within Plot 8 to the north of the site



Photo 10: The attenuation within Plot 8 to the north of the site



There is scope to incorporate ecological enhancement measures into the design of the SuDs features, without compromising their core function. The rain gardens within Plots 9 & 10 could be planted with a wet meadow seed mix<sup>30</sup> to increase the areas of species-rich grassland within the site boundary post-development.

#### 4.4.4. Hedgehogs

The development of the site will also result in the loss of potential habitat for hedgehogs. It is recommended that the landscape design for the proposed development should incorporate some compensatory habitats for foraging and resting hedgehogs and allow their unrestricted movement through residential gardens by leaving gaps at the bottom of garden fences which is in-line with the LEMP for Plots 1-8 and Plots 9 & 10 (Pryce Consultant Ecologists, 2020 & 2023).

Examples of hedgehog access routes can be found in Appendix 9.

#### 4.4.5. Reptiles

The following recommendations are in-line with the LEMP for Plots 1-8 and Plots 9 & 10 (Pryce Consultant Ecologists, 2020 & 2023):

- All drain pots will be fitted with escape ladders to ensure that any animals falling-in have a means of escape; and
- In addition to the provision of a habitat pile and hibernaculum within the south-western part of the main site, the new garden of Plots 9 & 10, once established, may also offer potential habitat but the creation and maintenance of such habitat will be at the discretion of the new owner.

#### 4.4.6. Bird Boxes

The following recommendations are in-line with the LEMP for Plots 1-8 and Plots 9 & 10 (Pryce Consultant Ecologists, 2020 & 2023):

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<sup>30</sup> <https://britishpondplants.co.uk/collections/seeds/products/wet-meadow-seed-mix>

- The new houses presents the opportunity for the installation of nest boxes to attract several species of breeding birds. In general, such features should avoid placement in south-facing situations, preference being given to west- and north-facing aspects and may be of varying types including those located in internal cavities formed in walls and/or soffits, as well as suitably designed boxes attached to walls. House Sparrow and Starling are section 7 Species of Importance for Conservation of Biological Diversity and frequently nest in association with human habitation in the urban and suburban environment. Other species that are often also associated with the urban environment include Blue Tit, Great Tit, Robin, Pied Wagtail, Swift and House Martin. All of these species can be attracted to nest in or around houses and gardens and there are many different designs of artificial nest box available to attract the various species;
- It is recommended that one sparrow terrace and three tit boxes are attached to the north-west and south-west elevations of the new dwellings; and
- Swifts have declined in numbers considerably in recent years resulting from the loss of traditional nest sites in old buildings due to their demolition or renovation. It is recommended that two banks, each of three artificial Swift cavity boxes are affixed on the north-west-facing elevation of the new house where the required 5m minimum clear drop is available below them.

Suitable nest boxes can be found in Appendices 10 – 12.

#### **4.4.7. Bat Boxes**

Two integrated Woodstone bat tubes and/or soffit boxes will be integrated into the design of the new buildings within the gable ends or the corners of the soffits to provide a net gain to bats post development however this is based on consent from the new owners. Alternatively, two externally mounted Woodcrete bat boxes could be installed on the new buildings or retained trees within the broadleaved woodland on the southern boundary however the trees are largely immature therefore they may not be suitable to support bat boxes.

Suitable bat boxes can be found in Appendix 13.

#### **4.5. Longevity of Report**

If development works do not begin within eighteen months to two years of the date of this report, an update survey is likely to be required in accordance with guidance from NRW<sup>31</sup> and BS 42020:2013<sup>32</sup>, to determine if conditions have changed since those described in this report.

#### **4.6. Conclusions**

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<sup>31</sup> As set out in Point 5 of the NRW *Bat Surveys - Frequently Asked Questions* and Point 4 of the guidance included within the NRW European Protected Species Development Application Form.

<sup>32</sup> As set out in Section 6.2.1, point 7 which states that ecological information should not normally be more than two/three years old, or as stipulated in good practice guidance).

# Acer Ecology

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Provided the measures detailed in Section 4 are implemented, the development is not anticipated to result in adverse impacts to any protected sites, habitats or species.

The site's ecological will not present a fundamental constraint to the proposed development, although the measures outlined above will be required.

