

Ecological Impact Assessment



Project: Land to the North of Goitre Lane, Gurnos, Merthyr
Tydfil

Instructed by: Morgan Sindall Ltd

Reported by: Ecological Services Ltd
10 Mount Pleasant, Llanelly Hill, Abergavenny, Monmouth NP7 0NT
Reported by

Author	Checked by	Date	Version
Ash Harris	Beth Lewis	22nd April 2024	V.2

Contents

1. Introduction

- 1.1 Site Description
- 1.2 Surveyor Experience

2. Legislation & Planning Policy

- 2.1 Habitat Legislation
- 2.2 Species Legislation
- 2.3 Planning Policy

3. Preliminary Ecological Assessment

- 3.1 Desktop Survey
- 3.2 Previous Ecological Survey Work
- 3.3 Likely Significant Effects

4. Impact Assessment

- 4.1 Ecological Feature - Bats
- 4.2 Ecological Feature - Nesting Birds
- 4.3 Ecological Feature – Badger
- 4.4 Ecological Feature – Herptiles
- 4.5 Ecological Feature – Invertebrates
- 4.6 Ecological Feature - Habitat Loss

5. Enhancement Measures

- 5.1 Provision of Bat Nesting Opportunities
- 5.2 Provision of Bird Roosting Opportunities
- 5.3 Reptile Hibernacula
- 5.4 Fencing
- 5.5 Long Term Habitat Management

6. Management Responsibilities

Appendix

Development Site Boundary

Habitat Map

Reptile Hibernacula

1. Introduction

The applicant is seeking permission to develop a parcel of land adjacent to Goitre Lane, Merthyr Tydfil. The site is located on the northern outskirts of Merthyr Tydfil town in the county borough of Merthyr Tydfil. Current proposals include the construction of a new primary school and associated hardstanding and playing areas to be constructed within the grassland plateau on site. The proposed development site is centred at NGR SO 04958 08246.

Site visits to undertake ecological assessments of a wider parcel of land, encompassing the proposed development site, were undertaken by in 2021, 2022 and 2023 by Ecological Services Ltd. Since the initial wider ecological assessments, the scope of development work being progressed has been reduced to encompass the land within the new Goitre School site only, a site boundary is provided in Appendix 1. The land within the proposed development site contains marshy grassland, neutral semi-improved grassland and scattered trees.

In order to undertake a full appraisal of the proposed development and the potential impacts and significance of impacts upon the habitats and species within the development site and adjacent habitats, an Ecological Impact Assessment (EclA) has been undertaken. An EclA helps provide a clear and methodical way to identify, quantify and evaluate the potential significant effects of a proposed plan or project.

Supporting documents and reports that provide information referred to within this report are listed below:

- *'Bats & Trees Survey Report; Goetre Field School, Merthyr Tydfil'* V2 dated 1st March 2024 by Ecological Services Ltd
- *'Updated Preliminary Ecological Assessment; Goitre Field School'* V3 dated 13th December 2023
- *'Reptile Survey Report; Goitre Field School, Merthyr Tydfil'* V3 dated 13th December 2023
- *'Invertebrate Survey Report; Goetre Field - Merthyr'*) Christian Owen Bio-Surveys (dated October 2022)
- *'Arboricultural Report Including Tree Survey Data & Tree Constraints Plan, Arboricultural Impact Assessment, Tree Protection Plan and Arboricultural Method Statement'* dated 8th April 2024 by ArbTS
- 26CB01-SBC-00-XX-DR-L-0400 rev P02 *'Strategic Soft Landscape Plan'* by Soltys Brewster
- 26CB01-SBC-00-XX-DR-L-0402 rev P03 *'West off-site Habitat Compensation Sketch Design'* by Soltys Brewster
- 26CB01-SBC-00-XX-DR-L-0403 rev P02 *'South off-site Habitat Compensation Sketch Design'* by Soltys Brewster

1.1 Site Description

The site is roughly square in shape; the southern section is flat while the northerly section slopes downwards from north to south. The site lies adjacent to Pen Y Dre School in the north and Goitre Lane in the south and west, beyond which lies the Gurnos Estate. To the east lies Galon Uchaf Housing Estate. There are pathways within the site used by the general public, with evidence of fly-tipping in the east of the site.

