



Preliminary Ecological Assessment



Project: Haydn Terrace, Merthyr Tydfil

Instructed by: Merthyr Tydfil Housing Association

Reported by: Ecological Services Ltd
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1. Introduction

The applicant is seeking planning permission to develop a parcel of land off Haydn Terrace, Merthyr Tydfil. Indicative development proposals are to construct residential housing with soft landscaping and utilities installed. The majority of the site is currently undeveloped and consists broadly of scrub, trees and grassland habitat.

This report will assess the potential of the land within the site boundary to support habitats and species and the implications that any future development proposals could have on them.

1.1 Site Description

The site is located within Merthyr and centred at NGR SO 05776 08008. The site is largely sloping from its highest point in the west to its lowest in the southeast. Pavement and road borders the site on the west and southern sides of the site. A set of steps, a line of houses and garages line the northern boundary of the site and garden fencing runs along the eastern boundary. The area is surrounded on all sides by residential development with areas of associated infrastructure and garden landscaping, there is little to no continuous connectivity with other vegetated habitat in the local area.

The wider landscape largely comprises areas of residential development. The green open space of Ifor Park lies approximately 190 m northeast at its closest point. An area of woodland is present adjacent to the A465 road and Ifor Park to the north. A pond has been created within Ifor Park, associated with the A465 road works approximately 350 m northeast of the site. Galon Uchaf Park is located approximately 450 m southwest.

1.2 Survey Constraints

The optimal time period to carry out ground-based visual assessments of trees for bat roosting potential is between December to March inclusive, when broadleaved trees are devoid of leaves and features are more readily visible. It should be noted that ground based assessments are inherently constrained and potential roosting features present upon the skyward facing surfaces of limbs and branches will most likely be missed.

The site visit was completed during May which is an optimal time of year to undertake habitat assessments. It was possible to draw broad conclusions on habitat types within the site boundary.

The northern section and eastern boundary of the site could not be accessed due to the dense scrub vegetation present. These sections of the site were assessed by viewing from a good vantage point close to the habitats. Habitats could be categorised but the ground

below these areas could not be fully viewed for signs of species presence such badger. This is not deemed a significant limitation to the survey.

1.3 Surveyor Experience

Beth Lewis is an associate member of Chartered Institute of Ecology and Environmental Management (CIEEM). Beth is an ecologist with 6 years experience undertaking a wide range of flora and fauna surveys. All survey work is undertaken following JNCC Phase 1 Survey Guidelines and CIEEM Guidelines for Preliminary Ecological Appraisal (2nd Ed 2017).

1.4 Previous Survey Work

A Preliminary Ecological Assessment of the development site was undertaken in January 2021. The survey found the site to contain semi improved grassland, tall ruderal vegetation, stands of bramble, woody and gorse scrub, scattered scrub, scattered trees and a small number of garage buildings.

A reptile refugia survey was undertaken on the site in 2022 by Ecological Services Ltd. Full details of the survey methodology and findings can be found in the report 'Reptile Survey Report; Haydn Terrace, Penydarren' V1.0 dated 18th May by Ecological Services Ltd. 37 reptile refugia placed on site on 23rd March 2022 in areas with reptile suitability. A maximum count of 3 slow worm (*Anguis fragilis*) were recorded. The refugia laid out on site were unfortunately tampered with and removed during the survey effort. Detailed development plans were not available at the time the reptile survey report was issued. The report recommends that ideally measures will need to be implemented to ensure the reptile population can be retained on site during any future development work.

2. Desktop Study

A data search was undertaken via Aderyn for the proposed development site and surrounding area (ref: 0245-110). A 2 km buffer zone was searched and records returned within 500m of site are noted below:

- Slow-worm - Closest record being approximately 430 m north of the site.
- Three records of West European hedgehog (*Erinaceus europaeus*)- Closest record being approximately 50 m east of the site.
- Nine records of Japanese knotweed (*Fallopia japonica*)- Closest record being approximately 80 m east of the site.
- Nine records of invertebrates were returned within within 500 m of the site for species including: Azure damselfly (*Coenagrion puella*), Blue-tailed damselfly (*Ischnura elegans*), Cinnabar (*Tyria jacobaeae*), Common carder bee (*Bombus pascuorum*), Golden-ringed dragonfly (*Cordulegaster boltonii*), Large red damselfly (*Pyrrhosoma nymphula*), Small heath (*Coenonympha pamphilus*), Wall moth (*Lasiommata megera*). The closest record being the Common carder bee approximately 100 m east of the site.
- Three records of bat foraging and commuting activity were returned within 500 m of the site for species including: Pipistrelle bat species (*Pipistrellus sp.*), Serotine (*Eptesicus serotinus*) and an unknown bat species. The closest record being an unknown bat species approximately 220 m south of the site.
- Bird species listed under Section 7 of the Environment (Wales) Act 2016 (EWA 2016) include –House sparrow (*Passer domesticus*), Skylark (*Alauda arvensis*), Reed bunting (*Emberiza schoeniclus*), Dunnock (*Prunella modularis*), Kestrel (*Falco tinnunculus*), Herring gull (*Larus argentatus*) and Tree pipit (*Anthus trivialis*).
- Bird species listed under Schedule 1 of the Wildlife & Countryside Act 1981 (WCA1.1) include – Red kite (*Milvus milvus*), Greenshank (*Tringa nebularia*), Little ringed plover (*Charadrius dubius*), Whimbrel (*Numenius phaeopus*), Goldeneye (*Bucephala clangula*) and Peregrine (*Falco peregrinus*).

Records of note returned for the rest of the 2 km buffer zone are detailed below:

- Three records of Common lizard (*Zootoca vivipara*).
- Slow worm.
- 16 records of Common frog (*Rana temporaria*).

- 27 records of Common toad (*Bufo bufo*).
- 11 records of Great crested newt (*Triturus cristatus*).
- 13 records of Palmate newt (*Lissotriton helveticus*).
- Eurasian red squirrel (*Sciurus vulgaris*).
- European water vole (*Arvicola amphibius*).
- Two records of Eurasian badger (*Meles meles*).
- 21 records of Eurasian otter (*Lutra lutra*).
- 391 records of invertebrates were returned within the rest of the buffer zone for 141 different species. The 20 closest records were for species including: Small heath (*Coenonympha pamphilus*), Broom moth (*Ceramica pisi*), Wall (*Lasiommata megera*), Cinnabar (*Tyria jacobaeae*), Dingy skipper (*Erynnis tages*), Grayling (*Hipparchia semele*), Shimmering ruby-tail (*Chrysis fulgida*), Blood-vein (*Timandra comae*), Brindled beauty (*Lycia hirtaria*), Buff ermine (*Spilosoma lutea*), Dark-barred twin-spot carpet (*Xanthorhoe ferrugata*), Dot moth (*Melanchra persicariae*), Dusky thorn (*Ennomos fuscantaria*), Garden tiger (*Arctia caja*), Grass rivulet (*Perizoma albulata*), Green-brindled crescent (*Allophyas oxyacanthae*), Rustic (*Hoplodrina blanda*), Sallow (*Cirrhia icteritia*), Shoulder-striped wainscot (*Leucania comma*), Small phoenix (*Ecliptopera silaceata*).
- 280 records of bat foraging and commuting activity were returned within the rest of the buffer zone for species including: Brown long-eared (*Plecotus auritus*), Common Pipistrelle (*Pipistrellus pipistrellus*), Daubenton's (*Myotis daubentonii*), Greater horseshoe (*Rhinolophus ferrumequinum*), Lesser horseshoe (*Rhinolophus hipposideros*), Natterer's (*Myotis nattereri*), Noctule (*Nyctalus noctula*), Serotine and Soprano pipistrelle (*Pipistrellus pygmaeus*).
- 41 records of bat roosts were returned within the rest of the buffer zone for species including: Brown long-eared, Common pipistrelle, Daubenton's, Lesser horseshoe, Natterer's, Pipistrelle bat species, Soprano pipistrelle and an unknown bat species.
- Bird species listed under Section 7 of the Environment (Wales) Act 2016 (EWA 2016) include – Black-headed gull (*Chroicocephalus ridibundus*), Common scoter (*Melanitta nigra*), Grey partridge (*Perdix perdix*), Wood warbler (*Phylloscopus sibilatrix*), Woodlark (*Lullula arborea*), Pied flycatcher (*Ficedula hypoleuca*), Lesser redpoll (*Acanthis cabaret*), Ring ouzel (*Turdus torquatus*), Marsh tit (*Poecile palustris*), Hen harrier (*Circus cyaneus*), Tundra swan (*Cygnus columbianus*), Spotted flycatcher (*Muscicapa striata*), Ringed plover (*Charadrius hiaticula*).

