

Preliminary Ecological Assessment



Project: Land off Hillcrest, Merthyr Tydfil

Instructed by: Merthyr Valley Homes

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1. Introduction

The applicant is seeking outline planning permission to develop a parcel of land off Hillcrest, Merthyr Tydfil. Indicative development proposals are to construct 20 houses and 6 flats with soft landscaping and utilities installed. The majority of the site is currently undeveloped with three garages in the north east of the site.

The site contains habitats including species poor semi-improved grassland, dense scrub, hardstanding, scattered trees, ruderal vegetation and buildings. 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 proposed development site lies in the north of Merthyr Tydfil and comprises a parcel of land off Hillcrest. The site slopes downwards from north to south, being steeper in the north of the site and flatter in the south and east. The site measures approximately 0.57ha and is centred at NGR SO 05613 07937. The northern, western and southern boundaries of the site lie adjacent to the rear gardens of residential dwellings of Mitchell Crescent, Tenth Avenue and Penybryn respectively. The eastern boundary lies adjacent to Hillcrest (the road). The immediate vicinity is dominated by residential dwellings and associated infrastructure. Approximately 20m from the north east corner of the site lies Hillcrest Park.

The wider landscape comprises several green spaces within urban areas, including Ifor Park and Galon Uchaf Park and additional areas woodland and grassland. The nearest major watercourses in the vicinity of the site, Taf Fechan, lies approximately 1.84km to the north west of the site, at its nearest point.

1.2 Survey Constraints

The site visit was undertaken in October which is at the end of the optimum time to undertake phase 1 habitat surveys, while it was late in the season it was possible to identify broad habitat types. All areas of the site were accessible.

1.3 Surveyor Experience

Vicky Hannaford completed the phase 1 survey of the site. Vicky is an ecologist with at least eight years' experience. She has worked in larger consultancies previously completing a wide range of flora and fauna surveys, completed professional training courses and attended informal botanical meetings to gain valuable knowledge. This experience allows Vicky to

assess and identify common habitats as per the JNCC Phase 1 Survey Guidelines. Vicky is also a licenced dormouse and great crested newt worker and holds licences from Natural Resources Wales for both species.

2. Desktop Study

A data search was undertaken via Aderyn (LERC Reference: 223-564) for the proposed development site and surrounding area. A 2km buffer zone was searched and records returned within 500m of site are noted below:

- Hedgehog – numerous records of hedgehog, the nearest of a live sighting approximately 96m away dated 2016.
- Bat, commuting and foraging – serotine approximately 277m away dated 2015. Unidentified bat and pipistrelle species also recorded within 500m.
- Several records of birds, including: - house sparrow, dunnock, starling, bullfinch and song thrush. Also included is Schedule 1 species - peregrine
- Cinnabar moth, approximately 301m, dated 2021
- Slow worm approximately 495m away to the north, found dead on the pavement.

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

- Small heath and wall (butterflies)
- Numerous records of birds, including: - curlew, lapwing, herring gull, kestrel., tree pipit, cuckoo, pied flycatcher and Dartford warbler. Schedule 1 species include kite, whimbrel, little ringed plover, barn owl,
- Common frog
- Bats, commuting foraging – common pipistrelle, soprano pipistrelle, myotis species, noctule, lesser horseshoe, greater horseshoe, Daubenton's,
- Common toad
- Brown long-eared bat – found on workshop floor
- Wasp – shimmering ruby tail
- Moths – Dark-barred twin-spot carpet, small phoenix, sallow, brindled beauty, garden tiger, shoulder-stripped wainscot, buff ermine, blood-vein, dusky thorn,
- Great crested newt
- Bluebell
- Butterfly – dingy skipper

- Palmate newt
- Badger
- Otter

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 national statutory protected site within 2km of the site, Cwm Taf Fechan Woodlands Site of Special Scientific Interest (SSSI). The site is located approximately 1.6km away and designated for the following species and habitat types: -

*Where the partially wooded valley of the Taf Fechan crosses the north crop Carboniferous Limestone. Mixed deciduous woodlands cover steep slopes and spoil from quarries with one of the few Glamorgan stations for *Gymnocarpium robertianum*. There are interesting plant communities in flushes around tufa springs and luxuriant growths of bryophytes in the splash zone of the river.*

This site is also designated as a Local Nature Reserve which affords local statutory protected site status.