In the south, south east and south west the wider landscape is dominated by residential dwellings and associated infrastructure with the town of Merthyr Tydfil approximately 1.8km to the south of the site. To the north just beyond Pen Y Dre School lies the A465 dual carriageway. The landscape beyond comprises of open countryside with hedge bound fields, small areas of woodland and open moorland.

The nearest watercourse, Taf Fechan, lies approximately 1km away to the north west at its nearest point. The River Taff lies approximately 1.6km away to the south west at the confluence of the Taf Fechan and Taf Fawr.

1.2 Surveyor Experience

Aislinn Harris is a full member of Chartered Institute of Ecology and Environmental Management (CIEEM). Aislinn is an ecologist with 14 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). Aislinn is a NRW licenced bat, Great crested newt and dormouse ecologist with a wide variety of experience undertaking ecological surveys.

2. Legislation & Planning Policy

2.1 Habitat 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 to 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.

2.2 Species Legislation

Great Crested Newt

Great crested newts (*Triturus cristatus*) are a European protected species and are protected under the Conservation of Habitats and Species Regulation 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 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.

Bats

All British bats are a European protected species and are protected under the Conservation of Habitats and Species Regulation 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, beechstein, 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.

Otter

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 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.

Nesting 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.

Reptiles

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. In Wales sand lizard, smooth snake, adder, grass snake, slow worm and common lizard are listed in section 7 of the Environment (Wales) Act 2016 which makes them a key species to sustain and improve biodiversity.

Dormice

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 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 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.

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.

2.3 Planning Policy

Planning Policy Wales (PPW), Edition 12 published February 2024 provides national policy relating to Sustainability and Ecology. PPW sets out the land use planning policies of the Welsh Government and is supplemented by a series of Technical Advice Notes (TANs).

Chapter 6 of PPW contains the following policies relating to ecology and biodiversity:

- 6.2 Green Infrastructure;
- 6.4 Biodiversity and Ecological Networks.

Technical Advice Note (TAN) 5

TAN 5 (Welsh Government, 2009) specifically provides advice about how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation. The TAN provides advice for local planning authorities on the key principles of positive planning for nature conservation; nature conservation and Local Development Plans; nature conservation in development management procedures; development affecting protected internationally and nationally designated sites and habitats; and development affecting protected and priority habitats and species.

Under Section 2.4 within the TAN 5, 'when deciding planning applications that may affect nature conservation local planning authorities should:

- Pay particular attention to the principles of sustainable development, including respect for environmental limits, applying the precautionary principle, using scientific knowledge to aid decision making and taking account of the full range of costs and benefits in a long term perspective;
- Contribute to the protection and improvement of the environment, so as to improve the quality of life and protect local and global ecosystems, seeking to avoid irreversible harmful effects on the natural environment;
- Promote the conservation and enhancement of statutorily designated areas and undeveloped coast;

- Ensure that appropriate weight is attached to designated sites of international, national and local importance;
- Protect wildlife and natural features in the wider environment, with appropriate weight attached to priority habitats and species in Biodiversity Action Plans;
- Ensure that all material considerations are taken into account and decisions are informed by adequate information about the potential effects of development on nature conservation;
- Ensure that the range and population of protected species is sustained;
- Adopt a step-wise approach to avoid harm to nature conservation, minimise unavoidable harm by mitigation measures, offset residual harm by compensation measures and look for new opportunities to enhance nature conservation; where there may be significant harmful effects local planning authorities will need to be satisfied that any reasonable alternative sites that would result in less or no harm have been fully considered.

3. Preliminary Ecological Assessment

3.1 Desktop Survey

Statutory Designations

There is one statutory protected sites within 2km of the site, Cwm Taf Fechan Woodlands Site of Special Scientific Interest (SSSI) which is also designated as a Local Nature Reserve (local statutory protected site), located approximately 733m away to the north west of the site. The site is semi-natural broadleaved woodland; the exact designation details are not available.