- Bird species listed under Schedule 1 of the Wildlife & Countryside Act 1981 (WCA1.1) include –Common scoter (*Melanitta nigra*), Osprey (*Pandion haliaetus*), Woodlark (*Lullula arborea*), Barn owl (*Tyto alba*), Snow bunting (*Plectrophenax nivalis*), Corncrake (*Crex crex*), Kingfisher (*Alcedo atthis*), Redwing (*Turdus iliacus*), Fieldfare (*Turdus pilaris*), Hobby (*Falco subbuteo*), Whooper swan (*Cygnus cygnus*), Goshawk (*Accipiter gentilis*), Green sandpiper (*Tringa ochropus*), Merlin (*Falco columbarius*), Avocet (*Recurvirostra avosetta*), Hoopoe (*Upupa epops*)

2.1 Protected Sites

A data search for species records was undertaken for the proposed development site and surrounding area. The search also considered statutory and non-statutory protected sites.

Statutory Protected Sites

There is one Statutory Protected Site within 2 km of the site boundary. Cwm Taf Fechan Woodlands Site of Special Scientific Interest (SSSI) is located approximately 1.7 km northwest of the site. This is an expanse of woodland and is designated for its interesting plant communities and luxuriant growths of bryophytes along the Taf Fechan River. This is also designated as a Local Nature Reserve (LNR).

Non- Statutory Protected Sites

Part of the Taf Fechan River is designated as a Wildlife Trust Reserve approximately 1.7km northwest of the site.

There are nine Sites of Interest for Nature Conservation (SINCs) within 2 km of the site boundary. The closest being Bryniau SINC approximately 500 m north of the site. This is a mosaic habitat within a disused quarry with habitats including woodland, neutral grassland, ponds and reedbeds.

The remaining SINCs within 2 km of the site are listed below with an approximate distance from the development site:

- Morlais Hill - approximately 1.1 km north.
- Gurnos Wood - approximately 1.2 km west.
- Cyfarthfa Park - approximately 1.3 km southwest.
- Blaenmorlais - approximately 1.5 km northeast.
- Y Graig - approximately 1.7 km west.

- Cwm Taf Fechan - approximately 1.7 km west.
- Afon Taf - approximately 1.8 km southwest.
- Merthyr Common North - approximately 1.9 km southwest.

There are eight areas of Ancient Semi Natural Woodland (ASNW) within 2 km of the site boundary. The closest being approximately 1.2 km northwest of the site. These are broadleaf woodlands comprising mainly native tree and shrub species which are believed to have been in existence for over 400 years. The ground vegetation will reflect the naturalness of these woodlands and will frequently feature species which provide clear indication of long and continued woodland cover. They will have been woodland for centuries and contribute substantially to our natural and cultural heritage.

There are four areas of Restored Ancient Woodland within 2 km of the site boundary. The closest being approximately 1.4 km southwest of the site. These woodlands are predominately broadleaved now and are believed to have been continually wooded for over 400 years. They will have gone through a phase where canopy cover will have been more than 50% non-native conifer tree species and now have a canopy of more than 50% broadleaf.

There is one Ancient Woodland Site of Unknown Category within 2 km of the site. It is located approximately 1.8 km northwest of the site. These are woodlands which may be ASNW, RAWs or PAWS. These areas are predominantly in transition where the existing tree cover is described as shrubs, young trees, felled or ground prepared for planting.

The site lies within a B-Lines area. B-Lines are non-statutory protected sites which aim to restore and create wildflower habitats forming stepping stones that link existing wildlife areas together creating a network of habitats across the landscape benefiting not only pollinators but a host of other wildlife.

There are no Tree Preservation Orders (TPOs) within the site boundary.

2.2 Potential Impacts to Protected Sites

There are no impacts expected on protected sites adjacent to the site. Given the localised nature of the works and the built up housing areas surrounding the site on all sides, protected sites will not be impacted by the proposed works.

Any development proposals for the site will result in the loss of B-Line habitat which is a non statutory designated site. Any new planting scheme proposed for the site must include wildlife friendly plants, particularly for invertebrates. Consideration to habitat connectivity and wildlife friendly management of all soft landscaping must be given as well.

3. Phase 1 Survey

3.1 Habitats

A walkover survey of the site was completed on the 20th May 2024. A species list can be found in Appendix 1, photographs of the site can be found in Appendix 2 and a map of the habitats found within the site is provided in Appendix 3.

A small car park **hardstanding** area is located in the northwest of the site (See appendix 2, photo 4). The majority of the west and central area of the site is a mosaic of **semi-improved grassland** with species including: Birds foot trefoil, Bluebell sp., Broad leaved dock, Brown knapweed, Caraway, Cleavers, Cock's-foot, Common bent, Common cats-ear, Common chickweed, Common mouse-ear, Common ragwort, Common sedge, Common sorrel, Common vetch, Creeping buttercup, Creeping cinquefoil, Creeping thistle, Cuckoo flower, Daisy, Dandelion, possible Devil's-bit scabious, Dove's-foot crane's-bill, Fescue sp., Field wood rush, Germander speedwell, Greater plantain, Hedge bindweed, Hogweed, Lesser trefoil, Mare's-tail, Meadow buttercup, Meadow foxtail, Mouse-ear-hawkweed, Red Clover, Ribwort plantain, Rosebay willowherb, Smooth meadow-grass, Soapwort, Sweet vernal-grass, Wild carrot and Yorkshire fog. (See appendix 2, photos 1, 2 and 4).

Tall ruderal vegetation grows in large patches throughout the semi-improved grassland. Tall ruderal species include: Bracken, Bramble, Caraway, Common nettle, Common ragwort, Meadow foxtail and Rosebay willowherb. (See appendix 2, photo 6).

