

Preliminary Ecological Assessment



Project: Maesynant, Grove Park, Merthyr Tydfil

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1. Introduction

The applicant is seeking outline planning permission to develop a parcel of land adjacent to Maesynant, Grove Park, Merthyr Tydfil. The parcel of land already has outline planning permission however the start date for development is due to expire.

Proposals include the construction of three detached residential dwellings, with three garages, one detached garage and a pair of semi-detached garages. The site will also include a private drive and two areas of private open space.. The proposed site layout can be found in Drawing 03, dated December 2015, produced by Stephen George Architects.

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 comprises a parcel of land adjacent to the dwelling Maesynant. Aerial images, accessed via Google Earth, suggest that the site was formerly part of the garden belonging to Maesynant but is now a separate parcel of land. The aerial images also show the site as being cleared in 2019 and a private drive constructed. The site is roughly triangular in shape, measuring approximately 0.13ha and is centred at NGR SO 04877 06942. The site slopes gently downwards from north to south. The north west boundary lies adjacent to the garden of Maesynant, marked by a wooden fence, the north east boundary lies adjacent to a small open piece of land and is undefined. The eastern boundary, a concrete panel fence, lies adjacent to a public footpath. The south west boundary, a wooden fence, lies adjacent to King Edward Street and the small western boundary, also a wooden fence lies adjacent to Grove Park.

The OS map supplied with the data search shows a stream which previously ran through the site from the north east of the site to the south west and has now been culverted and is no longer visible (this is shown on the proposed site plan). The site is located in an urban environment in Merthyr Tydfil and lies approximately 650m to the north of Merthyr town and is surrounded by residential dwellings and its associated infrastructure.

The wider landscape comprises small pockets of woodland and open countryside. The nearest major watercourse, the River Taff, lies approximately 446m away to the south west of the site at its nearest point.

The site contains habitats including species poor semi-improved grassland, scattered scrub, bare ground, tarmac

1.2 Survey Constraints

The site visit was undertaken in March which is outside of the optimum time to undertake phase 1 habitat surveys, however 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 (Reference 0212-894) for the proposed development site and surrounding area. A 2km buffer zone was searched and records returned within 500m of site are noted below:

- Bat roost - Pipistrelle bat roost approximately 28m away in a house on King Edward Street, dated 2003
- Bat - unidentified bat found in a house approximately 110m away to the north
- Bat - unidentified pipistrelle species approximately 164m away to the south in Park Baptist Church, record gives location, no further details, dated 2004
- Several records of birds, including: - house sparrow, European herring gull, dunnoek, kestrel and Schedule 1 species, peregrine
- Bats, commuting and foraging – soprano pipistrelle, common pipistrelle, noctule
- Bat roost – common pipistrelle, lesser horseshoe and brown long eared, approximately 376m away to the south east, dated 2019
- Otter – field signs, approximately 453m away to the south west, 3 records dated 1992-2001
- Bat roost – common pipistrelle, approximately 453m away to the south, dated 2020
- Bat – unidentified bat, found in a hospital, approximately 478m way to the south east, dated 2005
- Hedgehog, approximately 487m away to the west

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

- Numerous records of Invertebrates including - shimmering ruby-tail, cinnabar moth, small phoenix, sallow, dusky thorn, blood vein, dark-barred twin-spot carpet, violet oil-beetle, ghost moth, buff ermine,
- Brown/sea trout, Atlantic salmon
- Numerous records of birds, including: -starling, song thrush, Black-headed gull, bullfinch, cuckoo linnet.... Also recorded are Schedule 1 species including hobby, redwing, red kite, kingfisher, goshawk
- Common frog

- Great crested newt
- Common toad
- Slow worm
- Palmate newt
- Badger
- Common lizard
- Grass snake

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 are two national statutory protected site within 2km of the site, both are Sites of Special Scientific Interest (SSSI):-

- Cwm Glo A Glyndyrys, approximately 1279m away to the south west of the site. *The site is of special interest for its extensive areas of marshy grassland, species-rich neutral grassland and acid grassland, and for the association of these habitats with others including woodland and heath. It is also of special interest for its outstandingly diverse assemblage of grassland fungi, including 32 species of waxcap Hygrocybe spp, making it one of the best sites in Britain.*
- Cwm Taf fechan Woodlands, approximately 1331m away to the north of the site. The site is of interest *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*

Cwm Taf Fechan Woodland is also designated as a Local Nature Reserve and is classed as a local statutory protected site.