Non-Statutory Designations

There are 11 local non-statutory protected sites within 2km of the site. 12 are Sites of Importance for Nature Conservation (SINCs) and one Wildlife Trust Reserve. The nearest SINC, Bryniau lies approximately 254m away to the north east of the site. Details of other SINC sites within 2km and an approximate distance from the development site are listed below:

- Gurnos Wood (295m)
- Morlais Hill (667m)
- Cwm Taf Fechan (730m), this site is also designated as a Wildlife Trust Reserve
- Y Graig (768m)
- Cyfarthfa Park (704m)
- Cilsanws Common South (1430m)
- Afon Taf (1520m)
- Cwm Taf Fawr (1540m)
- Cwm Taf Fields & Cefn Coed Tip (1580m)
- Blaenmorlais (1840m)

In addition approximately 80.57% of the land within the 2km buffer zone is defined as a B-Line, including the site itself. 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 15 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 288m 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
- Ancient Woodland Site of Unknown Category

3.2 Previous Ecological Survey Work

Preliminary Ecological Survey - 2021

The wider site was previously subject to a Preliminary Ecological Assessment in September 2021 by Ecological Services. The extent of the initial survey area is shown within the habitat map located within Appendix 2. Habitats within the site comprise semi-improved grassland, marshy grassland, scattered trees, a line of trees, woody scrub, bramble scrub, stream and Japanese knotweed.

A data search via Aderyn (Reference DERF 0212-470) was undertaken at this time. No records were returned for the site itself, the nearest record being for badger, approximately 320 m away to the north west of the site, as road kill on the A465.

The site was assessed as being suitable to support a population of reptiles and the presence of marsh fritillary butterfly could not be ruled out within the site. Further survey work for reptiles and invertebrates were recommended.

Ecological Appraisal - 2022

A further Ecological Appraisal was undertaken in July 2022, by Ecological Services Ltd. Habitats were found to be the same as in the previous survey in 2021. Further survey work was recommended and included a reptile survey and invertebrate survey.

Invertebrate Survey 2022

An invertebrate survey was undertaken by Christian Owen Bio-Surveys in August 2022. A single prolonged daytime visit on 4th August 2022, during suitable weather conditions, included a variety of sampling techniques such as aerial netting, hand searching, suction sampling, sweep netting and visual searching. This survey targeted Araneae (spiders), Coleoptera (beetles), Hemiptera (true bugs) and Hymenoptera (bees, wasps, ants etc). A further survey, undertaken on 30th August 2022 concentrated on Marsh Fritillary, undertaking a larval web search.

A total of 228 invertebrate species were recorded at Goitre Field, with 36 of these species deemed to be of 'conservation importance' -

- 2 x Section 7 species - research only;
- 3 x Nationally Scarce (NS) or Notable (NA or Nb) species ; and
- 31 x Nationally/Wales Local species (including 1 new VC41 record?)

The results indicate that the site as a whole is an important site for a number of scarce and local invertebrate species and clearly provides suitable habitats for a wide range of invertebrates. The survey found that the conservation value to invertebrates is not evenly distributed across the site, with the areas considered to be of greatest conservation value to invertebrates identified in the map below, taken from Invertebrate Survey Report, dated October 2022, v1, prepared by Christian Owen Bio-Surveys.



Map 4: An aerial view showing key habitats and areas considered to be of greatest conservation value to invertebrates at Goitre Field (outlined in black).
Image © Google 2022.

Reptile Survey - 2022

A series of reptile surveys were undertaken during August/September 2022, by Ecological Services Ltd. The reptile surveys focused on land within the northern half of the site only.

No reptiles were found during any of the checks, however a precautionary approach will need to be adopted as a number of refugia were lost during the course of the survey. Horses are known to graze the fields and there are a number of pathways across the site, used by local residents, with evidence of some anti-social behaviour present which may well have contributed to the loss of reptile refugia.