Within the centre of the site is an area with **scattered trees** (See appendix 2, photos 7 and 8). A small section of these are growing in a relatively dense formation (but not dense or extensive enough to meet the criteria of woodland) with species including: Ash, Blackthorn, Elder, Goat willow, Grey willow, Hawthorn, Hazel, Holly, Pear sp., Pedunculate oak, Rowan, Scots pine, Silver birch and Sycamore. The **semi-improved grassland** makes up the understory to the majority of these trees with **bare ground** dominating under the denser canopy cover of the trees.

A section of **gorse scrub** is present in the centre of the site (See appendix 2, photo 3). **Dense bramble scrub** dominates the north and eastern boundary of the site with species including: Bracken, Bramble, Gorse and Nettle. (See appendix 2, photo 5).

A small stand of **bamboo** was present in the west of the site (See appendix 2, photo 10). An area was present in the west of the site where **Yellow iris** dominated. Bramble, Rowan and grey willow were also present within this area (See appendix 2, photo 9). A small patch of **soft rush** was present (See appendix 2, photo 11). Both of these areas were dry ground at the time of survey. **Japanese knotweed** was present where the site sloped steeply downwards in the southeast (See appendix 2, photo 12).

Four garages are present in a line to the north east of the site. These are brick built with two of the four structures having render covering the bricks. All have pitched, corrugated roofs with a metal strip running along their ridges. and shutter doors facing out of the site to the north. The south of the buildings back onto scrub within the site which covers the majority of their southern elevations. Two of the four garages have partial wooden barge boards along one elevation. Gaps are present under the main metal ridge strip, between the metal roofing and vertical brick walls and also under barge boards and around shutter entrances (See appendix 2, photos 13, 14 and 15).

3.2 Great Crested Newts (GCN)

Great Crested Newts (*Triturus cristatus*) are a European protected species and are protected under the Conservation of Habitats and Species Regulations 2017. In summary, they are protected from:

- Deliberate capture, killing and injuring,
- Deliberate disturbance of a breeding site or resting place,
- Deliberate taking or destroying of eggs,
- Damage or destruction of a breeding site or resting place.

Great crested newts (GCN) are listed on schedule 5 of The Wildlife & Countryside Act 1981 which protects them from intentional or reckless disturbance or obstruction when using a structure or place for shelter and / or protection. It is also an offence to sell, offer or expose for sale a Great crested newt. Great crested newt and Common toad are listed in section 7 of the Environment (Wales) Act 2016 which makes them key species to sustain and improve biodiversity.

There were 11 records returned in the data search for GCN within 2 km of the site. Seven of these are considered to be historic records from before 2007. The closest, recent record from 2022 is approximately 2 km northwest of the site.

The habitats found within the development site have some potential to be used by amphibians, such as GCN, during their terrestrial life stages. The habitats such as the tall ruderal vegetation, tussocky semi-improved grassland, scrub and scattered trees within the site are all suitable for commuting, foraging and overwinter.

GCN generally like to have a necklace of suitable waterbodies for breeding purposes within a local area. There were no ponds or waterbodies present on the site at the time of surveying. When reviewing aerial maps, there appears to be a single waterbody present within 500 m of the site, including: a pond recently created during the A465 road works, within Ifor Park, approximately 350 m northeast of the site. Other ponds maybe present within residential

gardens or wooded areas but are not visible on aerial images. Connectivity between Ifor Park and the site are limited due to the housing of Marshall Crescent and Rocky Road preventing suitable GCN commuting pathways. The ponds has been recently created and is likely to be disturbed by the adjacent road works.

There was an area within the northwest of the site where Yellow iris was growing. There was also an area of soft rush growing in the east of the site. Although these areas were dry and at the time of surveying it is presumed that they could hold water, on occasion, through wet spells in the year or could have previously held water.

The site is isolated from areas of natural habitat by surrounding roads and residential housing resulting on very limited habitat connectivity. Given the lack of local records and poor habitat connectivity within the local area, GCN are considered highly unlikely to be present within the site boundary. **No further recommendations are made for this species.**

3.3 Dormouse

The Dormouse (*Muscardinus avellanarius*) is a European protected species and is protected under the Conservation of Habitats and Species Regulations 2017. In summary, they are protected from:

- Deliberate capture, killing and injuring,
- Deliberate disturbance of a breeding site or resting place,
- Damage or destruction of a breeding site or resting place.

Dormouse is listed on schedule 5 of The Wildlife & Countryside Act 1981 which protects them from intentional or reckless disturbance or obstruction when using a structure or place for shelter and / or protection. It is also an offence to sell, offer or expose for sale a native Dormouse. Dormouse is listed in section 7 of the Environment (Wales) Act 2016 which makes them a key species to sustain and improve biodiversity.

There were no records of Dormouse returned within 2 km of the site boundary.

A large portion of the land within the development area is semi-improved grassland, tall ruderal grassland and hardstanding which are considered to be unsuitable for use by Dormouse as they provide no cover from predation or foraging habitat. The central area of trees is also sub optimal dormouse habitat as the understory is bare ground and grassland.

The areas of scrub around the site are suitable for dormouse use although the area is fairly limited in extent when considered in the context of the site. The Dormouse Conservation Handbook estimates that 2.2 ha of suitable habitat are required to support a pair of Dormouse. When reviewing aerial images of the site and considering habitat connectivity,

there is no connectivity to suitable habitat in the wider landscape. The closest area of woodland appears to be to the north of site adjacent to Ifor Park, separated by housing and roads.

Given the lack of local records, limited habitat connectivity and the limited suitability of habitats within the site boundary it is considered highly unlikely that Dormouse are present.

No further survey recommendations are made for Dormouse.

3.4 Bats

All British bats are a European protected species and are protected under the Conservation of Habitats and Species Regulations 2017. In summary, they are protected from:

- Deliberate capture, killing and injuring,
- Deliberate disturbance of a breeding site or resting place,
- Damage or destruction of a breeding site or resting place.

Schedule 5 of The Wildlife and Countryside Act (1981) also protects all species of British bat and their roosting locations. British bats are protected from intentional or reckless disturbance and or obstruction of their roosting places. Barbastelle, Bechstein, Noctule, Brown long-eared, Common pipistrelle, Soprano pipistrelle, Greater horseshoe and Lesser horseshoe are also listed in section 7 of the Environment (Wales) Act 2016 which makes them a key species to sustain and improve biodiversity.

283 records of bat foraging and commuting activity were returned within 2 km of the site for species including: Brown long-eared, Common pipistrelle, Daubenton's, Greater horseshoe, Lesser horseshoe, Natterer's, Noctule, Serotine and Soprano pipistrelle. The closest record being an unknown bat species approximately 220 m south of the site.

41 records of bat roosts were returned within 2 km of the site for species including: Brown long-eared, Common pipistrelle, Daubenton's, Lesser horseshoe, Natterer's, Pipistrelle bat species, Soprano pipistrelle and an unknown bat species. The closest records being Brown long-eared, Daubenton's and Lesser horseshoe hibernation roosts approximately 1.2 km northeast of the site. Two Common Pipistrelle bats were also found roosting within the Blessed Carlo Acutis Catholic School approximately 1.2 km southwest of the site.

Building Assessment

There are four garages present to the north east of the site. An internal assessment of the buildings was not possible due to individual tenants utilising the garage structures. The buildings were assessed as having LOW bat roost suitability. Two of the four garages have partial wooden barge boards along one elevation with gaps present between these and the

walls. Gaps are present under the main metal ridge strips of each garage, between the metal roofing and around shutter entrances (See appendix 2, photos 13, 14 and 15).