Non-Statutory Protected Sites

There are 10 local non-statutory protected sites within 2km of the site. Nine are Sites of Importance for Nature Conservation (SINC), and 1 Wildlife Trust Reserve. The nearest such site is Bryniau SINC, located approximately 570m away to the north of the site. Details of the other SINC's and an approximate distance from the development site are listed below: -

- Morlais Hill (1145m)
- Gyrnos Wood (1147m)
- Cyfarthfa Park (1170m)
- Y Graig (1589m)
- Cwm Taf Fechan (1627m)
- Afon Taf (1635m)
- Blaenmorlais (1740m)

- Cwm Taf Fields & Cefn Coed Tip (1965m)

Cwm Taf Fechan is also designated as a Wildlife Trust Reserve, a local non-statutory protected site.

In addition, approximately 85.55% of the land within the 2km buffer zone is defined as a B-Line, including the proposed development site. 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 several areas of Ancient Semi Natural Woodland within 2km of the site. These woodlands have been identified as Priority Areas by Natural Resources Wales (NRW) as they comprise mostly broadleaved native trees and shrubs believed to have been in existence for over 400 years. The nearest Ancient Semi Natural Woodland lies approximately 1.27km away to the west of the site.

NRW have also highlighted a number of other Priority Areas within 2km of the site and include:

- Restored Ancient woodland – approximately 1.57km away to the west
- Ancient woodland site of unknown category – approximately 2km away to the north west

2.2 Potential Impacts to Protected Sites

Due to the small scale and localised nature of the proposed development, it is considered that there will be no negative impacts to any statutory protected sites within the 2km buffer zone.

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 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 18th October 2022. All areas of the site were accessible. 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.

Notable Plant Species

There are numerous records of bluebell (*Hyacinthoides non-scripta*), within 2km of the site, the nearest approximately 1013m away recorded at Bryniau cSINC. Bluebell is a Schedule 8 species under the amended Wildlife & Countryside Act 1981 and is protected from picking, uprooting or destruction and selling. Bluebell is not present within the site.

There are two **buildings** within the site; a single garage and a pair of semi-detached garages, both located in the north east of the site. Between the current garages there is evidence that a further 5 garages were also present but have now been demolished. Aerial photographs of the site, accessed via Google Earth, also confirm their previous existence.

There are two areas of **tarmac/hardstanding**, one in the south of the site, currently used as car parking and one in the north east of the site which leads off Hillcrest and acts as an access road to the garages. Bases of garages previously on the site are also present.

The site is dominated by **neutral semi-improved grassland**. The grassland has a tussocky appearance due to the abundance of cock's foot. Other grasses present include false oat grass, common bent, perennial rye grass and a species of fescue. Other flora species include yarrow, hogweed, red clover, common cat's ear, ribwort plantain, greater plantain, common sorrel, creeping cinquefoil, ragwort, knapweed. The greatest diversity in grassland species occurs on the flatter area in the south of the site.

In the south west of the site there is an area of dense **ruderal habitat**, with abundant rosebay willowherb, broad leaved dock, hogweed, nettle and cocksfoot. There is evidence of garden waste tipped here. There are two smaller areas of ruderal habitat, one in the north west corner of the site with rosebay willowherb and nettle and one near the bare earth track, dominated with nettle. There is also a small patch of rosebay willowherb behind the detached garage.

Along the western boundary, to the rear of the houses on Tenth Avenue, there is a narrow band of dense **bramble scrub**. Amongst the bramble another species was recorded thought to be raspberry, which may be a result of dumped garden waste.

Roughly in the middle of the site there are two **scattered trees**, both multi-stemmed species of willow. One of the trees has some fire damage near the base. A small field maple is also present in the north east corner of the site.