Recommendations were made for the precautionary approach to clearing vegetation across the site.

Preliminary Ecological Survey - 2023

Vicky Hannaford and Lee Gregory from Ecological Services visited the site on 12th July 2023 to re-assess the quality of the habitats within the site. Again this site visit covered the land within the habitat map in Appendix 2 which is a wider site boundary than the current development site. During the 2023 visit, evidence of exploratory groundworks across the site and a small amount of site clearance along the north western boundary within Pen-Y Dre High School (the school's southern boundary) were noted.

Habitats within the wider site and development site were considered to be broadly the same as previous visits. The site is dominated by grassland, a mixture of species rich neutral grassland and species rich marshy grassland, the two often overlapping. Species rich neutral semi-improved grassland is the most dominant grassland and occurs across the site and covers the periphery of the southern and northern plateau. Marshy grassland is present to the north west of the wider site and within the southern plateau. Some areas of marshy grassland were dominated by rush species (soft rush *Juncus effusus*), however, smaller patches of the marshy grassland had a higher species diversity.

Scattered native trees, small tree groups and dense scrub stands were noted across the wider site. Scattered stands of Japanese knotweed were also noted.

Reptile Survey - 2023

After consultation with the Local Planning Authority an updated reptile survey covering the entire development boundary has been requested. A reptile refugia survey of all land within the wider site boundary (site boundary is detailed in Appendix 2) was completed by Ecological Services Ltd.

No reptiles were found during any of the checks, however a precautionary approach will need to be adopted. Although the habitats within the site boundary are suitable for reptile use, given the negative survey results from 2022 and 2023 it is considered that a low density population of reptiles may be present. The site is well used by locals and tampering with reptile refugia skewing the survey results cannot be ruled out.

Recommendations were made for the precautionary approach to clearing vegetation across the site.

Bats & Trees Survey - 2024

T1 - T5 and G1 - G6 were subject to a Ground Level Tree Assessment (GLTA) on the 12th February 2024. The surveyors stood at the base of each tree and visually inspected it using

close focusing binoculars. The tree was categorised into NONE (No potential roost features (PRFs) in the tree), FAR (Further assessment required) or PRF (A tree with at least one PRF present) bat roost potential based on the features observed in line with the guidance given in the BCT Bat Surveys for Professional Ecologists - Good Practice Guidelines 2023 (4th Edition).

All trees were found to have NONE bat roost suitability with no potential roost features identified.

Ecological Appraisal - 2024

As the development proposals have progressed and detailed discussion has been undertaken with the Local Planning Authority additional parcels of land to the west and south of the development site boundary are proposed as off-site habitat compensation for the proposed school development. The western off site compensation site has already been covered in all previous ecological survey work within the wider site boundary.

The southern off site compensation site was subject to a walkover survey on the 11th April 2024 by Aislinn Harris of Ecological Services. The land to the north of the fence line was included in all previous ecological survey work within the wider site boundary. The parcel of land is dissected by a post and wire fence. The fence line sits on top of a steep bank that forms a northern and southern plateau. Along the fence line are scattered trees, small stands of Japanese knotweed (*Fallopia japonica*) and bramble (*Rubus fruticosus*).

A small stream appears to commence at the fence line and flow to the south east of the site into the southern plateau through an unlined ditch to a culvert at the south east corner of the site. The ditch is lined with hard rush (*Juncus influxus*), cocksfoot (*Dactylis glomerata*), brooklime (*Veronica beccabunga*), small stands of young willow (*Salix sp*) and dogwood (*Cornus sanguinea*).

The grassland to the south of the fence line appears to be regularly mown when compared with the grassland to the north of the fence. Species noted within the grassland to the south of the fence line include Yorkshire fog (*Holcus lanatus*), creeping buttercup (*Ranunculus repens*), ribwort plantain (*Plantago lanceolata*), daisy (*Bellis perennis*) a species of clover (*Trifolium sp*) and yarrow (*Achillea millefolium*). This area of grassland is considered to be species poor semi-improved grassland.