Non-Statutory Protected Sites

There are 13 local non-statutory protected sites within 2km of the site. 12 are Sites of Importance for Nature Conservation (SINC), the nearest being Cyfarthfa Park which is located approximately 426m away to the north west of the site. Details of other SINC sites within the 2km buffer zone are detailed below: -

- Afon Taf (445m)
- Cwm Taf Fechan (693m)
- Cwm Taf Fields & Cefn Coed Tip (1029m)
- Cwm Glo (1175m)
- Cwm Taf Fawr (1210m)
- Y Graig (1418m)
- Bryniau (1633m)
- Rhydycar West (1666m)
- Gellideg North Fields (1685m)
- Gyrnos Wood (1734m)
- Cwm Ffrwd (1986m)

The other local non statutory protected site is a Wildlife Trust Reserve – Taf Fechan, located 1821m away.

In addition, approximately 72.19% 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 807m away to the north 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 454m away to the north west
- Ancient woodland site of unknown category – approximately 1900m away to the north west
- NRW Priority Area (Heathland and Grassland) – approximately 1250m away to the south 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 protected sites within the 2km buffer zone.

3. Phase 1 Survey

3.1 Habitats

A walkover survey of the site was completed on **15th March 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 666m away recorded within Cyfarthfa Park SINC. 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.

Records of other notable plant species include lesser butterfly-orchid (*Platanthera bifolia*), a species of eyebright (*Euphrasia officinalis subsp. pratensis*) and small-white orchid (*Pseudorchis albida*) all are Section 7 species 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. All three species have been recorded more than 500m away from the site.

Aerial imagery, accessed via Google Earth shows the site having been cleared of vegetation in 2019 and a **tarmac drive** constructed. The tarmac drive is located in the east of the site leading off King Edward Street in the south ending at the north eastern boundary of the site. A turning head off the drive is located adjacent to the northern end of the eastern boundary.

Vegetation to the west of the private drive comprises an area of **species poor semi-improved grassland**. Soft rush is the dominant species, with grasses such as Yorkshire fog, red fescue, perennial rye grass and a species of meadow grass. Floral species present include frequent creeping buttercup and broad-leaved dock, with occasional wavy bittercress, pendulous sedge, hairy tare, herb Robert, germander speedwell, creeping cinquefoil, cleavers, dandelion, spear thistle, a species of willowherb, and ribwort plantain. Adjacent to the northern boundary there is an area of **bare earth** with a small rubbish pile near the north west corner.

To the east of the private drive the habitat is a mosaic including grassland similar to that on the west of the site, **bare earth/gravel**. Moss is present on the bare ground/gravel with ephemeral/short perennial species also present including coltsfoot, a species of clover and small rosettes thought to be that of ox eye daisy.

Along the eastern and southern boundaries there is **scattered bramble scrub** with the occasional buddleia and tutsan. Ivy is present as ground cover amongst the scrub.

Materials left over from the construction of the private drive have been left scattered across the site, including plastic piping, a small pile of stones and general rubbish, wooden fence panels, pieces of wood and a builder's bag of chippings.

Approximately mid-way along the south boundary there are three manhole/inspection covers, thought possibly to be linked to the culverted stream.

The site boundaries are a mixture of **wooden fencing** and **concrete panel fencing**. The north boundary is wooden fencing and marks the boundary between the site and the adjacent dwelling, Maesynant. Due to the topography of the site the ground is slightly lower in the site than the adjoining garden. As such there is a small gap under the fencing which has been filled with rubble. The fencing runs for the majority of the north boundary but in the north east there is no physical boundary to the site. The wooden fencing continues along the west and south boundaries. Along the south boundary there is a gap in the fencing where the private drive meets King Edward Street, and a gap in the south east corner. The gaps are currently closed by heras fencing. The east boundary of the site comprises concrete panels which lies adjacent to a public footpath.

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 583m away, this record has given a four-figure grid reference and could be up to 1km away from the site, the record is dated 1966. The next nearest record for GCN is approximately 1375m away and dates from 1985.

No ponds are present within the proposed development site; the nearest waterbody lies approximately 898m away to the north west of the site within Cyfarthfa Park SINC. However, the site is surrounded by housing with gardens where ponds may be present, but not visible on aerial photographs. Habitats within the site have potential to be used by GCN during the terrestrial stage of their lifecycle. As such the presence of GCN cannot be ruled out entirely. Precautionary measures in respect of this species are recommended in Section 4 of this report.