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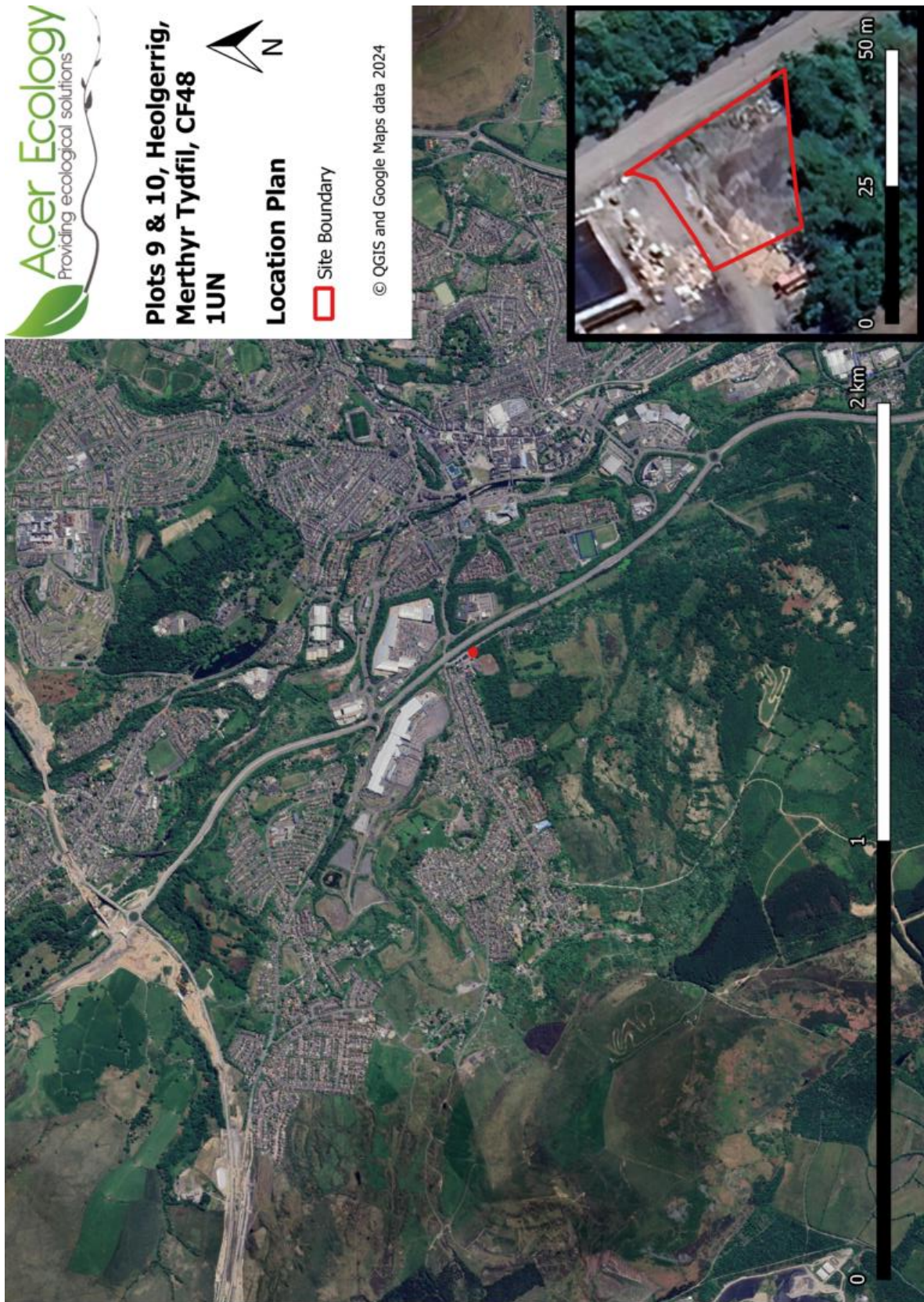
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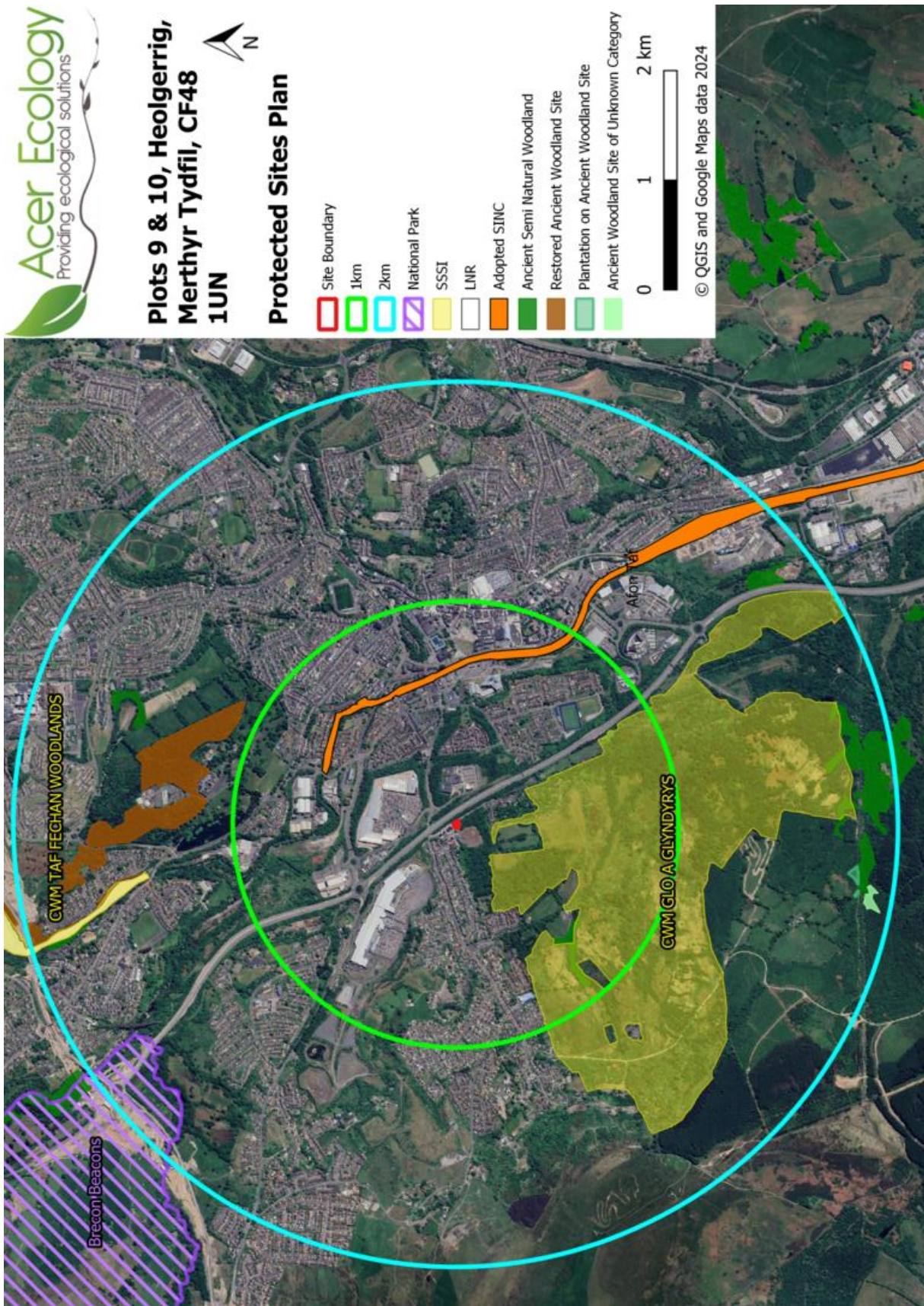
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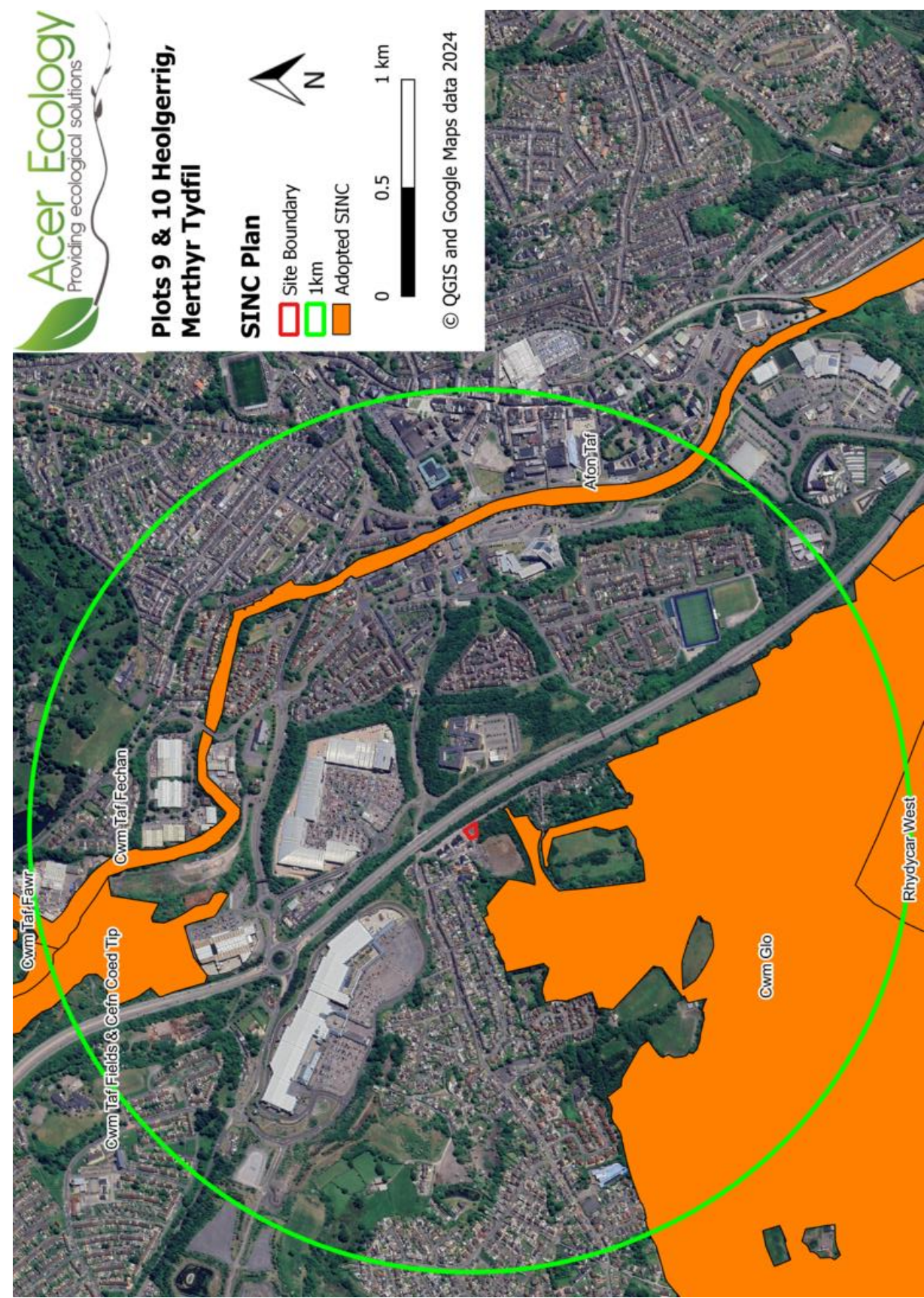
## Plan 1: Site Location