The buildings seemingly had little thermal insulation due to the roofing material and gaps present and the road (Marshall crescent) immediately to the north of the garages was well lit with street lighting reducing the structures potential for use by bats. However the current development proposals do not include any work which would affect the structure of the buildings. **Therefore no further recommendation are made in this instance.**

Tree Assessment

There are a number of scattered trees within the site. The trees have an average trunk diameter of approximately 15 cm and around 5 m in height. It was possible to access all around each tree due to the scattered formation and limited understory. Good visibility into the canopy was also achievable. No potential roost features (PRFs) for bats were noted during the site visit. However it is recognised that the summer months are a sub optimal time of year to assess trees for potential roost features due to foliage. The trunks and branches of the majority of trees within the site had small diameters due to their young age, making them unlikely to possess large enough crevices for multiple bats to roost within. The trees within the site boundary are considered to have negligible potential for roosting use by bats. **No further recommendations are made for bats and tree roosting use.**

Habitat Assessment

The habitat within the site is considered to have LOW suitability for use by commuting and foraging bats. The majority of the site is open and exposed on a high elevation, not providing a great deal of shelter from the elements for bat species when foraging / commuting. The site has poor habitat connectivity to vegetated habitats in the wider landscape although a wooded area is present within Ifor Park approximately 160 m northeast at its closest point.

The site is surrounded by housing and roads on all elevations and street lighting is present immediately adjacent to the north, west and south of the site, reducing its likelihood for bats to commute through the site due to light spill along its boundaries.

The mosaic of scrub, trees and grassland within the site boundary are suitable for a small number of bat species to utilise for commuting and foraging purposes, at least on occasion.

A wildlife friendly lighting strategy will be required as part of the development proposals.

It is suggested that habitat corridors are created around and through the development site, where possible. This will help encourage nocturnal wildlife to use the site for commuting and foraging purposes. A wildlife friendly lighting strategy must try to prevent light spill on to habitat corridors created within the site. Recent Bat Conservation Trust (BCT) guidance would advise desired illuminance levels for a feature to be considered dark would be at or

below 0.2 lux on a horizontal plane and 0.4 lux on a vertical plane. This lighting level can be difficult to achieve in large housing developments and the minimal use of lighting, suitable location of lighting and low level LED warm lighting can help to achieve low lighting levels.

3.5 Otters

The Otter (*Lutra lutra*) is a European protected species and is protected under the Conservation of Habitats and Species Regulations 2017. In summary, they are protected from:

- Deliberate capture, killing and injuring,
- Deliberate disturbance of a breeding site or resting place,
- Damage or destruction of a breeding site or resting place.

Otter are listed on schedule 5 of The Wildlife & Countryside Act 1981 which protects them from intentional or reckless disturbance or obstruction when using a structure or place for shelter and / or protection. It is also an offence to sell, offer or expose for sale an otter. Otter is listed in section 7 of the Environment (Wales) Act 2016 which makes them a key species to sustain and improve biodiversity.

21 records of Otter were returned within 2 km of the buffer zone. The closest record for otter is for a road traffic collision approximately 1.4 km away from the site. There is little connectivity between the site and any suitable running waterbodies for otter within the wider landscape with a lot of the records being within the Taff Fechan River that runs to the west of the site, 1.8 km away at its closest.

Otters tend to prefer secluded locations for their holts to help prevent them being disturbed by other animals. It is accepted that otters can travel long distances from river corridors to find acceptable holt sites. The site has limited habitat connectivity as it is surrounded by roads and housing. The majority of the site is open and exposed to weather and disturbance by predators. The scrub and tree lines within the site could possibly provide cover for use by otter. However given the proximity of residential housing and roads and likely high levels of on site disturbance by members of the public its thought highly unlikely otter would use the site. **No further survey recommendations are made for otter.**

3.6 Badger

Badgers (*Meles meles*) are protected under the Protection of Badgers Act 1992. In summary they are protected from:

- Taking, killing or injuring;
- Cruelty;

- Interfering with a badger sett;
- The selling and possession of badgers;
- Marking or ringing.

Badgers are also listed on schedule 6 of the Wildlife and Countryside Act 1981 as amended.

Badgers tend to have a variety of setts with different uses and functions within the territory for the family unit. In general there is usually a main sett which the family will use the most. There are then annex, subsidiary and or outlier setts which depending on family structures and environmental pressures may be used at different times of the year. As female badgers tend to have their cubs over winter the disturbance and damage of badger setts is prohibited between December and June inclusive. NRW are the licensing body for any actions which may contravene the above legislation.

Two records of badger were returned within 2km of the site. One being road traffic collision on the A465 approximately 1.2 km northwest of the site, the other being on the A4060 road approximately 1.2 km southeast of the site.

Badgers favour a dry sloping site for digging their setts preferably within woodland or even under a large hedgerow bank. Badgers are creatures of habit and tend to follow regular pathways between their setts and foraging grounds.

There is no connectivity to other suitable habitat within the wider landscape, although, badgers can commute at nighttime through built up areas. No latrines or evidence of digging were noted across the accessed areas of the site. The north and western scrub area of the site could not be accessed due to dense vegetation. However, no evidence of mammal movement through the dense vegetation was noted when assessing the perimeter of this area and from a vantage point. The site is also likely to be frequently disturbed by members of the public passing through.

Given the lack of evidence for the presence of badger, no evidence of mammal runs through areas of scrub and high level of on site disturbance via members of the public the presence of badger within the site boundary is considered to be highly unlikely. However as a precaution, **a visual inspection of scrub immediately prior to any vegetation clearance is recommended.**

3.7 Birds

All breeding birds are protected under schedule 1 of the Wildlife and Countryside Act (1981) as amended. Under this Act it is an offence to:

- Intentionally take, damage or destroy the nest of any wild bird while it is in use or being built.
- Intentionally take or destroy the egg of any wild bird.

Enhanced protection is afforded to species listed on Schedule 1 of the Act, this additional protection makes it an offence to:

- Intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

A variety of bird records were returned within 2 km of the site boundary with 91 different species records returned.

The majority of the site is considered to be unsuitable for nesting use by bird species. Due to the dominant, open grassland areas on site. Nesting opportunities occur in the scrub and trees within the site, although no nests were identified during the site visits. All habitats within the site boundary are likely to be used by local bird species for foraging and commuting purposes.

The development proposals are likely to impact on the majority of habitats within the site boundary. The loss of such habitat is likely to result in the loss of bird nesting and foraging habitat. Birds nesting within the site could be impacted by temporary noise disturbance from the proposed works. **A precautionary approach to the removal of habitat with bird nesting potential will be required. Compensation measures for the loss of bird foraging and nesting habitat will be required.**

3.8 Reptiles and Amphibians

Reptiles such as the Slow-worm, Common lizard, Adder and Grass snake are protected under the Wildlife and Countryside Act 1981 (as amended). They are protected from killing, injuring and sale. They are protected from killing, injuring and sale. They are also listed in section 6 of The Environment (Wales) Act 2016.

The four widespread species of amphibian i.e. the Smooth and Palmate newts, Common frog and Common toad, are protected under the Wildlife and Countryside Act 1981 (as amended) by Section 9(5) of the Wildlife and Countryside Act 1981. This section prohibits sale of these species. Common toad is listed in section 6 of The Environment (Wales) Act 2016.