An updated data search via Aderyn (Reference DERF 0245-036) dated 16th April 2024 was undertaken to inform this most recent EcIA.



Ditch line flowing south east across site



View of site looking south east



View looking west along fence line



View looking west to south of fence line

3.3 Likely Significant Effects

Bats

The Bats and Trees Survey found no tree to have have any bat roosting features within or in close proximity to the development site boundary. The habitats within the site boundary are considered suitable for a small number of common bat species to use for foraging and commuting purposes.

Mitigation measures to reduce the potential impacts of lighting on commuting and foraging bat species will be implemented as part of the development works. These are detailed in section 4 of this report.

Great crested newt

There are nine records of great crested newt (GCN) within 2km of the site, the nearest approximately 862m away to the north east of the site, dated 2007.

No ponds are present within the proposed development site; the nearest waterbody lies approximately 730m to the north west of the site, beyond the A465 road. Habitats within the site are considered suitable for use by GCN during the terrestrial phase of their life cycle. However, due to the distance to the nearest waterbody, along with the physical barrier of the road between the nearest waterbody and the site and lack of nearby records it is considered unlikely GCN are present within the site. No further recommendations will be made for this species.

Dormouse

There are no records for dormouse within 2km of the site. The majority of the land within the site boundary is semi-improved grassland which is unsuitable for use by dormouse as it provides no cover for commuting, foraging or nesting. The scattered trees along the southern boundary have poor connectivity to any suitable habitat for use by dormouse. Given the lack of dormouse records in the area and lack of suitable habitat within the development site boundary, the presence of dormouse is considered to be highly unlikely. No further recommendations will be made for this species.

Otter

There are 29 records for otter within 2km of the site associated with Taf Fechan, River Taff and Cyfartha leat/pond, included are three records which are of road kill. The nearest record is approximately 451m away to the north west and is of a road kill on the A465 dual carriageway.

The habitats within the development site boundary are considered unsuitable for use by otter. The grassland and scattered trees provide no cover from disturbance or shelter which an otter would utilise. The site is also subject to a level of disturbance by humans and horses grazing. As such it is considered unlikely otter are present within the site. No further recommendations will be made for this species.

Badger

There are seven records for the presence of badger within 2km of the proposed development site. The nearest approximately 311m away to the north west and is of a road kill on the A465 road.

No evidence of the presence of badger, such as setts, latrine or digging, was noted within the proposed development site. The open grassland and scattered trees provide no cover

from disturbance or shelter which a badger would utilise. The site is also subject to a level of disturbance by humans and horses grazing. As such it is considered unlikely badger are present within the site. However, they may commute or forage within the site boundary on occasion.

Precautionary measures should be taken during the construction phase of works to ensure badger are not harmed. Precautionary measures for badger will also benefit a range of smaller mammal species such as hedgehog.

Birds

No direct evidence of bird nests was noted during the site survey. The presence of ground nesting birds within the development site boundary is thought to be highly unlikely due to high levels of human disturbance. However the scattered trees within the site have potential to be used by birds for nesting purposes. Other habitats within the site are likely to be used by a range of local birds for foraging purposes.

A precautionary approach to any removal of habitat with bird nesting potential will be required. Lighting should not spill onto suitable nesting bird habitat.

Reptiles and Amphibians

There are 20 records for slow worm and 24 records for common lizard, the nearest records being approximately 544m and 894m 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 habitat within the development site boundary is considered suitable for commuting and foraging use by reptiles. The grassland areas within the site boundary are very wet during the winter months. The presence of hibernating reptiles within the development site boundary is considered to be unlikely.

Whilst no evidence of reptiles were found during the reptile refugia surveys in 2022 and 2023 the presence of a small low density reptile population within the development area cannot be ruled out.

Precautionary measures in respect of reptiles are recommended, to include timing constraints for site clearance, and a two-stage cut of vegetation.