Leading from the car parking area in the south east of the site there is a **bare earth** track used for vehicular access the rear of one of the properties on Tenth Avenue and a single path leading to the rear of the adjacent property.

Along the northern boundary, to the rear of Mitchell Crescent, there are several **garden shrubs**, including a species of cotoneaster and a species of currant. Garden mint was also noted within the vicinity. The shrubs are possibly the result of garden waste put over the fence of the adjacent houses.

Across the site there is evidence of **fly tipping**, a mixture of household rubbish and garden waste.

Where the site **boundaries** lie to the rear of residential housing, the boundaries comprise a mixture of wooden fencing, post and wire fencing and brick/breeze block. Along Hillcrest and the north east corner, adjacent to Mitchells Crescent there is no delineation, the boundary is open.

3.2 Great Crested Newts

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 are several records of Great Crested Newt (GCN) within 2km of the site, the nearest approximately 1km away to the north of the site, dated May 2007 at Brynia, Morlais Hill.

No ponds are present within the proposed development site; although there may be nearby garden ponds which are not visible on aerial maps. The nearest waterbody lies approximately 980m away to the north at Bryniau. The scrub within the site has some potential to be used by GCN during the terrestrial phase of their lifecycle. However, the lack of nearby records and distance from the nearest potential breeding pond it is considered unlikely GCN are present within the site. **No further recommendations will be 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 are no records for dormouse within 2km of the site.

Habitats within the site are considered unsuitable for dormouse, there is just one area of scrub along the western boundary, which would be insufficient to support a population of dormice. In addition, the site is isolated from habitats which may be suitable for dormouse. Due to the lack of records and un-suitable habitat It is considered unlikely dormouse is present within the site. **No further recommendations will be 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 bats are also listed in section 7 of the Environment (Wales) Act 2016 which makes them a key species to sustain and improve biodiversity.

Trees

Trees within the site boundary were subject to ground level assessment for the likely potential presence for bats during the phase 1 survey. Any trees felt to have potential for roosting bats would be subject to a further detailed survey following current BCT Guidelines (2016).

The two willow trees within the proposed development site boundary are both multi-stemmed. There is no evidence of any gaps, cracks or splits which may be suitable for use by bats for roosting.

Buildings

There are three garages within the site boundary, one single detached garage, B1, and one pair of semi-detached garages, B2. The garages are located in the north east of the site.

Detached Garage B1

The detached garage is constructed from concrete panels with metal fascia boards and corrugated tin sheeting covering the roof. The door is a roll up and over door. Opportunities for bats to access the garage exist via gaps along the fascia boards, gaps between the corrugated roof sheets and wall tops to the front and rear of the garages and gaps along the top of the door. At the rear of the garage the corrugated roof sheets appeared to be sitting on top of a metal girder. There is likely no cavity wall.

Pair Semi-Detached Garages B2

The pair of semi-detached garages have rendered and pebble dashed walls, wooden fascias and corrugated tin sheeting for the roof. The doors are metal, and are also roll up and over type. As in the single detached garage there are gaps along the fascia boards, it was possible to reach up under the fascia and the roof sheeting appeared to be sat tight on the wall top. Gaps were also observed between the roof sheets and the wall tops at the front and rear of

the garages and above the door. There was evidence of cobwebbing along the gaps under the fascia boards. There is likely no cavity wall.

Internal inspections of the garages were not undertaken as the garages are currently in use by separate tenants.

The garages are considered to have negligible to low potential to provide roosting opportunities for bats. Whilst a number of potential access points into the building were noted given the construction and materials of each garage they are unlikely to be used frequently by bats as they temperatures will fluctuate. A single bat activity survey on such limited potential buildings is unlikely to find roosting use of the structures. In this instance it is suggested that each building is removed via a soft demolition under direct ecological supervision.

Consideration must be given to bats during proposed development works and post development within the site. **Recommendations with regard to bats and lighting are included in Section 4 of this report.**

3.5 Otters

The common 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 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 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.

There are 31 records for otter within 2km of the site, the nearest approximately 1.3km away to the north west of the site and is of a road mortality. Records are of field signs, live sightings and road traffic casualties, and are associated with the Rivers Taff and Taf Fechan and range from 1992 to 2021.