Reptiles prefer a mosaic of habitats with diverse vegetation structure creating open areas and nearby cover to provide protection from predators and the elements. Common amphibian species require still pools of water for breeding purposes and damp conditions with foraging habitat during their terrestrial life stages.

Five records of reptiles and 67 records of amphibians were returned in the data search within 2 km of the site for species including: Common frog, Common lizard, Common toad, Slow worm and Palmate newt. The closest records being for Slow worm approximately 430 m north of the site. All other records returned were over 700 m away from the site.

Habitats within the site boundary are considered to be broadly similar to those found during the 2022 surveys. Therefore the site is still considered suitable for reptile and amphibian use during the summer and winter months. The mosaic structure of habitats on site include semi-improved grassland, tall ruderal vegetation, hardstanding, scrub and scattered trees.

A maximum of three slow-worms were identified during one survey visit on site during the 2022 reptile refugia surveys undertaken by Ecological Services Ltd. During the reptile survey visits, many of the refugia mats were removed from site by members of the public, reducing the robustness of survey results. Given the continued presence of small numbers of slow worm within the site boundary during the 2022 refugia survey it was concluded a small population of slow worm are present. Mitigation and compensation recommendations were made for the development to protect slow worm during any future development.

Repeat reptile surveys are not recommended in this instance, due to the likelihood that refugia mats placed on site may be tampered with, similarly to the previous surveys. Instead **it is suggested to assume the presence of a small population of slow worm on site and provide an appropriate reptile mitigation strategy to inform the development proposals.** Reptile mitigation measures will also benefit any amphibian species that use the site.

3.9 Other Mammals

Other notable mammal species listed under S7 of the Environment (Wales) Act 2016 which had records returned during the data search included hedgehog. 31 records were returned within 2 km of the site with three records being within 500 m of the site.

Hedgehog is considered likely to be present within the site at least on an occasional basis for foraging and overwintering. Hedgehog is considered to be a species of principal importance, for the purpose of maintaining and enhancing biodiversity in relation to Wales. As such consideration must be given to this species in any plans proposed for the site.

3.10 Invertebrates

Notable lepidopteran species records, those species that are listed under S7 of the Environment (Wales) Act 2016, returned from the data search include: Azure damselfly (*Coenagrion puella*), Blue-tailed damselfly (*Ischnura elegans*), Cinnabar (*Tyria jacobaeae*), Common carder bee (*Bombus pascuorum*), Golden-ringed dragonfly (*Cordulegaster boltonii*), Large red damselfly (*Pyrrhosoma nymphula*), Small heath (*Coenonympha pamphilus*), Wall moth (*Lasiommata megera*). The closest record being the Common carder bee approximately 100 m east of the site.

391 records of invertebrates were returned within the rest of the buffer zone, over 500 m away, for 141 different species.

The site comprised of a mosaic of semi-improved grassland, tall ruderal vegetation, hardstanding, scrub and scattered tree habitats. Mosaic habitats are important for invertebrates as many require two or more habitats to complete their lifecycle. The variety of habitats present therefore allows the site to support a wide range of invertebrate groups.

A potential Devil's-bit scabious plant was identified in a small area of semi-improved grassland in the west of the site. This is the main food plant for the Marsh fritillary butterfly which is a species that is threatened across Europe and is of high butterfly conservation importance. Marsh fritillary is a UK BAP priority species and lays its eggs on the underside of Devil's-bit scabious plants. The Marsh fritillary exists as metapopulations, comprising groups of local populations connected by occasional dispersal. This means that the butterfly needs networks of well connected habitat. There were two recent, local records of Marsh fritillary returned in the data search, both approximately 1.6 km away from the site. The site is considered sub-optimal for Marsh fritillary use due to the limited abundance of scabious and lack of habitat connectivity to other areas of habitat suitable for the species.

The habitats of the site were assessed for their potential to support invertebrates using the Invertebrate Habitat Potential Assessment (IHPA) as found in CIEEM in practice Issue 112, June 2021. See table 2 for results. The IHPA protocol has been produced to allow ecologists without specialised entomological expertise to identify key habitats and features likely to support important invertebrate assemblages. Full details of habitat types can be found in Appendix 5.

Table 2. Invertebrate Habitat Potential Assessment

Habitat Element	Grade
Decaying Wood – H1	D - Minor
Rotational Management – H2	E- Absent
Nectar Resources – H3	D- Minor
Wet Substrates – H4	E- Absent
Other Water Habitats – H5	E- Absent
Structural Patchwork – H6	C - Moderate
Still Air (S) – H7	D - Minor
Still Air (H) – H8	D - Minor
Connectivity – H9	D - Minor
Ecoclines – H10	C - Moderate
Bare Earth – H11	D - Minor

Based on the Invertebrate Habitat Potential Assessment (IHPA) the site, in its current state, is considered to have potential to support common and widespread generalist species of invertebrate species. The site also sits within a B-lines designated area. Whilst further survey work for invertebrate species is not recommended, enhancement measures suitable for invertebrates should be included within any further development proposals.

4. Recommendations and Mitigation

It is proposed to create residential development with garden space and access roads within the site boundary. It is anticipated that the majority of the habitats within the site boundary will be lost or impacted as part of any future development proposals.

Broad recommendations are made below to help inform the design process. **Once the development proposals are progressed and finalised and the considerations to development within the site are addressed, further ecological input will be required.** Our recommendations are:

Habitat

- Mature tree loss should be avoided where possible. Trees provide a biodiversity benefit to a wide range of fauna and help to reduce air pollution and surface water run off.
- A root protection zone (RPZ) must be implemented around any retained trees which lie adjacent to or within the boundary of the proposed development site. British Standard BS 5837, *Trees in relation to design, demolition and construction - Recommendations* will be followed. Measures will include clear marking of the RPZ to guarantee no machinery is used or digging carried out in that area. This will ensure that there is no detrimental impact to the trees and the flora or fauna it supports.

- **Species**

- Careful consideration must be given to the use of lighting within the development site, as this can adversely affect the activity of a variety of fauna, particularly foraging bats, nesting birds and invertebrates. Light spillage into adjacent semi-natural habitats must be avoided and brightness kept to the lowest permissible level in the areas adjacent to such habitats. All lighting must meet recommendations in the BCT Guidance Note 08/23 Bats and Artificial Lighting at Night.
- A **reptile mitigation strategy** will be required to inform the development. Ideally the strategy will seek to retain the slow worm population within the current site boundary. This will require the retention of a portion of the site to be untouched by development works during construction. The site design will also need to demonstrate enhancement measures to ensure reptile species can recolonise the wider site post development completion. If this cannot be achieved, an off-site receptor site and translocation scheme will be required.
- The scrub and scattered trees within the site boundary have the potential for use by nesting birds. Any removal of scrub or tree habitat within the site must be completed outside of the bird nesting season of March to August inclusive. If this is not achievable

an ecologist must inspect any vegetation with the potential for birds to be present for active birds' nests prior to removal works beginning. If an active nest is identified a buffer zone of at least 5 m around the nest must be observed until the chicks have fledged. Only then can the vegetation be removed. Greater buffer zones around nests may be required depending on the species and habitat the nest is within.