Invertebrates

An invertebrate survey of the land within the development site boundary and wider site was undertaken by Christian Owen Bio-Surveys on the 4th August 2022. The survey consisted of a single prolonged daytime visit. A further survey, undertaken on 30th August 2022 concentrated on Marsh Fritillary, undertaking a larval web search.

The invertebrate survey results indicate that the site as a whole is an important site for a number of scarce and local invertebrate species and clearly provides suitable habitats for a wide range of invertebrates. The survey found that the conservation value to invertebrates is not evenly distributed across the site, with the areas considered to be of greatest conservation value to invertebrates to be present to the north and north east of the wider site.

The current development proposals will result in the loss of some of this habitat to the east of the development site boundary. Without detailed site plans mapping the exact extent of high quality invertebrate habitat vs the development site boundary it is difficult to quantify the exact scale of habitat loss. However it is approximated to be 5750m².

There will be no impacts to any areas of habitat with devil's bit-scabious. Scabious was originally noted within a stand of marshy grassland to the north of the wider site (location noted at TN1 on the habitat map in Appendix 2), outside of the development site boundary. The high quality invertebrate habitat lost to the development site is mainly neutral semi-improved grassland. The wider site slopes upwards to the east, creating a gentle hill dominated by neutral semi-improved grassland. The development site will infringe on the base of the hill due partly to the school boundary and partly the engineering required to create the swale. A small area of marshy grassland, dominated by rush species, will also be lost due to the alignment of the swale. **Compensatory measures will be required for the loss of high quality invertebrate habitat.**

Habitat Loss

The development proposals seek to create a new school building with associated soft and hard landscaping areas. The proposed development area is understood to be a total of 33,184m² in area. When considering habitat impacts within the site there will be a permanent loss of 14,037m² to buildings and hard landscape areas. **Compensatory measures will be required for the overall loss of habitat within the development site boundary.**

The site is greenfield in nature and therefore any development of the site is extremely difficult to demonstrate a gain in habitat when completing a quantitative assessment. In discussions with the LPA a qualitative assessment is considered a more sensible approach given the site context.

4. Impact Assessment

The role of a EclA is to address significant effects which the project may have. For the purpose of this assessment significant impacts will be those that affect legally protected sites and species within and directly adjacent to the proposed development site.

The EclA process presents a hierarchy of approaches to ensure a project of plan lowers its potential impacts. The works should seek to

- **AVOID** - Consider options to avoid any potential harm to an ecological feature,
- **MITIGATE** - If negative effects are unavoidable, measures should be implemented to minimise and reduce potential effects,
- **COMPENSATE** - If negative effects are still likely to be experienced despite measures to reduce impacts being implemented appropriate compensatory measures should implemented.
- **ENHANCEMENT** - Works should always seek to provide net benefits for biodiversity to help meet the section 7 requirements of the Environment Act (Wales) 2016.

The scope of the proposed development works has been reviewed and streamlined to ensure only works necessary are to be undertaken. Much discussion has been undertaken within the design team and Local Planning Authority to agree a broad scope of suitable compensation for habitat and species impacts. Section 3.3 of this report details the likely effects to protected species and habitats within the development site. The species or features which could be impacted by the development works are discussed further in this section of the report.

The development proposals have the potential to negatively impact on the below features. However, mitigation and compensation measures have been considered and are included within the development to reduce the impact the development works may have. Features to consider are:

- Bats
- Nesting Birds
- Badger
- Herptiles
- Invertebrates

- Habitat loss

4.1 Ecological Feature – Bats

Potential Impacts

- Disturbance to commuting and foraging bats.
- Loss of habitat used for foraging purposes.

Measures to be implemented

- All external lighting will be kept to the bare minimum required for health and safety reasons.
- Any external light source will be directional and will only illuminate a doorway or footpath as required. A directional light source can be cowled or recessed back into the casing to prevent light spill.
- All lighting must meet the recommendations in the BCT Guidance Note 08/23 Bats and Artificial Lighting at Night.
- No external light feature will be placed within 2m of any bat box provided within the new building.

4.2 Ecological Feature – Nesting Birds

Potential Impacts

- Disturbance of nesting birds.
- Loss of bird nesting and foraging habitat.