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. It is considered the areas of dense scrub habitat within the site

are not large enough to provide adequate cover for a holt and/or resting place, in addition the site is also heavily disturbed by humans. There are a number of physical barriers between the site and the nearby watercourses which would also deter otter from using the site. As such it is considered unlikely otter are present within the site. **No further recommendations will be made for otter.**

3.6 Badger

Badgers 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.

There are 2 records for the presence of badger within 2km of the proposed development site, the nearest approximately 1198m away to the north west of the site of a road mortality dated 2011. 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,

No evidence of the presence of badger, such as sett, latrine or digging, was noted within the proposed development site. Badgers favour a dry sloping site for digging preferably within woodland or even under a large hedgerow bank. Badgers are creatures of habit and tend to follow regular pathways between their foraging grounds, no such evidence was found within the site. There is limited suitable habitat within the site, there is no woodland or hedgerows and just a small band of dense scrub along the top of the slope on the western boundary.

Due to the lack of evidence and unsuitability of the habitat it is considered unlikely badger is present within the site. No further recommendations will be made for this species.

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.

Nesting opportunities occur in the dense bramble scrub and trees within the site. The site is also suitable for foraging opportunities.

Nesting opportunities occur in the trees and scrub within the site boundary. The trees, scrub and grassland also provide foraging habitat for local bird species. **Precautionary measures for loss of nesting bird habitat will need to be put in place. Consideration to the creation of foraging habitat as part of any set landscaping within the site must also be given.**

3.8 Reptiles and Amphibians

Reptile 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 also listed in section 7 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 7 of the Environment (Wales) Act 2016.

There are 28 records for reptiles including slow worm, 495m away dated 2018 and common lizard, 1293m away dated 2017. Common frog, common toad and palmate newt all been recorded approximately 688m, 760m and 1059m away respectively.

Reptiles prefer a mosaic of habitats with diverse vegetation structure creating open areas and nearby cover to provide protection from predators and the elements. The grassland,

scrub and ruderal habitats within the site provide suitable structure providing cover and foraging habitat while the bare earth provides basking opportunities. The fly tipped rubbish and garden waste across the site could also provide cover and hibernation opportunities. The site boundaries are a mixture of wooden panel and wire fencing allowing some movement across the site from adjacent gardens.

It is recommended that the presence of a low number of common reptile species is assumed within the site boundary. Reptile surveys are not recommended in this instance for a number of reasons. The site is subject to high levels of human disturbance and anti-social behaviour as demonstrated by footpaths and fly tipping. Reptile surveys in these situations are hampered by removal of mats which can skew the survey results. There is also concern for that any animals found to be using the mats by members of the public can be harmed.

Instead, a series of species deterrence measures are recommended in respect of reptiles as part of any future development works. It should be possible to temporarily push reptiles into adjacent gardens and possibly retain small portions of the site undisturbed during the development works. Measures to ensure reptiles are not harmed during work and that animals can recolonise the site once development has taken place will be required. The provision of enhancement measures suitable for reptiles within any future development designs will also be required. Further details can be found in Section 4 of this report.

3.9 Other Mammals

There are 31 records of hedgehog within 2km of the site, the nearest approximately 96m away to the north dated 2016 and is of a live sighting. The presence of hedgehog within the site cannot be ruled out at least on occasion. Hedgehog is listed in Section 7 of the Environment (Wales) Act 2016 as a living organism 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.

Other Section 7 species recorded include weasel recorded approximately 1828m away, although it is considered unlikely this species is present within the site.

3.10 Invertebrates

There numerous records of invertebrates within 2km of the site, the nearest and most recent is of a cinnabar moth, approximately 301m away to the south east of the site and dates from 2021.

The site was assessed for invertebrates using the Invertebrate Habitat Potential Assessment (IHPA) as found in CIEEM inpractice Issue 112, June 2021. The IHPA protocol has been produced to allow ecologists without entomological expertise to identify key habitats and

features likely to support important invertebrate assemblages. Full details of habitat elements, grades and assessment can be found in Appendix 7.