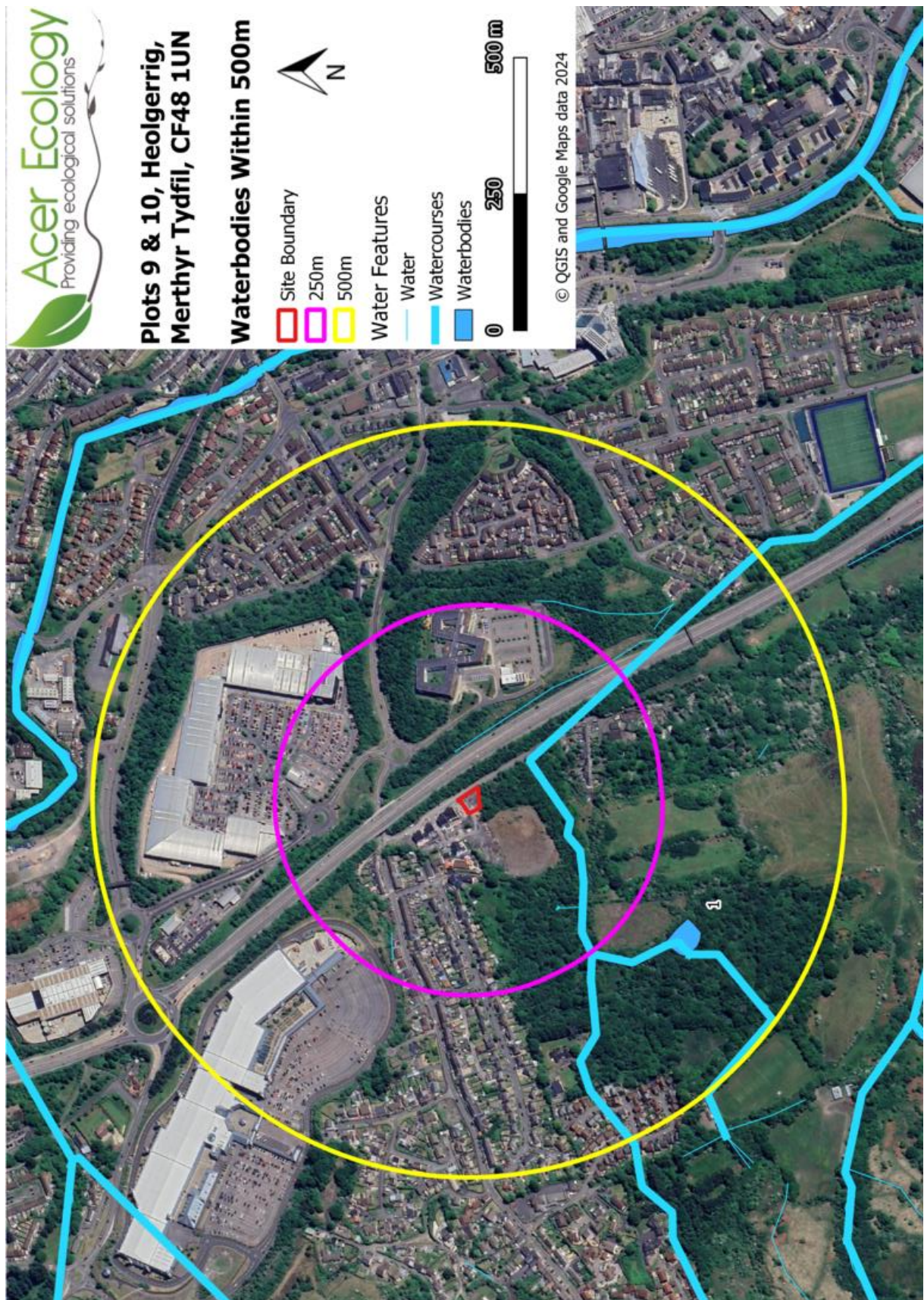
Plan 2: Site Location and Protected Sites Within 2km



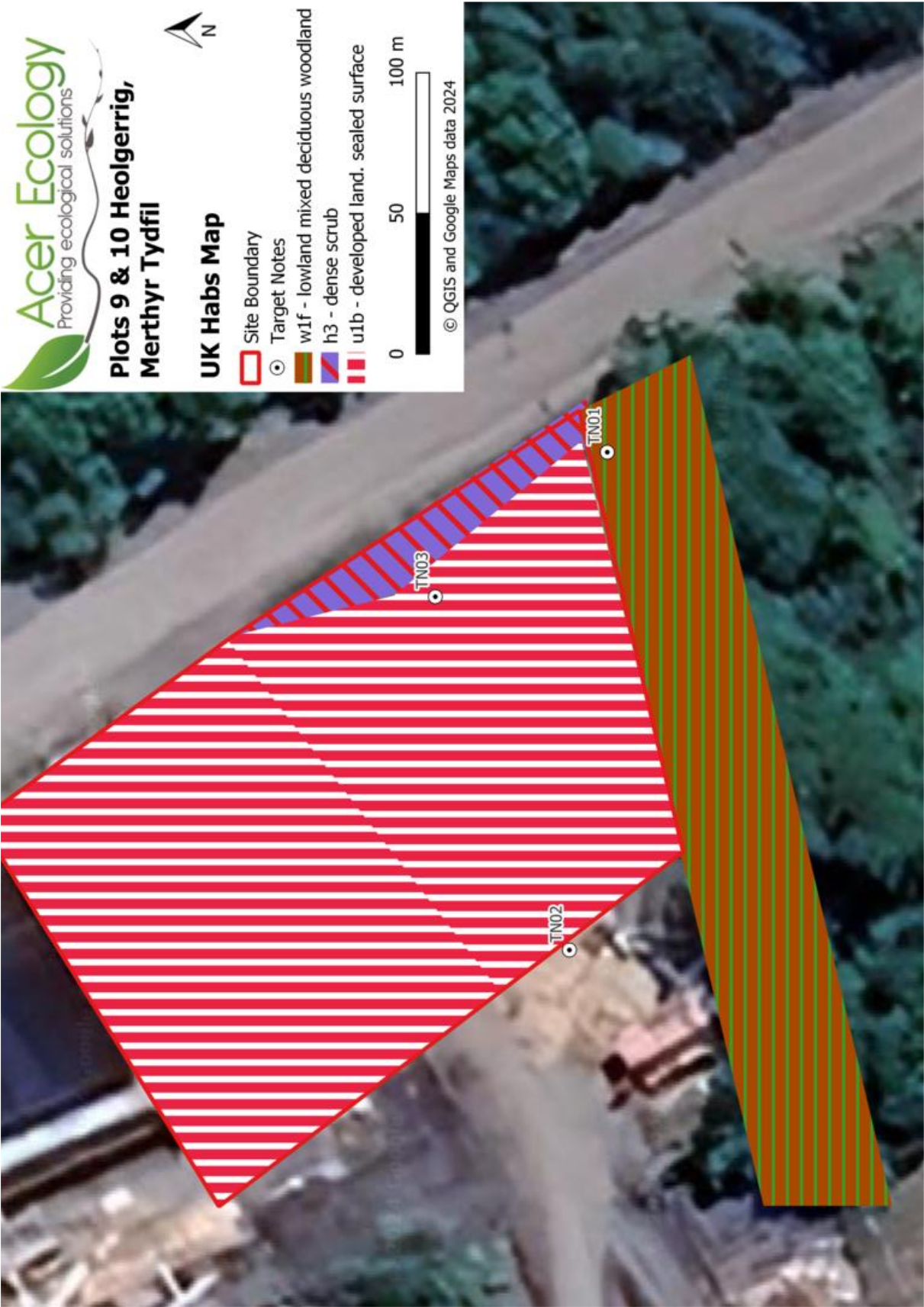
Plan 3: Site Location and SINCs Within 1km



## Plan 4: Location of Water Bodies Within 0.5km



Plan 5: Habitats and Vegetation



## **Appendix 1: Legislation and Policy Relating to Statutory and Non-Statutory Designated Sites and Planning Policy Relevant to Site**

### **SSSIs**

SSSIs are important as they support habitats and/or species of national importance. SSSIs are legally protected under the Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act 2000 and the Natural Environment and Rural Communities Act 2006, and are of national (second tier) biodiversity significance and form the essential building blocks of the United Kingdom's protected areas for nature conservation. Many are also designated as Natura sites i.e. internationally (first tier) designated sites. It is an offence for any person to intentionally or recklessly damage the protected natural features of a SSSI.

### **LNRs**

Under the National Parks and Access to the Countryside Act 1949, LNRs may be declared by local authorities after consultation with the relevant statutory nature conservation agency. LNRs are declared and managed for nature conservation, and provide opportunities for research and education, or simply enjoying and having contact with nature. LNRs must be controlled by the local authority through ownership, lease or agreement with the owner.

### **National Parks**

National Parks are designated for their aesthetic and recreational value as opposed to wildlife value, however, they often contain habitats of high ecological value also.

### **SINCs**

SINCs are a class of nature conservation designations collectively referred to as 'Wildlife Sites'. Wildlife Sites are so-called 'third tier' sites, generally ranked below sites which are of international (first tier) or national (second tier) biodiversity significance, but which are considered to have '*substantive nature conservation value*' at the regional or district level. They are usually designated at the county or county borough level by the relevant local planning authority, and are recognised as a planning constraint in the relevant statutory development plan.

The framework for the identification and designation of 'Wildlife Sites' is set out in various Government documents, and is referred to in *Planning Policy Wales (2024)* and *Technical Advice Note (Wales) 5: Nature Conservation & Planning*. Defra published *Local Sites: Guidance on their identification, selection and management in 2006*<sup>33</sup>.