- A pre-inspection check of all scrub habitat is recommended immediately prior to vegetation clearance works. Whilst the presence of badger within the site boundary is considered unlikely it cannot be completely ruled out. A pre-inspection check of vegetation immediately prior to clearance work will check for any mammal signs.
- Ideally all excavations within the site will be securely covered over if left unattended. Any excavations that have a depth in excess of 0.5 m and that are left open overnight will have a means of escape let for any mammals (e.g. hedgehog) that may fall into them. A wooden board or equivalent will be left from the bottom to the top of the hole at an angle no steeper than 45 °. This will allow any mammal to escape and avoid increased stress from being trapped.
- The creation of habitat corridors around the periphery of the development site must be considered. A sensitive site design which ensures plot boundaries are off set from natural vegetation would be beneficial to a range of wildlife and create a greener setting for the development. The sensitive management of buffer zones to ensure wilder, longer areas of habitat are created would benefit a range of wildlife.
- The development site has a large number of invertebrate records within close proximity. The site is also located within a B-Line network whose purpose is to create an 'insect pathway' through the countryside. Habitat compensation and enhancement measures will be required in order to retain the high levels of invertebrate interest within the development site and any off-site compensation area. Long term management of habitat created and retained within the development site and any off site compensation area will be required.
- An invasive non native species (INNS) strategy will be required to deal with Japanese knotweed present within the site boundary. Japanese knotweed will need to be controlled either by mechanical or chemical means to prevent further spread into the surrounding countryside. Any material from the plant must be chipped/burned on site or removed to a licensed landfill as controlled waste or spraying plants with herbicide and treating stumps to prevent regrowth.

5. Biodiversity Enhancements & Green Infrastructure

The Environment Act (Wales) 2016 places a duty on competent authorities to conserve and enhance biodiversity. Chapter 6 of Planning Policy Wales (version 12), paragraph 6.2.5 requires Green Infrastructure considerations to be included with all planning applications. Development proposals must detail how green infrastructure considerations which are proportionate to the scale and nature of the plans are being provided.

Green Infrastructure currently found within the site takes the form of open semi-improved grassland, scattered trees and stands of scrub habitat. Together these habitats form a structural mosaic likely to be used by a range of local more common wildlife.

General considerations to green infrastructure to be considered as part for the development include:

- Paragraph 6.4.42 of Planning Policy Wales (version 12) requires that at least 3 trees of a similar type and compensatory size are planted for every tree lost. The site layout should avoid tree loss where possible. If loss is unavoidable, space within the site boundary and development plans to allow a suitable amount of compensatory planting is required.
- Creating habitat connectivity around the site would be a positive step for biodiversity. Pulling plot boundaries away from the edge of the development site boundary and providing green areas around the periphery of the site that are managed to benefit wildlife can help wildlife continue to commute across the site.
- The use of soft landscaping to strengthen boundary features would be a welcome enhancement to the site. Tree and hedgerow planting along with long term management would help to create screening around individual units for privacy and also integrate the development into the landscape.

The Environment Act (Wales) 2016 places a duty on competent authorities such as Merthyr Tydfil County Borough Council to conserve and enhance biodiversity. The below bullet points are some simple measures that could be achieved to enhance the biodiversity of the site:

- The provision of integrated bird boxes within any new buildings created on site. At least 25% of new structures should include nesting provision for birds. A variety of bird boxes should be used but all boxes must be placed at least 2 m high from ground floor.
- The provision of integrated bat boxes within any new buildings created on site and five tree mounted bat boxes. At least 25% of new structures should include roosting

provision for bats. Integrated boxes are welcome but consideration to the creation of roosting provision with a roof should also be given. For example building roof spaces can be lined with a bitumen based roofing felt and suitable bat access points included to the space between the roofing felt and roof tiles.

- The use of native species within the soft landscaping works on the site. Suitable long term management of soft landscaping also helps ensure spaces are useful to wildlife. Long term wildlife friendly management measures will be required. Management measures will need long term funding and must reflect the different habits to be retained and created within the development site.
- All fencing across the site must be hedgehog friendly in design. A friendly design is considered to allow passage of small animals across the site. Close board or mesh fencing should provide either a continuous gap between the bottom of the fence and ground of approximately 13 cm or 13 cm by 13 cm gaps cut every 3 m along fencing.
- A reptile hibernacula can be created within the grounds of the development site using rubble and brash from on site clearance works. The hibernacula must at least measure 0.5 m in depth, 2 m wide and 2 m long each. It will be made by creating layers of wood, brash, rubble and soil. The hibernacula will create a mound approximately 0.3 m above ground level which will be covered over with soil and seeded using a native seed mix. A diagram of a Reptile Hibernacula is located in Appendix 6 for reference.
- The creation of a butterfly bank within the site boundary or any off site compensation site could be created to encourage invertebrate populations.

Appendix 1 – Plant Species Recorded

Common Name	Scientific Name
Ash	<i>Fraxinus excelsior</i>
Bamboo	<i>Bambusa vulgaris</i>
Birds foot trefoil	<i>Lotus corniculatus</i>
Blackthorn	<i>Prunus spinosa</i>
Bluebell sp.	<i>Hyacinthoides sp.</i>
Bracken	<i>Pteridium aquilinum</i>
Bramble	<i>Rubus fruticosus sp</i>
Broad leaved dock	<i>Rumex obtusifolius</i>
Brown Knapweed	<i>Centaurea jacea</i>
Caraway	<i>Carum carvi</i>
Cleavers	<i>Galium aparine</i>
Cock's-foot	<i>Dactylis glomerata</i>
Common bent	<i>Agrostis capillaris</i>
Common cats-ear	<i>Hypochaeris radicata</i>
Common chickweed	<i>Stellaria media</i>
Common mouse-ear	<i>Cerastium fontanum</i>
Common nettle	<i>Urtica dioica</i>
Common ragwort	<i>Senecio jacobaea</i>
Common sedge	<i>Carex nigra</i>
Common sorrel	<i>Rumex acetosa</i>
Common vetch	<i>Vicia sativa</i>
Creeping buttercup	<i>Ranunculus repens</i>
Creeping cinquefoil	<i>Creeping Cinquefoil</i>
Creeping thistle	<i>Cirsium arvense</i>
Cuckoo flower	<i>Cardamine pratensis</i>
Daisy	<i>Bellis perennis</i>
Dandelion	<i>Taraxacum lacistophyllum</i>
Devil's-bit scabious	<i>Succisa pratensis</i>
Dove's-foot crane's-bill	<i>Geranium molle</i>
Elder	<i>Sambucus nigra</i>
Fescue sp.	<i>Festuca sp.</i>
Field wood rush	<i>Luzula campestris</i>
Germander speedwell	<i>Veronica chamaedrys</i>
Goat willow	<i>Salix caprea</i>
Gorse	<i>Ulex europaeus</i>
Greater plantain	<i>Plantago major</i>
Grey willow	<i>Salix cinerea</i>
Hawthorn	<i>Crataegus monogyna</i>
Hazel	<i>Corylus avellana</i>
Hedge bindweed	<i>Calystegia sepium</i>
Hogweed	<i>Heracleum sphondylium</i>
Holly	<i>Ilex aquifolium</i>
Japanese knotweed	<i>Fallopia japonica</i>
Lesser trefoil	<i>Trifolium dubium</i>
Mare's-tail	<i>Hippurus vulgaris</i>
Meadow buttercup	<i>Ranunculus acris</i>
Meadow foxtail	<i>Alopecurus pratensis</i>