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.

The site lies within a B-Line, a non-statutory protected sites which aims 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. Recommendations will be made for the garden, SUDs and communal open space areas to be enhanced, particularly for species of invertebrate.

4. Recommendations and Mitigation

The applicant is seeking outline planning permission to develop a parcel of land off Hillcrest, Merthyr Tydfil. Indicative development proposals are to construct 20 houses and 6 flats with soft landscaping and utilities installed.

It is anticipated that all the habitats within the site will be lost. Recommendations for the site aim to ensure the proposed development does not have a negative impact on biodiversity. See details below:

- The garages within the site have negligible - low potential to be used by roosting bats. **It is recommended the garages are removed under direct ecological supervision and in stages.** Each building will be subject to an external and internal inspection prior to demolition, by a licenced bat ecologist. Following the internal and external inspections, if no evidence of bats is found the garages can then be demolished under the supervision of the licenced ecologist. The roofing sheets will be lifted by hand and inspected for the presence of bats. The internal structures such as supporting struts along the top of the garages will also be inspected and removed by hand. Once the supervising ecologist is satisfied there are no bats present within the garages they can then be demolished.
- If bats or evidence of the presence of bat use of any building is found all work will cease. Advice will be sought from NRW on how to proceed and advice may include that a development licence is sought from NRW prior to works re-commencing.
- The site is considered suitable for a small number of common reptile species to be present throughout the year. **A reptile mitigation strategy, which is agreed with the LPA ecologist, will be required to support the proposed development.** Measures suitable for reptiles must be included within the design to allow movement across the site post development. A reptile mitigation strategy should include, but not be limited to:
 - Habitat clearance measures such as sensitive timings of works and a two stage vegetation cut and destructive searching of roots if required.
 - Habitat clearance will aim to push any reptiles which may be present into the north and west of the site into the adjacent gardens.
 - Timings of works to avoid reptile hibernation period, November to March inclusive.
- Trees and scrub are to be retained where possible as they provide shelter and nesting opportunities for birds and small mammals.

- A root protection zone (RPZ) must be implemented around any retained trees within the site and any trees which lie adjacent to the boundaries 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.
- The scrub and mature trees have potential for use by nesting birds. Any vegetation removal must be completed outside of the bird nesting season of March to August inclusive. If this is not achievable an ecologist must inspect any scrub or ground 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 5m 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.
- Careful consideration must be given to the use of lighting within the developed site, as this can adversely affect activity by a variety of fauna, particularly foraging bats, nesting birds and invertebrates. Light spillage along the western boundary, to the rear of the houses, which is currently a dark corridor 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 08/18 Bats and artificial lighting in the UK document <https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/>
- Soft landscaping within the gardens, SUDs and communal areas will include the use of native species of plant, of local provenance (at least UK), particularly those plants suitable for pollinators and other invertebrates. Shrubs will also be included to provide nesting opportunities for house sparrows and dunnoek.

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 of varying design to be incorporated into the newly constructed dwellings within the development site. Boxes should be located as high as possible, i.e., as close to the eaves as possible.
- Bird boxes should be located on north and east elevations of buildings as high as possible, preferably at eaves level. Swift boxes are best placed on gable ends at least

5m above ground level. All bird boxes must have unobstructed access. When detailed plans for the site are finalised exact locations of bird boxes will be discussed.

- The provision of bat boxes, integrated into the newly constructed dwellings within the development site is recommended. Bat boxes are best located on south elevations of buildings at eaves level with unhindered access to boxes. Bat boxes will be located at least 2m away from windows and any external lighting. When detailed plans for the site are finalized exact locations of bat boxes will be discussed.
- 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.
- All fencing within the site will be hedgehog friendly in design. A friendly design is considered to allow passage of small animals across the site. It should provide either a continuous gap between the bottom of the fence and ground of at least 13cm or 13cm x 13cm gaps cut every 3m along fencing.