Measures to be implemented

- Any tree removal within the site boundary will be completed **outside of the bird nesting season of March to August inclusive**. If this is not achievable an ecologist must inspect any trees or ground vegetation with the potential for birds to be present, for active birds' nests prior to removal works beginning. If an active nest or activity indicating a nest might be present is identified a buffer zone of at least 5m, up to 20m depending on species, around the nest must be observed until the chicks have fledged. Only then can the vegetation be removed.

- Compensatory planting within the proposed development will include native species to provide a food source for local wildlife including bird species. Planting will include scattered trees, woodland, native hedgerow creation, shrub planting, amenity grassland, wildflower grassland, rain gardens and SUDS area with species attractive to a range of invertebrate species. Details of planting can be found within 26CB01-SBC-00-XX-DR-L-0403 rev P02 by Soltys Brewster.

4.3 Ecological Feature – Badger

Potential Impacts

- Mammal entrapment during construction.

Measures to be Implemented

- 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 let for any mammals 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.

4.4 Ecological Feature – Herptiles

Potential Impacts

- Damage or injury to commuting/foraging reptiles and amphibians during the year.
- Loss of commuting/foraging habitat for reptiles and amphibians.

Measures to be implemented

- A suitably worded planning condition will be added to any planning consent the Local Planning Authority is minded to grant requesting a Reptile Mitigation Strategy to be agreed for the development work.
- All site contractors will be given a toolbox talk which covers the legal protection given to reptiles, what they look like, where they may be found, and what to do if herptiles are found on site. Information on reptiles will be included within the site induction pack.

- Areas of vegetation assessed as having potential for reptile use include marshy grassland and neutral semi improved grassland.

Vegetation Clearance – Grassland Vegetation

- All areas of grassland within the site will be cut in stages and undertaken during the months of **April - September inclusive** when reptiles are active and likely to relocate of their own accord. Whilst the presence of hibernating reptiles is considered unlikely, this timing constraint will be implemented as a precaution. Grassland cutting will start along the southern edge of the development site and progress northwards to retained habitat areas outside of the construction site.
- **First Stage Cut** - vegetation will be cut, using hand tools or an adjustable height flail, to a height of between 100-150mm. The cut material will be raked and removed from the site to avoid potential future colonisation by reptiles. The cut material must be removed the same day it is cut. Work area must be left for 24hrs once the first stage cut is completed.
- **Second Stage Cut** - vegetation will be cut to ground level (a maximum height of 50mm) and the arisings raked and removed from the site as above. Any reptiles or other fauna will be treated as above.
- Any herptiles present should naturally move away of their own accord due to the disturbance from cutting. However, in the unlikely event that any reptiles or other fauna are encountered during this operation all cutting work will stop and the the on call Ecologist will be consulted. Reptiles will either be carefully collected and moved away to the retained vegetation to the north of the development site or be allowed to do so of its own accord.

Vegetation Clearance – Trees

- **First Stage Cut** - The first stage cut of trees will be required outside of the bird nesting season. Trees, hedgerow and dense scrub will be cut to a height of 0.5m between the months of **September to February inclusive**. All cuttings will be collected and removed from the site to prevent future colonisation by birds and or reptiles.
- **Second Stage Cut** - tree roots will be grubbed up using a toothed bucket of a JCB or an appropriately sized digger. The roots will be removed under ecological supervision and any reptiles found will be captured and moved to adjacent habitat. The roots systems will be removed slowly and gently to allow any reptiles present to escape. All roots will then be removed from the proposed development site.

- Once all suitable vegetation has been cleared from within the site boundary, the construction site footprint must remain in a vegetation free state. This will help to reduce the likelihood of reptiles using the site while construction works are underway.

4.5 Ecological Feature – Invertebrates

Potential Impacts

- Loss of high quality habitat used by a wide range of invertebrate species.