Mouse-ear-hawkweed	<i>Pilosella officinarum</i>
Pear sp.	<i>Pyrus sp.</i>
Pedunculate oak	<i>Quercus robur</i>
Red Clover	<i>Trifolium pratense</i>
Ribwort plantain	<i>Plantago lanceolata</i>
Rosebay willowherb	<i>Chamerion angustifolium</i>
Rowan	<i>Sorbus aucuparia</i>
Scots pine	<i>Pinus sylvestris</i>
Silver birch	<i>Betula pendula</i>
Smooth meadow-grass	<i>Poa pratensis</i>
Soapwort	<i>Saponaria officinalis</i>
Soft rush	<i>Juncus effusus</i>
Sweet vernal-grass	<i>Anthoxanthum odoratum</i>
Sycamore	<i>Acer pseudoplatanus</i>
Wild carrot	<i>Daucus carota</i>
Yellow iris	<i>Iris pseudacorus</i>
Yorkshire fog	<i>Holcus lanatus</i>

Appendix 2 – Site Photographs



Photo 1. View of site from west boundary.



Photo 2. View of grassland and scrub in northeast of site.



Photo 3. Gorse scrub within central area of site.



Photo 4. Semi-improved grassland and hardstanding car park in south of site.



Photo 5. Northern boundary of site. Bramble scrub.



Photo 6. Tall ruderal vegetation within the central area of the site.



Photo 7. Tree group within centre of site.



Photo 8. Tree group within centre of site.



Photo 9. Yellow iris patch in western area of site.



Photo 10. Bamboo stand in western area of site.



Photo 11. Rush patch in eastern area of site.



Photo 12. Japanese knotweed present in southeast of site.



Photo 13. Garages within northeast corner of site.



Photo 14. Garages within northeast corner of site
view of roofs.



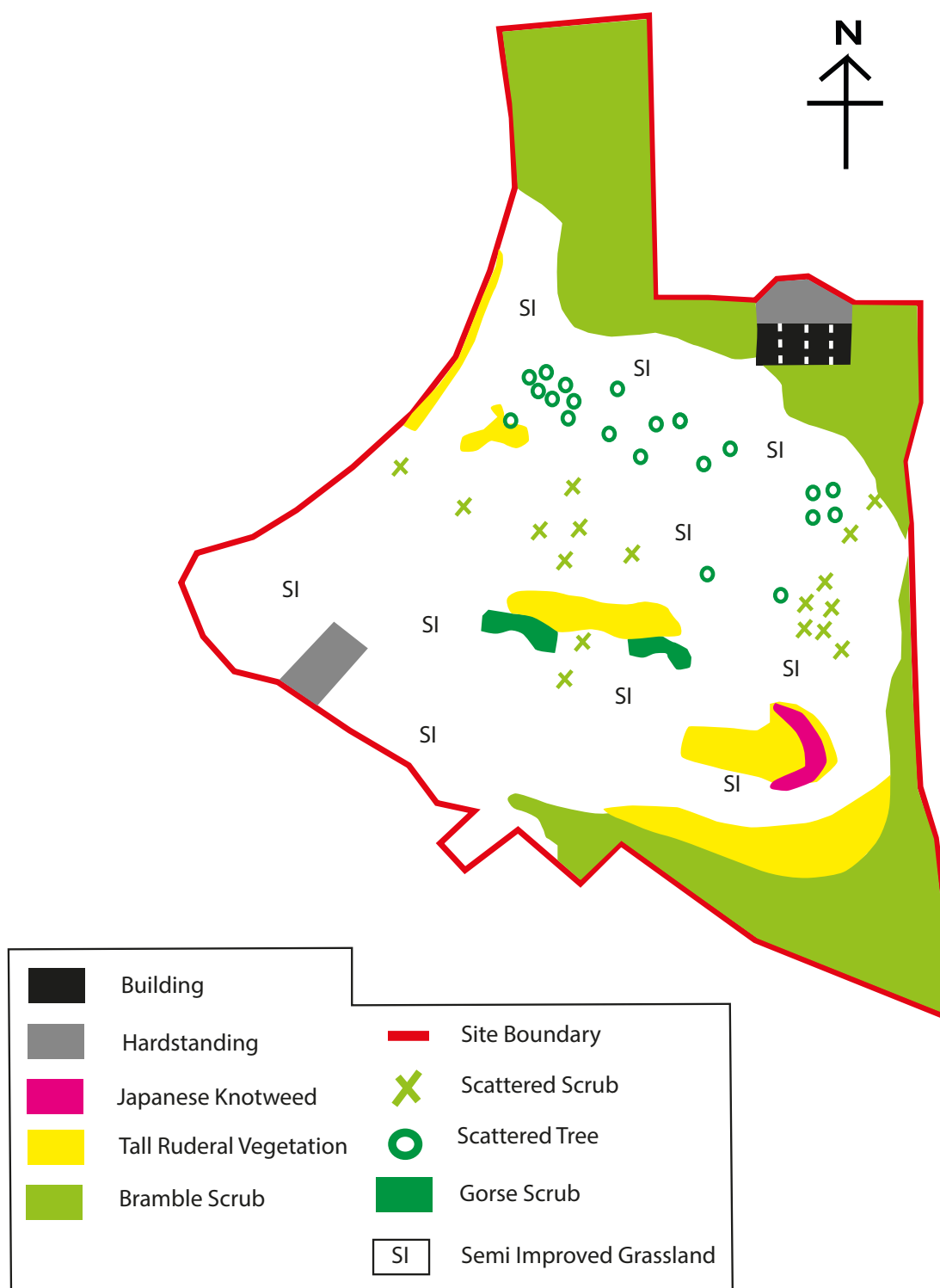
Photo 15. Garage within northeast corner of site.