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 are no trees or hedgerows which could provide suitable foodstuffs and nesting opportunities for such species. While there is some scattered bramble scrub it would be insufficient to support a population of dormouse.

Due to the lack of records and suitable habitat It is considered unlikely dormouse is present within the site. No further recommendations will be made for this species.

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.

The data search returned records of bat roosts within 500m of the site, the nearest approximately 24m away in a house in King Edward Street, which lies adjacent to the southern boundary of the site.

There are no buildings or trees within the site therefore there are no opportunities for bats to roost to be present within the site. However, due to the close proximity of recorded bat roosts it is likely the site is used for foraging purposes by bats. Tree lines located to the north of the site could also be used for commuting to the wider landscape.

Consideration must be given to bats during proposed development works and post development within the site. Recommendations with regard to 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 numerous records for otter within 2km of the site, the nearest approximately 453m away to the south west of the site and is of field signs around the River Taff, dating from 1992-2001. Otter records are associated with the River Taff, Cyfarthfa Leat, Taf Fechan River. The majority of the records are of field signs, with a few of road mortalities. The records date from between 1992 and 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 scattered scrub habitat within the site are not large enough to provide adequate cover for a holt and/or resting place. While the site is approximately 450m away from the River Taff there are a number of physical barriers between the river and the site which would 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 this species.

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 six records for the presence of badger within 2km of the proposed development site, the nearest approximately 1531m away to the east of the site along the A4060. 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,

The site slopes gently downwards from north to south. Due to the timing of the survey visibility across the site was good, with no evidence of the presence of badger, latrine or digging, or evidence of regular pathways, found within the proposed development site. The site is largely surrounded by residential development, along with the lack of nearby records it is considered unlikely badger are present within the site.

No further surveys or recommendations are made for badger.

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 scattered scrub within the site. Precautionary measures for nesting birds will need to be put in place before any vegetation clearance takes place and are included in the recommendation section of the report.

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. Our common native amphibians are only protected from sale.

There are two records for common lizard, one record 1487m away, the other 1537 m away dated 1990 and 1999 respectively. There is a record for grass snake 1572m away dated 1999.

There are no records of any other reptiles within 2km of the site. The lack of records is likely due to under recording rather than a lack of presence.

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, scattered scrub and ephemeral habitats within the site are diverse in structure providing cover and foraging habitat while the bare earth provides basking opportunities. The gap under the fence and rubble along the northern boundary has potential to be used for hibernation purposes, as do the discarded materials scattered across the site. While the site is in an urban environment, reptiles, particularly slow worm, are known to make use of garden environments. As such the presence of reptiles within the site cannot be ruled out entirely.

It is recommended that the presence of a low number of common reptile species is assumed within the site boundary. Measures must be taken to retain an area of the site undisturbed throughout any future construction works. Reptile surveys are not recommended in this instance as the site is considered to have low potential for use by reptiles. Instead, a series of species deterrence measures will be adequate in respect of reptiles as part of any future development works. 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 numerous records of hedgehog within 2km of the site, the nearest approximately 487m away dated 2017. 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.

3.10 Invertebrates

There are numerous records of invertebrates within 2km of the site, the nearest between 502 and 521m away in a garden in Gurnos and are dated between 2019 and 2021. Species recorded include shimmering ruby-tail a species of wasp, the rest are species of moth and include cinnabar, small phoenix, fallow, dusky thorn, blood vein and dark-barred twin-spot carpet.

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 and grades can be found in Appendix 7.

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	E – Negligible/Absent
Still Air (S) – H7	D - Minor
Still Air (H) – H8	E – Negligible/Absent
Connectivity – H9	E – Negligible/Absent
Ecoclines – H10	E – Negligible/Absent
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.

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. The areas of private open space within the proposed development site are relatively small. However, recommendations will be made for these areas to be enhanced, particularly for species of invertebrate.

4. Recommendations and Mitigation

It is proposed to develop the site with the construction of three detached residential dwellings, a single detached garage and a pair of semi-detached garages and two small areas of private open space. A private drive with a turning head has already been put in place. Details of the plans for the site can be found in Drawing 03, dated December 2015, produced by Stephen George Architects.