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<sup>33</sup>

<https://webarchive.nationalarchives.gov.uk/ukgwa/20111108175609/http://archive.defra.gov.uk/rural/documents/protected/localsites.pdf>

## **Environment (Wales) Act 2016**

The Environment (Wales) Act Section 6 duty, or the Biodiversity Duty, requires public authorities to seek to maintain and enhance biodiversity and in so doing promote the resilience of ecosystems. In fulfilling this duty, planning authorities must have regard to the list of habitats and species of principal importance for Wales, published under Section 7 of the Environment (Wales) Act 2016.

The Section 6 duty requires that developments should not be permitted which result in net loss of value to biodiversity, and must seek to achieve biodiversity net gain. Where net loss cannot be achieved through avoidance or mitigation, compensation is required.

## **Future Wales - the National Plan 2040**

Future Wales is the national development framework, setting the direction for development in Wales to 2040. It is a development plan with a strategy for addressing key national priorities through the planning system, including sustaining and developing a vibrant economy, achieving decarbonisation and climate-resilience, developing strong ecosystems and improving the health and well-being of our communities. Future Wales - the national plan 2040 is the national development framework and it is the highest tier plan, setting the direction for development in Wales to 2040. It is a framework which will be built on by Strategic Development Plans at a regional level and Local Development Plans. Planning decisions at every level of the planning system in Wales must be taken in accordance with the development plan as a whole.

## **Planning Policy Wales (2024)**

The primary objective of PPW is to ensure the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales, as required by the Planning (Wales) Act 2015, the Well-being of Future Generations (Wales) Act 2015 and other key legislation.

Planning Policy Wales (PPW) Edition 12 (Welsh Government, 2024) states that planning authorities must follow a stepwise approach to maintain and enhance biodiversity and build resilient ecological networks by ensuring that any adverse environmental effects are firstly avoided, then minimized, mitigated, and as a last resort compensated for; enhancement must be secured wherever possible. The first priority for planning authorities is to avoid damage to biodiversity and ecosystem functioning. Where there may be harmful environmental effects, planning authorities will need to be satisfied that any reasonable alternative sites that would result in less harm, no harm or gain have been fully considered.

On 11<sup>th</sup> October 2023 Julie James MS Minister for Climate Change finalised policy for inclusion in the next iteration of Planning Policy Wales (version 12)<sup>34</sup>. The new chapter 6 came into force with immediate effect. This was followed by the publication of version 12 of Planning Policy Wales in February 2024. The main changes to policy can be summarised as follows:

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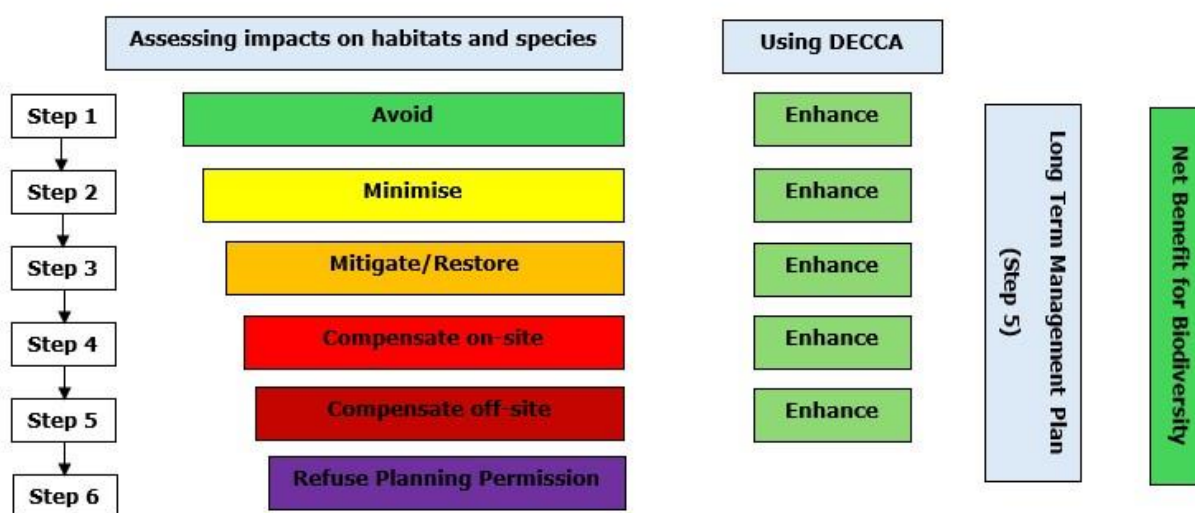
<sup>34</sup> <https://www.gov.wales/sites/default/files/publications/2023-10/annex-addressing-the-nature-emergency-through-the-planning-system.pdf>

# Acer Ecology

**Green Infrastructure:** stronger emphasis on taking a proactive approach to green infrastructure covering cross boundary considerations, identifying key outputs of green infrastructure assessments, the submission of proportionate green infrastructure statements with planning applications and signposting Building with Nature standards.

**Net Benefit for Biodiversity and the Step-wise Approach:** further clarity is provided on securing net benefit for biodiversity through the application of the step-wise approach, including the acknowledgement of off-site compensation measures as a last resort, and, the need to consider enhancement and long-term management at each step.

The use of the green infrastructure statement as a means of demonstrating the stepwise approach is made explicit. The importance of strategic collaboration to identify and capture larger scale opportunities for securing a net benefit for biodiversity is recognised.



**Trees and Woodlands:** closer alignment with the stepwise approach, along with promoting new planting as part of development based on securing the right tree in the right place.

## Technical Advice Notes

Planning Policy Wales is supported by a series of more detailed Technical Advice Notes (TANs), of which TAN 5: Nature Conservation and Planning (2009)<sup>35</sup> is of relevance.

## Merthyr Tydfil Local Development Plan

The Merthyr Tydfil Replacement Local Development Plan 2016-2031<sup>36</sup> which was adopted in January 2020, sets out Merthyr Tydfil Councils policies and proposals to guide all development in the area. The following policies are of note regarding ecological issues and safeguarding biodiversity:

<sup>35</sup> <https://www.gov.wales/sites/default/files/publications/2018-09/tan5-nature-conservation.pdf>

<sup>36</sup> <https://www.merthyr.gov.uk/media/5642/replacement-ldp-written-statement-final-composite-version-140120.pdf>

- Policy EnW1 Nature Conservation and Ecosystem Resilience;
- Policy EnW2 Internationally and Nationally Protected Sites and Species;
- Policy EnW3 Regionally Important Geological Sites, Sites of Importance for Nature Conservation, Local Nature Reserves and Priority Habitats and Species;
- Policy EnW4 Environmental Protection; and
- Policy EnW5 Landscape Protection.

In Merthyr Tydfil County Borough, SINC's are also afforded protection under Policy EnW3: Regionally Important Geological Sites, Sites of Importance for Nature Conservation, Local Nature Reserves and Priority Habitats and Species of the Merthyr Tydfil Local Development Plan (Merthyr Tydfil County Borough Council, 2020). They also get a degree of protection from Policy 1 EnW1: Nature Conservation and Ecosystem Resilience and Policy EnW4: Environmental Protection.

Policy EnW3 states that *'development proposals likely to have an adverse impact on Regionally Important Geological Sites, Sites of Importance for Nature Conservation, Local Nature Reserves, or Priority Habitats and Species will only be permitted where it can be demonstrated that:*

- 1. The need for the development clearly outweighs the conservation value of the site;*
- 2. Adverse impacts on nature conservation features or geological features can be avoided;*
- 3. Appropriate and proportionate mitigation and compensation measures can be provided; and*
- 4. The development maintains and where possible enhances biodiversity and geodiversity interests.'*(pg.64)

Using published scientific criteria, Sites of Importance for Nature Conservation have been designated as shown on the LDP Proposals Map.

Development which is likely to have an adverse impact on SINC's, RIGS, LNRs or Priority Habitats and Species will be required to demonstrate that every effort has been made to avoid and mitigate any adverse impacts and that the need for the development outweighs the nature conservation or geological value. Where on site mitigation is not possible off-site compensation will be secured through planning conditions or Section 106 agreements as appropriate.

Biodiversity and/or geodiversity enhancement and the promotion of ecosystem resilience will be sought through the consideration of development proposals. Development proposals should therefore demonstrate how biodiversity and/or geodiversity interests will be maintained and where possible enhanced. Levels of mitigation and compensation should be appropriate and proportionate with the level of adverse impact and the scale of development.