Appendix 1 – Plant Species Recorded

Species	Common Name
Trees & Scrub	
<i>Cotoneaster</i> sp	cotoneaster sp
<i>Ribes</i> sp	currant
<i>Rubus fruticosus</i> agg	bramble
<i>Rubus</i> sp	raspberry
<i>Salix</i> sp	willow sp.
Herbaceous Plants	
<i>Achillea millefolium</i>	yarrow
<i>Agrostis capillaris</i>	common bent
<i>Arrhenatherum elatius</i>	false oat-grass
<i>Centaurea nigra</i>	common knapweed
<i>Chamerion angustifolium</i>	rosebay willowherb
<i>Cirsium arvense</i>	creeping thistle
<i>Cirsium vulgare</i>	spear thistle
<i>Dactylis glomerata</i>	cock's-foot
<i>Heracleum sphondylium</i>	hogweed
<i>Hypochaeris radicata</i>	common cat's-ear
<i>Leucanthemum vulgare</i>	oxeye daisy
<i>Lolium perenne</i>	perennial rye-grass
<i>Plantago lanceolata</i>	ribwort plantain
<i>Plantago major</i>	greater plantain
<i>Potentilla reptans</i>	creeping cinquefoil
<i>Rumex acetosa</i>	common sorrel
<i>Rumex</i> sp	dock
<i>Senecio jacobaea</i>	common ragwort
<i>Sonchus asper</i>	prickly sow-thistle
<i>Trifolium pratense</i>	red clover
<i>Urtica dioica</i>	common nettle