Appendix 3 – Site Habitat Map

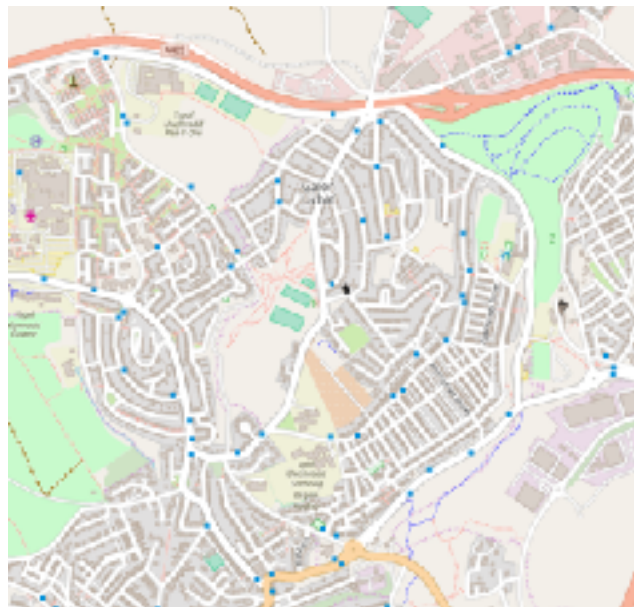
HAYDN TERRACE, MERTHYR TYDFIL

Habitat Map

May 2024



Appendix 4 - Aerial View of Site Location

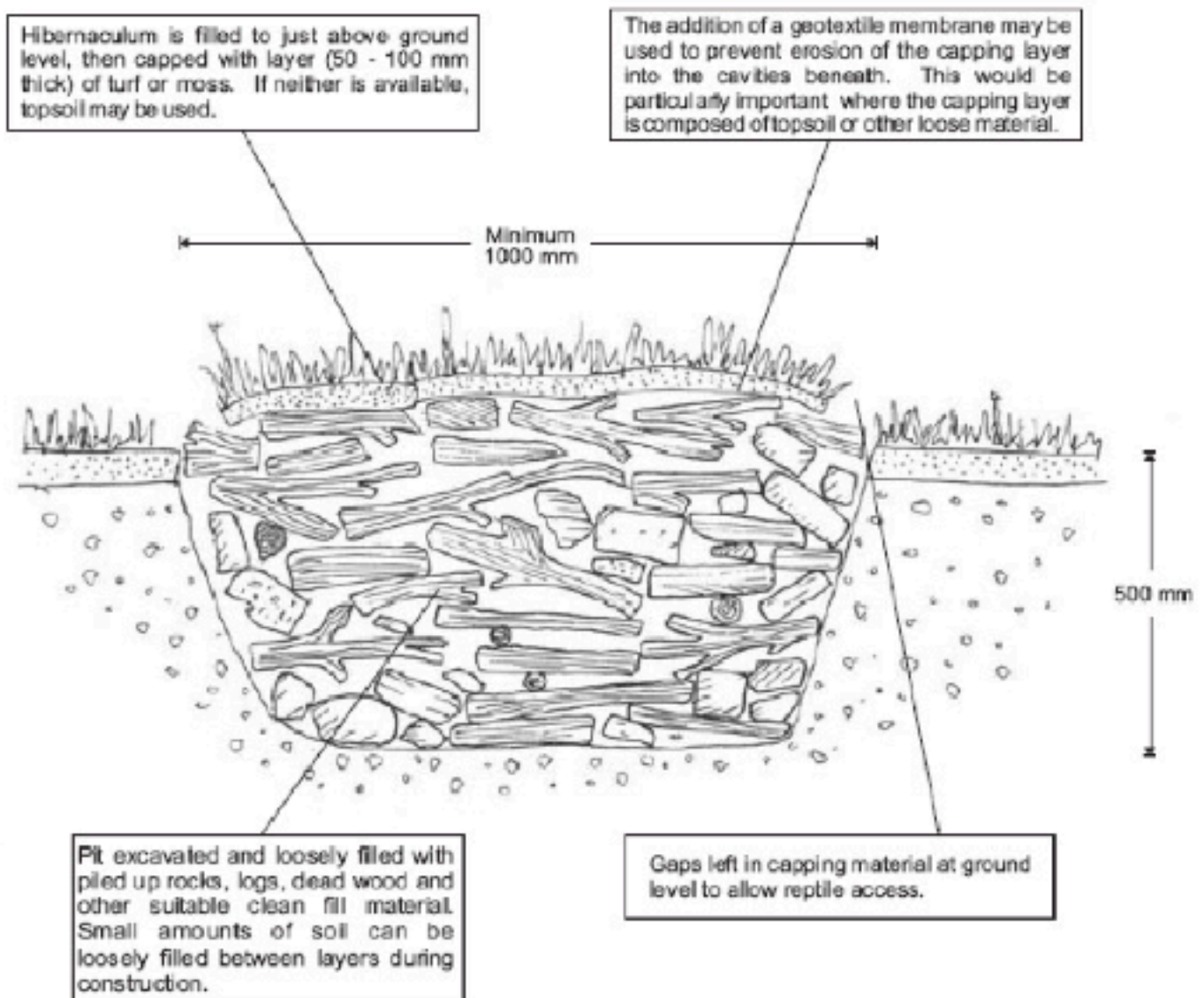


Appendix 5 – Invertebrate Habitat Potential Assessment

Table 1. Summary of the 11 habitat elements assessed by IHP survey.

Habitat element	No.	Comments
Decaying Wood	HE1	In all its forms; from decaying wood on/in large trees to woodland floor debris
Rotational Management	HE2	Planned or serendipitous; and whether for nature conservation or other purposes
Nectar Resources	HE3	As a proxy for nectar- and pollen resources, as assessment of pollen resources is impracticable on a walk-through survey
Wet Substrates	HE4	Including marginal, marshy, muddy and seasonally inundated habitats, as well as flushes
Open Water Habitats	HE5	The open water element of rivers, lakes, ponds, streams, ditches, etc.
Structural Patchwork	HE6	Habitat mosaics, including, but by no means restricted to open mosaic habitats on previously developed land
Still Air (S)	HE7	Suntraps and still-air microclimates in open situations; the term 'still air' is used in preference to 'wind breaks' as many rigid wind breaks are likely to produce turbulent air in their lee
Still Air (H)	HE8	Humid still-air microclimates in sheltered and shaded situations
Connectivity	HE9	Landscape-scale connectivity between the site and external habitats
Ecoclines	HE10	A graded transition between two or more broad habitats
Bare Earth	HE11	Unshaded bare or sparsely vegetated well-drained substrate, regardless of soil type

Appendix 6 - Reptile Hibernacula



Source: Highways Agency (2005) *Design Manual for Roads and Bridges: Volume 10 Section 4 Part 7 – Nature Conservation Advice In Relation to Roads and Reptiles*

Appendix 7. Legislation

The Habitats Directive (Directive 92/43/EEC) aims to *'contribute towards ensuring biodiversity through the conservation of natural habitats and of wild fauna and flora in the European territory of the Member States'*. The Directive requires the establishment and conservation of a network of sites within each member state which protect the rarest flora and fauna found across Europe. A number of species and habitats are listed in Annex 2 of the directive for which areas can be designated as a SAC. The aims of the Habitats Directive are transposed into British Law through the Conservation of Habitats and Species Regulations 2017.

The Wildlife and Countryside Act (1981) as amended provide the legislation framework and protection for SSSI. A SSSI is designated by a statutory nature conservation body such as Natural Resources Wales (NRW) for its make up of flora, fauna, geological and / or physiographical features. Each SSSI should have a citation which describes the site and its special features.

The Environment (Wales) Act 2016 is a wide reaching piece of legislation which seeks help improve the management of Wales' natural resources into the future. The Act sets out a Wales wide approach to planning and managing its natural resources at a national and local level in a sustainable manner. One main requirement for all public bodies, such as local councils, is to maintain and enhance biodiversity where possible within their duties.

The Merthyr Tydfil County Borough Council Nature Recovery Action Plan (2019-2014) replaces the previous Merthyr Tydfil Biodiversity Action Plan (2014-2019), and represents the S6 plan for Merthyr Tydfil County Borough, in accordance with Welsh Government Guidance: 'Environment (Wales) Act 2016 Part 1: Guidance for Section 6 – The Biodiversity and Resilience of Ecosystems Duty'. The objectives relating to development are as follows:

- 1) Engage and support participation and understanding to embed biodiversity throughout decision-making at all levels.
- 2) Safeguard species and habitats of principal importance and improve their management.
- 3) Increase the resilience of our natural environment by restoring degraded habitats and habitat creation.
- 4) Tackle key pressures on species and habitats.