Together with open space and good design, contributing to high quality landscaping, sustainable drainage solutions (SUDs), SSSIs, SINC's, RIGSs and Local Nature Reserves (LNRs) provide the foundation for ecosystem connectivity. In addition to considering these designations, development proposals will be

expected to demonstrate how green infrastructure more broadly has been considered, including the incorporation of existing and provision of new features, in accordance with Policy SW11: Sustainable Design and Placemaking.

## **Biodiversity Net Benefit**

Planning Policy Wales (PPW) 12 states that “*planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. This means that development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity*” (NBB) (para 6.4.5 refers). This policy and subsequent policies in Chapter 6 of PPW 11 respond to the Section 6 Duty of the Environment (Wales) Act 2016.

**DECCA** is the framework that Natural Resources Wales (NRW) has developed for evaluating ecosystem resilience to demonstrate a net benefit for biodiversity (NBB)<sup>37</sup>. This is based on the following attributes:

- Diversity, extent, condition and connectivity;
- Adaptability, recovery and resistance; and
- Aspects of ecosystem resilience.

To comply with these requirements the main ecosystems on site and within the zone of influence need to be identified and set out how the diversity, extent, connectivity and condition of those ecosystems will be maintained and enhanced post-development. Recent changes to Planning Policy Wales<sup>38</sup> mean that some additional guidance will be required.

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<sup>37</sup> <https://cdn.cyfoethnaturiol.cymru/media/693356/resilient-ecological-networks-practitioner-guide.pdf?mode=pad&rnd=132612537900000000>

<sup>38</sup> <https://www.gov.wales/addressing-nature-emergency-through-planning-system-update-chapter-6-planning-policy-wales>

## Appendix 2: Protected and Invasive Species Legislation Relevant to Site

### Birds

All wild British birds (while nesting, building nests and sitting on eggs), their nests and eggs (with certain limited exceptions) are protected by law under Section 1 of the Wildlife and Countryside Act 1981 (as amended) and the Countryside and Rights of Way Act 2000. Included in this protection are all nests (at whatever stage of construction or use) and all dependent young until the nest is abandoned and the young have fledged and become independent. Particularly rare species such as barn owl (*Tyto alba*) are listed on Schedule 1 which gives them additional protection from disturbance whilst nest building, whilst near a nest with eggs or young, or from disturbing the dependent young.

Section 10.8 of the Conservation of Habitats and Species Regulations 2017 state that Local authorities must use all reasonable endeavours to avoid any deterioration of habitats of wild birds.

### Bats

All species of bats and their roosting sites are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 which continues to apply in UK law through the Conservation of Habitats and Species (Amendment) (EU Exit) [‘CHSAEU’] Regulations 2019.

All species of UK bats are designated as ‘European protected species’. Seven species of bat (soprano pipistrelle (*Pipistrellus pygmaeus*), barbastelle (*Barbastella barbastellus*), Bechstein’s (*Myotis bechsteinii*), noctule (*Nyctalus noctula*), brown long-eared (*Plecotus auritus*), lesser horseshoe (*Rhinolophus hipposideros*) and greater horseshoe bats (*Rhinolophus ferrumequinum*)) are listed under Section 7 of the Environment (Wales) Act 2016 as being of principal importance for maintaining and enhancing biodiversity in Wales.

### Dormice

Dormice are a ‘European protected species’ and afforded full protection under UK legislation. Dormice are listed under section 7 of the Environment (Wales) Act 2016 as being of principal importance for maintaining and enhancing biodiversity in Wales. Since 2000, the UK population has declined by over a half (51%), decreasing on average by 3.8% per year (PTES, 2019).

### Badgers

Badgers are protected under the Protection of Badgers Act 1992. Protection applies both to the animal itself and to its nesting burrows (setts), and current interpretation of the Act also confers some protection to key foraging areas.

### Reptiles

With the exception of smooth snake (*Coronella austriaca*) and sand lizard (*Lacerta agilis*) (which are afforded greater protection), common reptiles are protected under Schedule 5 of the Wildlife and

Countryside Act 1981 (as amended). They are given so-called 'partial protection', which prohibits the deliberate killing or injury of individuals. The habitats of common reptiles are not specifically protected. These species are listed as priority species in Wales under Section 7 of the Environment (Wales) Act 2016.

## Hedgehogs

Hedgehogs are listed as a Red List mammal species in Britain and are protected under Schedule 6 of the Wildlife and Countryside Act (1981). They are "protected from being killed or taken by certain methods under Section 11(1) of the Wildlife and Countryside Act 1981. The methods listed are: self-locking snares, bows, crossbows, explosives (other than ammunition for a firearm), or live decoys. The species listed are also protected from the following activities: trap, snare or net, electrical device for killing or stunning, poisonous, poisoned or stupefying substances or any other gas or smoke, automatic or semi-automatic weapon, device for illuminating a target or sighting device for night shooting, artificial light, mirror or other dazzling device, sound recording, and mechanically propelled vehicle in immediate pursuit. They are also listed as priority species under Section 7 of the Environment (Wales) Act 2016.

The legislation afforded to hedgehogs in Section 7 of the Environment (Wales) Act 2016 means that every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity<sup>39</sup>. In effect, 'conserving biodiversity' includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat.

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<sup>39</sup> Biodiversity conservation in respect to hedgehogs is interpreted as a commitment to restoring or enhancing their population.

## Appendix 3: Definitions of Site Value

### International Value

Internationally designated or proposed sites such as Ramsar Sites, Special Protection Areas, Biosphere Reserves and Special Areas of Conservation, or non-designated sites meeting criteria for international designation. Sites supporting populations of internationally important species or habitats.

### National Value

Nationally designated sites such as Sites of Special Scientific Interest (SSSIs), or non-designated sites meeting SSSI selection criteria (NCC 1989), National Nature Reserves (NNRs) or Nature Conservancy Review (NCR) Grade 1 sites, viable areas of key habitats within the UK Biodiversity Action Plan. Sites supporting viable breeding populations of Red Data Book (RDB) species (excluding scarce species), or supplying critical elements of their habitat requirements.

### Regional Value

Sites containing viable areas of threatened habitats listed in a regional Biodiversity Action Plan, comfortably exceeding Site of Importance for Nature Conservation (SINC) criteria, but not meeting SSSI selection criteria. Sites supporting regionally significant areas of BAP habitats or large and viable populations Nationally Scarce species, or those included in the Regional Biodiversity Action Plan on account of their rarity, or supplying critical elements of their habitat requirements.

### County Value/District Value

Site identified as a Site of Importance to Nature Conservation (SINC) at the district level; meeting South Wales Wildlife Sites Partnership (SWWSP) 2004 published designation criteria, but falling short of SSSI designation criteria, whether designated as a SINC or not. Ancient woodlands and sites supporting regionally significant areas of UK BAP habitat. Large scale examples of BAP habitats or areas supporting small populations of protected, UK BAP/ LBAP or threatened species (other than badger).

### High Local

Habitats which just fail to meet Regional value criteria, but which appreciably enrich the ecological resource of the locality. Sites supporting species which are notable or uncommon in the county; or species which are uncommon, local or habitat-restricted nationally, and which might not otherwise be present in the area. Moderate scale examples of BAP habitats or areas supporting small populations of protected, UK BAP/LBAP or threatened species.

### Local Value

Old hedges, woodlands, ponds, significant areas of species-rich grassland, small scale examples of BAP habitats or areas supporting small populations of protected, UK BAP/LBAP or threatened species. Undesignated sites or features which appreciably enrich the habitat resource in the context of their immediate surroundings, parish or neighbourhood (e.g. a species-rich hedgerow). Rare or uncommon species may occur but are not restricted to the site or critically dependent upon it for their survival in the area.

### Site Value (within the immediate zone of influence)

Low-grade and widespread habitats. Woodland plantations, structured planting, small areas of species-rich grassland and other species-rich habitats not included in the UK or Local BAP.

### Negligible

No apparent nature conservation value.