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 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 should 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 east of the site into the areas proposed for the open space and garage 3, which will be developed as phase 2 of the development.
 - Timings of works to avoid reptile hibernation period, November to March inclusive.
- The presence of great crested newt within the proposed development site cannot be ruled out. Precautionary measures during vegetation clearance are recommended for this species, i.e., a two stage cut of the vegetation as indicated for reptiles above. GCN can be included in the reptile mitigation strategy above.
- The scattered scrub has potential for use by nesting birds as does the grassland area. 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 into the tree line adjacent to the north east of the site 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 areas of private open space will include the use of native species of plant, of local provenance (at least UK), particularly those plants suitable for pollinators.
- No night time working will be permitted to prevent incidental light spillage onto retained vegetation and habitats where nocturnal species may use at night. No work between the hours of 7pm and 7am which requires the use of artificial lighting will be allowed.
- All machinery and construction materials will be kept within a securely fenced and locked construction compound overnight. This will reduce the potential for mammals to shelter in any materials or machinery that could harm them.
- Ideally all excavations within the site will be securely covered over if left unattended. Any excavations that have a depth in excess of 0.5m and that are left open overnight will have a means of escape left for any mammals (e.g. badger, 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 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 three 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.
- 2 x Vivara Pro WoodStone House Sparrow Nest Box (single chamber) and 1 x Ibstock Eco-habitat for Swifts are recommended, the locations are detailed below: -

- 1 x Vivara Pro WoodStone House Sparrow Nest Box (single chamber) on the north end of the north east elevation (rear) of dwelling 1
- 1 x Vivara Pro WoodStone House Sparrow Nest Box (single chamber) on the north east elevation (rear) of building 2
- 1x Ibstock Eco-habitat for Swifts on the north east elevation of building 3
- The provision of three bat boxes, integrated 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. Ibstock Enclosed Bat Box 'C' (or similar design) are recommended, one box to be integrated into each of the new residential dwellings, located as follows: -
 - 1 x Ibstock Enclosed Bat Box 'C' on the south end of the north east elevation (rear) of dwelling 1
 - 1 x Ibstock Enclosed Bat Box 'C' on the south west elevation (front) of dwelling 2
 - 1 x Ibstock Enclosed Bat Box 'C' on the south east elevation (side) of dwelling 3

Examples of bat and bird boxes can be found in Appendix 5, proposed locations of bat and bird boxes can be found in Appendix 6.

- 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 at the base of fencing.

Appendix 1 – Plant Species Recorded

Species	Common Name
Trees & Scrub	
<i>Buddleja davidii</i>	buddleia
<i>Rubus fruticosus</i> agg	bramble
Herbaceous Plants	
<i>Bellis perennis</i>	daisy
<i>Cardamine flexuosa</i>	wavy bitter-cress
<i>Carex pendula</i>	pendulous sedge
<i>Cirsium vulgare</i>	spear thistle
<i>Dactylis glomerata</i>	cock's-foot
<i>Epilobium</i> sp	willowherb
<i>Festuca rubra</i>	red fescue
<i>Galium aparine</i>	cleavers
<i>Geranium robertianum</i>	herb Robert
<i>Hedera helix</i>	ivy
<i>Holcus lanatus</i>	yorkshire fog
<i>Hypericum androsaemum</i>	tutsan
<i>Juncus effusus</i>	soft rush
<i>Leucanthemum vulgare</i>	oxeye daisy
<i>Lolium perenne</i>	perennial rye-grass
<i>Plantago lanceolata</i>	ribwort plantain
<i>Poa</i> sp	meadow grass
<i>Potentilla reptans</i>	creeping cinquefoil
<i>Ranunculus repens</i>	creeping buttercup
<i>Rumex obtusifolius</i>	broad-leaved dock
<i>Tanacetum parthenium</i>	feverfew
<i>Taraxacum officinalis</i> agg	dandelion
<i>Trifolium</i> sp	clover
<i>Tussilago farfara</i>	colt's-foot
<i>Veronica chamaedrys</i>	germander speedwell
<i>Vicia hirsuta</i>	hairy tare