Appendix 2 – Site Photographs



Site looking west



Site looking south



Dense ruderal habitat in south west corner



Site looking east



Site looking north



Site looking north east



Fly tipped rubbish amongst ruderal habitat



Scrub along west boundary



Shrubs along north boundary



Track from car park to rear of property on Tenth Avenue



Fly tipping under and adjacent to tree



Scattered Trees



Evidence of fire at base of tree



Evidence of fire in garssland

Garages



Garages in east of site - B2 and B1



Site of former garages



Detached garage B1



B1 - roofing sheet sitting on metal girder at rear



B1 - gap under fascia



B1 – gap above door



B2 – Pair semi detached garages



B2 – rear



B2 – gap under fascia with cobwebbing



B2 – gap under fascia



B2 – gaps above door



B2 – gaps above door



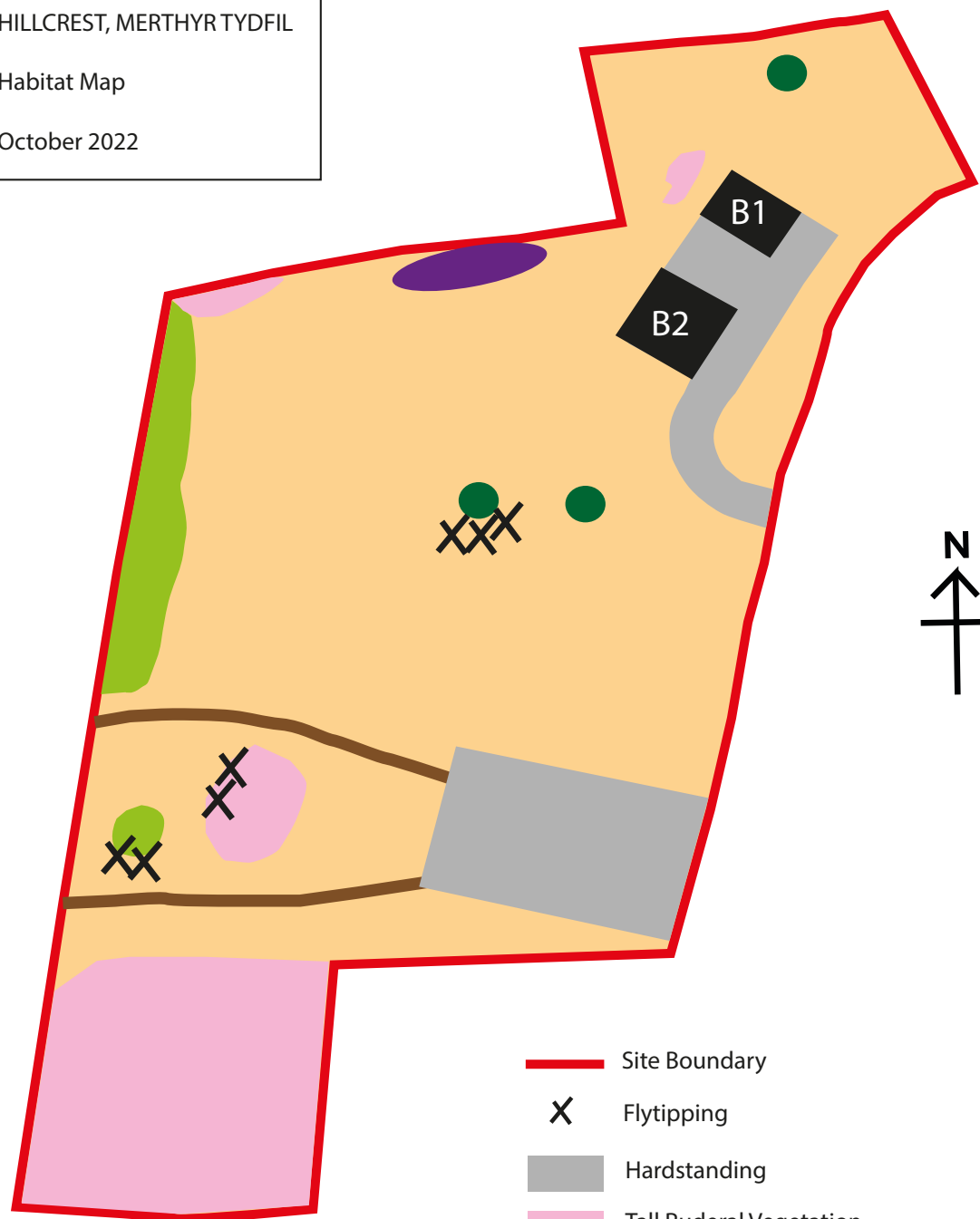
B1 & B2 showing roofs

Appendix 3– Site Habitat Map

HILLCREST, MERTHYR TYDFIL

Habitat Map

October 2022



-  Site Boundary
-  Flytipping
-  Hardstanding
-  Tall Ruderal Vegetation
-  Dense Bramble Scrub
-  Ornamental Shrubs
-  Building
-  Neutral Semi Improved Grassland
-  Bare Earth
-  Scattered Tree

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

Table 2: Grading system applied to habitat elements.

Grade	Description
Negligible/Absent (E)	Habitat element is absent or of insignificant (barely perceptible) quantity
Minor (D)	Habitat element is present but is insufficient quality to qualify as Moderate or above. For example, it may be of extremely limited extent, or very sparsely dispersed. Likely to support common and widespread, generalist species.
Moderate (C)	A clear example of the habitat element is present, but which does not qualify as Major. Likely to be of sufficient quality to support a characteristic invertebrate fauna.
Major (B)	Good quality examples of each habitat element which do not meet the criteria for Exceptional. Likely to be a predominant factor in supporting characteristic and specialised invertebrate assemblages. Considerations might include the extent, maturity and historic and current connectivity of the element.
Exceptional (A)	Very high-quality examples of the habitat element, including but not restricted to those of potential regional significance. This may be for reasons of intrinsic quality, rarity, vulnerability or the perceived importance of its position in the wider landscape.

Assessment 18.10.2022

Habitat Element	Grade
Decaying Wood – HE1	E – Negligible/Absent
Rotational Management – H2	E – Negligible/Absent
Nectar Resources – H3	D - Minor
Wet Substrates – H4	E – Negligible/Absent
Other Water Habitats – H5	E – Negligible/Absent
Structural Patchwork – H6	D – Minor
Still Air (S) – H7	D - Minor
Still Air (H) – H8	E – Negligible/Absent
Connectivity – H9	E – Negligible/Absent
Ecoclimes – H10	E – Negligible/Absent
Bare Earth – H11	D - Minor