# Acer Ecology

## Appendix 4: Species Recorded

All species recorded by Acer Ecology, 2024

| Taxonomic Name                  | Common Name             | W | LM | CG | LDA | PMG | PIL | TF | Status |
|---------------------------------|-------------------------|---|----|----|-----|-----|-----|----|--------|
| <i>Hypericum pulchrum</i>       | Slender St Johns wort   |   |    |    | LDA |     |     |    |        |
| <i>Rubus fruticosus</i> agg     | Bramble                 |   |    |    |     |     |     |    |        |
| <i>Poa trivialis</i>            | Rough meadowgrass       |   |    |    |     |     |     |    |        |
| <i>Agrostis capillaris</i>      | Common bent             |   |    |    |     |     |     |    |        |
| <i>Ranunculus repens</i>        | Creeping buttercup      |   |    |    |     |     |     |    |        |
| <i>Holcus lanatus</i>           | Yorkshire-fog           |   |    |    |     |     |     |    |        |
| <i>Hieracium</i> sp             | Hawkweed                |   |    |    |     |     |     |    |        |
| <i>scorzoneroide autumnalis</i> | Autumn hawksbit         |   |    |    |     |     |     |    |        |
| <i>Cirsium arvense</i>          | Creeping thistle        |   |    |    |     |     |     |    |        |
| <i>Lapsana communis</i>         | Nipplewort              |   |    |    |     |     |     |    |        |
| <i>Anthoxanthum odoratum</i>    | Sweet vernal grass      |   |    |    |     |     |     |    |        |
| <i>Arrhenatherum elatius</i>    | False oat grass         |   |    |    |     |     |     |    |        |
| <i>Poa trivialis</i>            | Rough meadow-grass      |   |    |    |     |     |     |    |        |
| <i>Anthriscus sylvestris</i>    | Cow parsley             |   |    |    |     |     |     |    |        |
| <i>Potentilla reptans</i>       | Creeping cinquefoil     |   |    |    |     |     |     |    |        |
| <i>Vicia sativa</i>             | Common vetch            |   |    |    |     |     |     |    |        |
| <i>Sonchus asper</i>            | Prickly sowthistle      |   |    |    |     |     |     |    |        |
| <i>Anthriscus cerefolium</i>    | Chervil                 |   |    |    |     |     |     |    |        |
| <i>Dactylis glomerata</i>       | Cock's-foot             |   |    |    |     |     |     |    |        |
| <i>Cirsium vulgare</i>          | Spear thistle           |   |    |    |     |     |     |    |        |
| <i>Senecio jacobaea</i>         | Ragwort                 |   |    |    |     |     |     |    |        |
| <i>Gallium aparine</i>          | Cleavers                |   |    |    |     |     |     |    |        |
| <i>Taraxacum officinale</i> agg | Dandelion               |   |    |    |     |     |     |    |        |
| <i>Digitalis purpurea</i>       | Foxglove                |   |    |    |     |     |     |    |        |
| <i>Rumex obtusifolium</i>       | Broadleaved dock        |   |    |    |     |     |     |    |        |
| <i>Vulpia bromoides</i>         | Squirrel-tail fescue    |   |    |    |     |     |     |    |        |
| <i>Geranium lucidum</i>         | Shining crane's-bill    |   |    |    |     |     |     |    |        |
| <i>Rosa</i> sp                  | Rose                    |   |    |    |     |     |     |    |        |
| <i>Cerastium fontanum</i>       | Common mouse-ear        |   |    |    |     |     |     |    |        |
| <i>Vicia hirsuta</i>            | Hairy tare              |   |    |    |     |     |     |    |        |
| <i>Cardamine hirsuta</i>        | Hairy bittercress       |   |    |    |     |     |     |    |        |
| <i>Geranium dissectum</i>       | Cut-leaved crane's-bill |   |    |    |     |     |     |    |        |
| <i>Sonchus perenne</i>          | Perennial sow thistle   |   |    |    |     |     |     |    |        |
| <i>Veronica serpyllifolia</i>   | Thyme-leaved speedwell  |   |    |    |     |     |     |    |        |
| <i>Urtica dioica</i>            | Nettle                  |   |    |    |     |     |     |    |        |
| <i>Veronica montana</i>         | Wood speedwell          |   |    |    |     |     |     |    |        |
| <i>Veronica beccabunga</i>      | Brooklime               |   |    |    |     |     |     |    |        |
| <i>Sagina apetala</i>           | Annual pearlwort        |   |    |    |     |     |     |    |        |

# Acer Ecology

|                                |                                   |  |  |  |     |  |  |  |  |
|--------------------------------|-----------------------------------|--|--|--|-----|--|--|--|--|
| <i>Lotus glaber</i>            | Narrow leaved bird's-foot trefoil |  |  |  | LDA |  |  |  |  |
| <i>Vicia sepium</i>            | Bush vetch                        |  |  |  |     |  |  |  |  |
| <i>Chamerion angustifolium</i> | Rosebay willowherb                |  |  |  |     |  |  |  |  |
| <i>Geranium robertianum</i>    | Herb-Robert                       |  |  |  |     |  |  |  |  |
| <i>Reseda luteola</i>          | Weld                              |  |  |  |     |  |  |  |  |
| <i>Epilobium parviflorum</i>   | Hoary willowherb                  |  |  |  |     |  |  |  |  |
| <i>Veronica arvensis</i>       | Field speedwell                   |  |  |  |     |  |  |  |  |
| <i>Veronica chamaedrys</i>     | Germander speedwell               |  |  |  |     |  |  |  |  |
| <i>Sinapsis arvensis</i>       | Charlock                          |  |  |  |     |  |  |  |  |
| <i>Myosotis arvensis</i>       | Field forget-me-not               |  |  |  |     |  |  |  |  |
| <i>Geum urbanum</i>            | Wood avens                        |  |  |  |     |  |  |  |  |
| <i>Papaver rhoeas</i>          | Poppy                             |  |  |  |     |  |  |  |  |
| <i>Epilobium montanum</i>      | Broadleaved willowherb            |  |  |  |     |  |  |  |  |
| <i>Trifolium dubium</i>        | Lesser hop trefoil                |  |  |  |     |  |  |  |  |
| <i>Tussilago farfara</i>       | Colt's-foot                       |  |  |  |     |  |  |  |  |
| <i>Crataegus monogyna</i>      | Hawthorn                          |  |  |  |     |  |  |  |  |
| <i>Plantago majus</i>          | Greater plantain                  |  |  |  |     |  |  |  |  |
| <i>Salix</i> sp                | Willow                            |  |  |  |     |  |  |  |  |
| <i>Buddleja davidii</i>        | Butterfly bush                    |  |  |  |     |  |  |  |  |
| <i>Corylus avellana</i>        | Hazel                             |  |  |  |     |  |  |  |  |
| <i>Alnus cordata</i>           | Italian Alder                     |  |  |  |     |  |  |  |  |

| <b>'Habitat Indicator Species' Totals<br/>(Wales Biodiversity Partnership 2008<sup>40</sup>)</b> |  |          |           |           | 2          |            |            |           |  |
|--------------------------------------------------------------------------------------------------|--|----------|-----------|-----------|------------|------------|------------|-----------|--|
|                                                                                                  |  | <b>W</b> | <b>LM</b> | <b>CG</b> | <b>LDA</b> | <b>PMG</b> | <b>PIL</b> | <b>TF</b> |  |

## Key to Indicator Species (Wales Biodiversity Partnership 2008<sup>41</sup>)

W - Woodland, LM – Lowland meadow, CG - Calcareous Grassland, LDA – Lowland Dry Acid Grassland, PMR Purple moor-grass and rush pasture, PIL – Post Industrial Land, TF Species-rich Tillage Fields and Margins

WCA 5 – Species protected under Schedule 5 of the Wildlife and Countryside Act

WCA 9 – Species listed under Schedule 9 of the Wildlife and Countryside Act

<sup>40</sup> Wales Biodiversity Partnership (2008) Wildlife Sites Guidance Wales: A Guide to Develop Local Wildlife Systems in Wales. Wales Biodiversity Partnership/Welsh Assembly Government.