Appendix 2 – Site Photographs

Habitats and Features in East of Site



Private drive in east of site, looking north



Turning head in north east of site



Land to east of private drive, looking north and east



Scrub and rubbish in south east corner



Private drive looking south



Colt's-foot adjacent to turning head



Inspection covers



Inspection cover

Habitats and Features in West of Site



Site looking west along north west boundary



Gap under north west boundary fence



Earth bank and rubbish near north west corner



Site looking north towards Maesynant



Site looking east across grassland

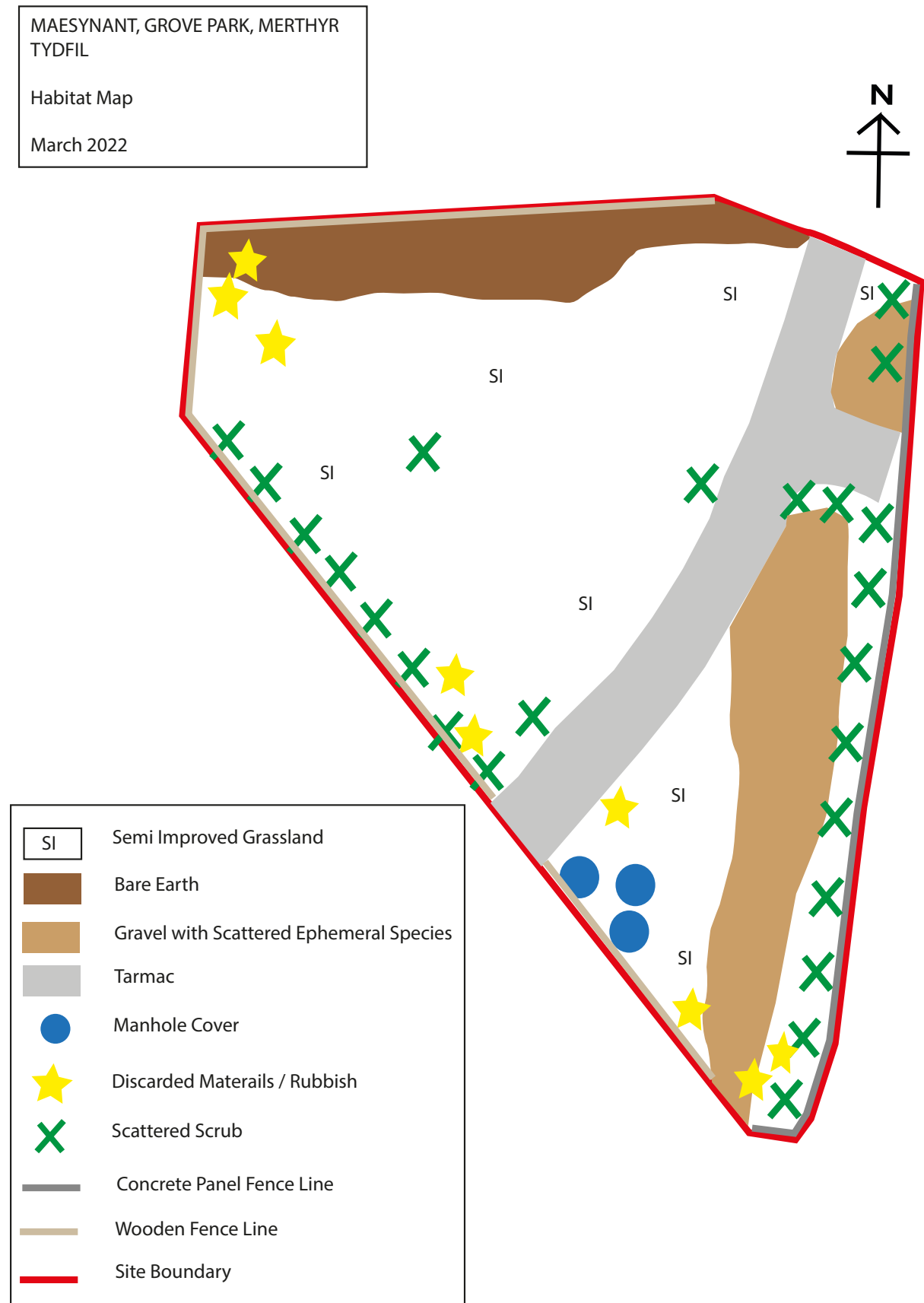