## Appendix 5: Guidelines for Assessing Potential Suitability of Proposed Development Site for Bats

| Suitability | Commuting and Foraging Habitat                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Negligible  | Negligible habitat features on-site likely to be used by commuting and foraging bats.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Low         | <p><u>Commuting Habitat</u><br/>Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat.</p> <p><u>Foraging Habitat</u><br/>Suitable but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.</p>                                                                                                                                                  |
| Moderate    | <p><u>Commuting Habitat</u><br/>Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.</p> <p><u>Foraging Habitat</u><br/>Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.</p>                                                                                                                                                                                                                            |
| High        | <p><u>Commuting Habitat</u><br/>Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge.</p> <p><u>Foraging Habitat</u><br/>High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland.</p> <p><u>Proximity to Known Bat Roosts</u><br/>Site is close to and connected to known roosts.</p> |

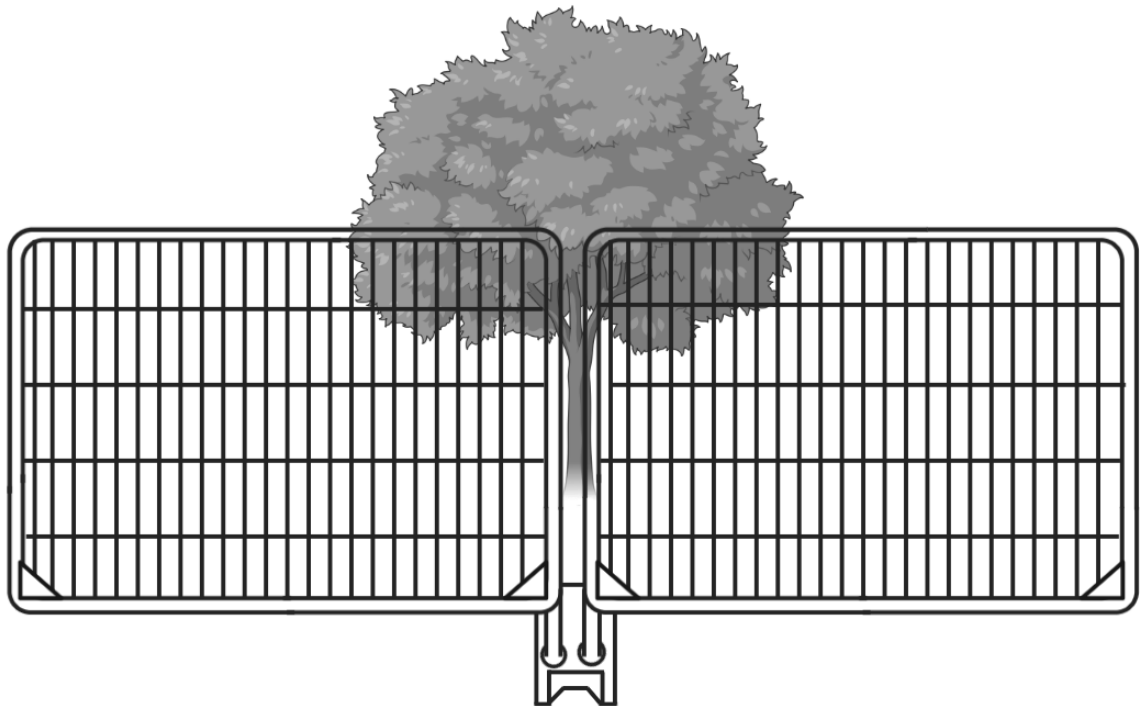
| Suitability | Description of Roosting Habitat                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Negligible  | Negligible habitat features on site likely to be used by roosting bats.                                                                                                                                                                                                                                                                                                                                           |
| Low         | A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection appropriate conditions <sup>42</sup> and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity) or hibernation <sup>43</sup> . |
| Moderate    | A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status <sup>44</sup> (with respect to roost type only) the assessments in this table are made irrespective of conservation status, which is established after presence is confirmed.                |
| High        | A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.                                                                                                                                                   |

<sup>42</sup> For example, in terms of temperature, humidity, height above ground levels, light levels or levels of disturbance.

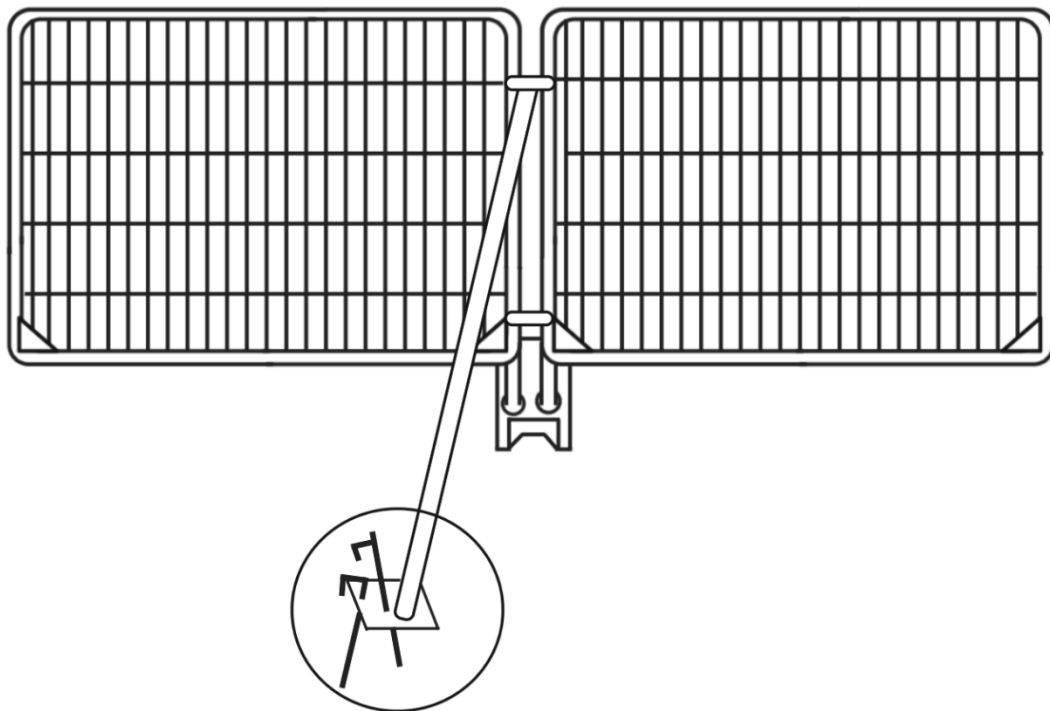
<sup>43</sup> Evidence from the Netherlands, shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten *et al.*, 2015). This phenomenon requires some research in the UK but ecologists should be aware of the potential for large numbers of this species to be present during the autumn and winter in large buildings in highly urbanised environments.

<sup>44</sup> 'High roost status' is not defined within Collins, 2016. Acer Ecology Ltd. interpret maternity, hibernation, swarming sites, mating sites, and satellite roosts as being of 'high roost status' and exclude day roosts, night roosts, feeding roosts, transitional/occasional roosts from this definition.

## Appendix 6: Protective Barriers



Wildlife barrier surrounding tree



Stabilizer strut with base plate secured with ground pins  
Redrawn by Acer Ecology Ltd after BS 5837:2012 Figure 1

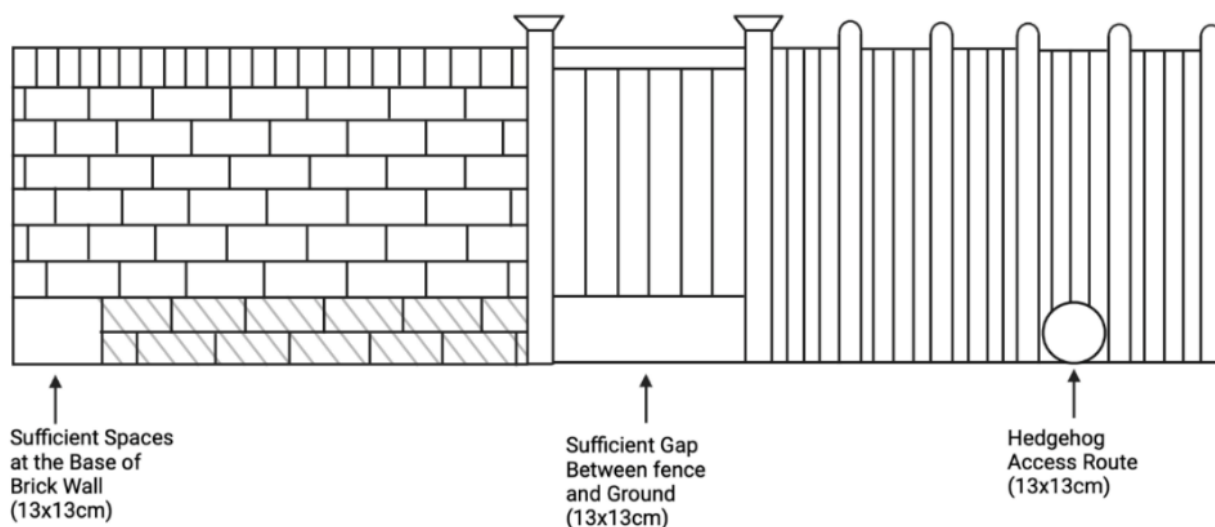
## Appendix 7: Example of Suitable Wall Light Fittings