Site looking west



Discarded fence panel near south boundary

Appendix 3– Site Habitat Map



Appendix 4 - Aerial View of Site Location



Appendix 5 – Examples of bat and bird boxes



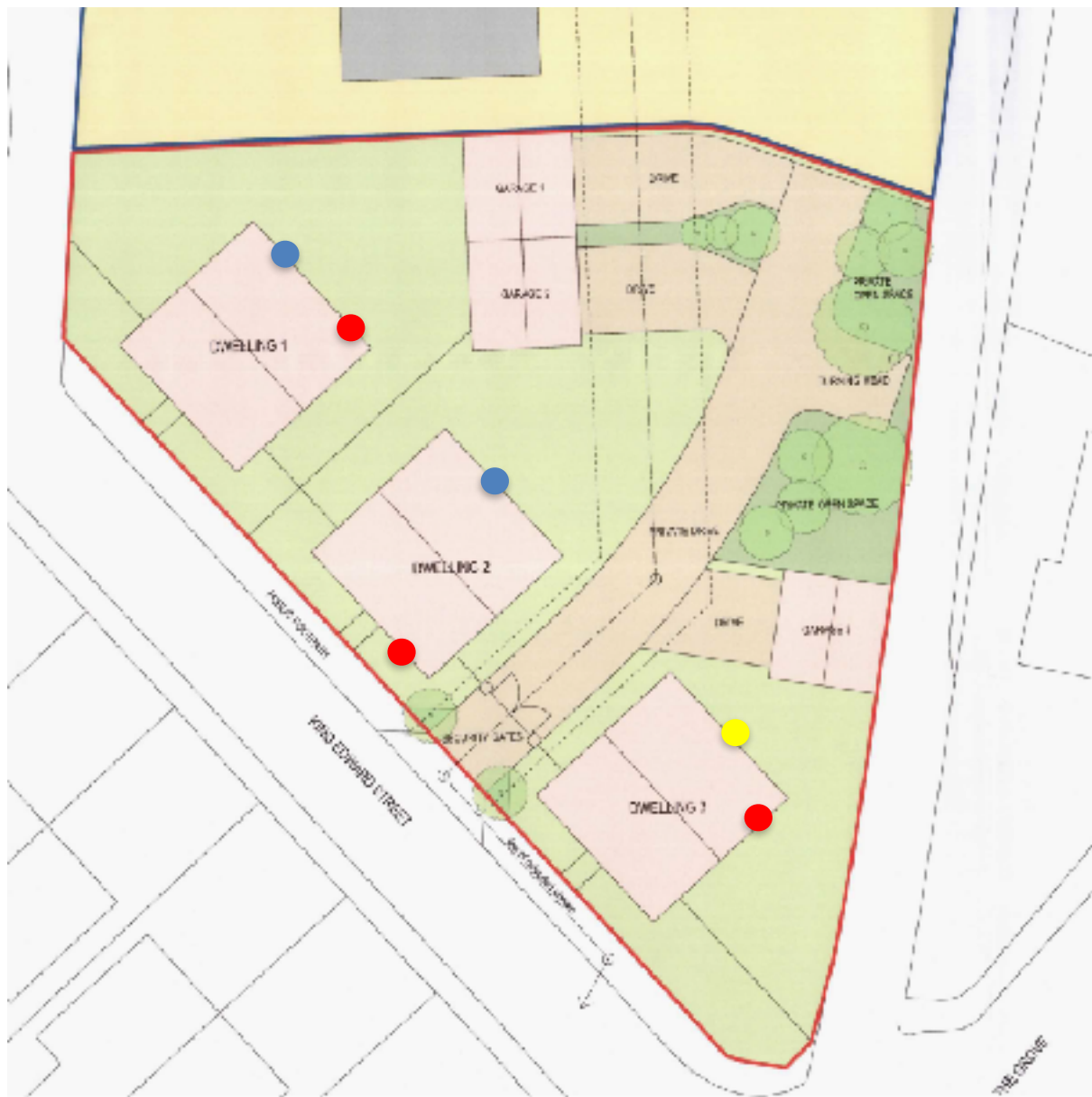
Ibstock Eco-habitat for Swifts

Vivara Pro WoodStone House Sparrow Nest Box –
single chamber



Ibstock Enclosed Bat Box 'C'

Appendix 6 – Proposed Location of Bat and Bird Boxes



Proposed Location of Ibstock Enclosed Bat Box 'C' ●

Proposed Location of Vivara Pro WoodStone House Sparrow Nest Box – single chamber ●

Proposed Location of Ibstock Eco-habitat for Swifts ●

Appendix 7 – 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.