P2568: Plots 9 & 10, Heolgerrig, Grove Merthyr Tydfil: Preliminary Ecological Appraisal: July 2024

## Appendix 8: Example of Suitable Bollard Lighting

|                                                                                                                                                                                                                                                                                                      | Manufacturer | Model      | Description                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                     | DW Windsor   | Pharola DS | Specifically designed as a 'dark sky compliant' light, this bollard produces zero light above the horizontal plane, and is available with 3000K warm white lighting.<br><br>For more details, visit: <a href="https://www.dwwindsor.com/products/pharola/pharola-ds/">https://www.dwwindsor.com/products/pharola/pharola-ds/</a> |
|                                                                                                                                                                                                                     | GHM-Eclatec  | Trek       | Lighting head and module in die-cast aluminium; polyester powder coating, any colour available. Available in 3000k.<br><br>For more details, visit: <a href="https://www.ghm-eclatec.com/products/lighting/bollards/trek-bollard">https://www.ghm-eclatec.com/products/lighting/bollards/trek-bollard</a>                        |
|                                                                                                                                                                                                                    | GHM-Eclatec  | Taiga      | Lighting head and module in die-cast aluminium; polyester powder coating, any colour available. Available in 3000k.<br><br>For more details, visit: <a href="https://www.ghm-eclatec.com/products/lighting/bollards/taiga-led-bollard">https://www.ghm-eclatec.com/products/lighting/bollards/taiga-led-bollard</a>              |
|                                                                                                                                                                                                                   | BEGA         | 77237      | Cast aluminium, LED 300k, directs beam downwards.<br><br>For more details, visit: <a href="https://www.bega.com/en/products/led-garden-and-pathway-luminaires-for-the-private-sector-77237/">https://www.bega.com/en/products/led-garden-and-pathway-luminaires-for-the-private-sector-77237/</a>                                |
| A tool for finding 'bat-friendly' lighting is available at <a href="https://www.darksky.org/our-work/lighting/lighting-for-industry/fsa/fsa-products/">https://www.darksky.org/our-work/lighting/lighting-for-industry/fsa/fsa-products/</a> although the majority of suppliers are based in America |              |            |                                                                                                                                                                                                                                                                                                                                  |

## Appendix 9: Hedgehog Access Routes



Boundaries and barriers within and surrounding the development, including fencing, railing and gates, should be made permeable For example:

- through the use of fence panels with 13 x 13 cm holes at ground level (hedgehog holes);
- leaving a sufficient gap beneath gates; or
- leaving brick spaces at the base of brick walls.

A variety of fence suppliers provide hedgehog-friendly fencing options<sup>45</sup>, which can be easily incorporated at little or no additional cost. Hedgehog holes should be positioned to connect as much of the landscape as possible. In addition, where essential ground level changes may create barriers to movement (e.g. high kerbs, steps, terracing, sunken patios, gullies and drains), the landscaping should ensure sloped access/escape routes for ground dwelling species.



<sup>45</sup> Photographs taken from <https://www.hedgehogstreet.org/wp-content/uploads/2022/08/PTES-BHPS-Hedgehogs-and-development-guide-2022.pdf>

## Appendix 10: Sparrow Terrace Brick Specification

### Schwegler 1SP Sparrow Terrace



Sparrows are gregarious and prefer to nest close to each other, so this triple-nest box provides room for three families under one roof. It's made from long-lasting, breathable woodcrete to provide the optimum environment for sparrows to nest and rear their chicks.

**Positioning:** On buildings of all kinds in typical habitats including industrial buildings and barns at a height of at least 2m (e.g. under eaves).

**Suitable for:** House and tree sparrows and individual redstarts

**Material:** Woodcrete PLUS

**Height:** 240mm

**Width:** 430mm

**Depth:** 220mm

**Weight:** 15kg

Brood chamber dimensions: Height: 16cm, Width: 10.5cm, Depth: 15cm,

External dimensions: Height: 24.5cm, Width: 43cm, Depth: 20cm, Weight: 15kg

### Habibat Terraced Sparrow Box

Colour: Unfaced or rendered

Dimensions: 440mm x 215mm x 150mm

The Habibat Terraced Sparrow Box is a solid box made of insulating concrete which provides an internal roost space, and can be seamlessly integrated into the fabric of a building as it is built or renovated. The access hole is specifically design to accommodate sparrows.

The Habibat Terraced Sparrow Box can be faced with a number of products to suit the design build. This includes, brick, block, stone, wood or a rendered finish, ensuring the box is unobtrusive and aesthetically pleasing.



## Appendix 11: Nest Box Specification

The Schwegler 1B Woodcrete nest box is available with different entrance hole sizes to attract a wide range of species and prevent competition between birds. The nest box can be attached to the wall using an aluminium nail or by hanging over a branch. The nest box has removable front panel to aid inspection and cleaning.

Entrance hole sizes:

- **32mm entrance hole** will attract great, blue, marsh, coal and crested tit, redstart, nuthatch, collared and pied flycatcher, wryneck, tree and house sparrow and bats.
- **26mm entrance hole** suits blue, marsh, coal and crested tit and possibly wren. All other species are prevented from using the nest box due to the smaller entrance hole.
- **Oval entrance hole** (29 x 55mm) suits redstarts because more light enters the brood chamber. It is also suitable for all other species which nest in the 32mm boxes



Boxes will be mounted a minimum of 2m, and preferably 3m, above the ground, and as far as possible placed on the SE- or SW-facing surfaces of the building.

## Appendix 12: Swift Box Specification

### Schwegler No 17 Triple Cavity Swift Box

Code: 002098D

This nest box is designed by Schwegler for swifts and constructed from plant-fibre based material to mimic their natural nest sites. The No 17 Triple Cavity can accommodate 3 pairs of swifts, assisting the rapid formation of colonies. It should be sited 6-7m above the ground, near the roof of a building or on a steep rock face.



**Positioning:** Under or close to roofs, or on a rock face, at least 5m from the ground. Ensure unobstructed access for birds.

**Suitable for:** Common swifts

**Material:** Vegetable fibre material (asbestos-free)

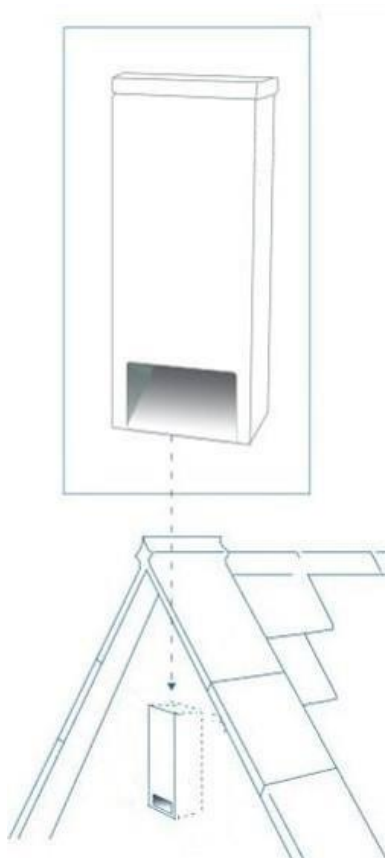
**Height:** 150mm

**Width:** 900mm

**Depth:** 150mm

**Weight:** 7kg

## Appendix 13: Woodstone Bat Tube



### Woodcrete Bat Tubes

These are a well-known brand that have a low visual impact on the development because they can be built into the exterior wall and then rendered or painted.

### How Many to Install

Typically, one tube is recommended on sites where there are low numbers of bats and multiple groups of tubes are recommended on sites of high ecological significance.

### Installation

The tubes should be built into the exterior wall of the building, typically at the gable apex. The tubes should be installed flush with the surrounding wall and can then be rendered or painted with breathable paint if required.

### Schwegler 1FR and 2FR

These are two similar designs. The 1FR is designed to be used singularly (shown here) whereas the 2FR has transverse connecting holes that allow tubes to be collected together or lead into the cavity wall.



### Specifications

|               |               |
|---------------|---------------|
| <b>Height</b> | <b>47.5cm</b> |
| <b>Width</b>  | <b>20cm</b>   |
| <b>Depth</b>  | <b>12.5cm</b> |
| <b>Weight</b> | <b>9.8kg</b>  |

### Location

The tubes should be positioned at least 0.5m below the eave or gable apex to prevent predation by domestic cats. It is also recommended that where practical, the tubes are not positioned above windows or doors.