Measures to be implemented

- A new drainage swale is proposed to convey surface water around the north and eastern periphery of the new school. The swale is an important feature to help safely manage surface water land drainage runoff away from the development site and adjacent land. This feature will help to create habitat diversity within the site boundary which can benefit a range of invertebrate species.
- The new swale will intercept existing surface water flows currently managed by an existing below-ground culvert. This culvert will be abandoned as part of the new school scheme and the swale will provide an open channel drainage feature, enhancing hydraulic control, water quality, biodiversity, and amenity.
- It is expected that the swale will hold water for the majority of the year. It may occasionally become a dry feature during periods of extended dry weather.
- The swale channel and banks will be naturally saturated and encourage wet habitat to establish. The channel will be seeded with Emorsgate EC1 and EM8 seed mixes to encourage the establishment of marshy grassland habitat. Soft landscaping proposals can be found in 6CB01-SBC-00-XX-DR-L-0403 rev P02 by Soltys Brewster.
- Supplementary plug planting of the swale with devil's-bit scabious (*Succisa pratensis*), ragged robin (*Lychnis flos-cuculi*) and cuckooflower (*Cardamine pratensis*) will be undertaken as detailed on plan 26CB01-SBC-00-XX-DR-L-0402 rev P03 'West off-site Habitat Compensation Sketch Design' by Soltys Brewster.
- The swale banks (outside of the direct channel holding water) will be engineered to have a slope less than 45° to allow safe access for ongoing maintenance. The banks will be managed via mowing with all grass cuttings being collected and removed from site within 24hrs of being cut. It is important that cuttings are collected to ensure the swale channel and check dams are kept open.

- The swale banks will be cut at opposite times of the year to ensure cover for flora and fauna is retained. In year one, one bank will be cut during the March and the opposite bank cut during October. In year two, the opposite bank will be cut in March and October. The alternate cutting of the swale banks should help to create longer and shorter vegetation and improve species diversity within the grassland.
- The swale channel will be engineered to include check dam points at 10m intervals along its length. This will help to create pools of surface water.
- Features will be created within the western and southern off site habitat compensation areas which benefit invertebrates. In the western off site compensation site the grassland habitat will be subject to plug planting to increase floral species diversity, a 1m deep scrape will be created to provide an ephemeral pool and a butterfly bank will be provided along the berm proposed to help create the ephemeral pool. In the southern off-site compensation area, the grassland management will be relaxed to create a longer sward with higher floral species diversity. This will improve the current quality of the grassland habitat in the area by providing more shelter and foraging habitat for invertebrate species.

4.6 Ecological Feature – Habitat Loss

Potential Impacts

- Loss of habitat used by a wide range of local fauna.
- Loss of trees.

Measures to be implemented

- Approximately 19,147m² of soft landscaping will be created within the development site boundary. Long term management proposals will be agreed as part of a Landscape and Ecological Management Plan which will be required as part of any conditions the Local Planning Authority may include should planning consent be granted. Any long term management proposals must include and build upon the details provided within this document.
- Install Heras fencing around all areas of vegetation to be retained. Heras fencing must take into account Root Protection Zones (RPZs) and arboricultural advice provided by ArbTS - Arboricultural Technician Services Ltd. A clear fence line around the construction footprint will ensure contractors do not work within or negatively affect adjacent habitat outside of the development site.

- A Landscape Plan for the development site will be agreed and implemented and will include native tree species to compensate for any trees lost across the site. Native woodland planting is also proposed in the north east corner of the development site. The location and species of tree planting within the development site boundary can be found in the soft landscaping plan 6CB01-SBC-00-XX-DR-L-0403 rev P02 by Soltys Brewster.
- The landscape plan for the development site will see the creation of wildflower grassland, amenity grassland, hedgerow, scattered trees, shrub planting and SUDS features. Management techniques that benefit biodiversity will be secured for many of these features as detailed in section 5.4 of this report.
- Two additional parcels of land, that sit outside of the development site boundary, are also included as compensation for habitat loss as part of the development proposals. The western parcel of land is currently marshy and neutral semi-improved grassland. A small section of this parcel of land is also being used for soil storage for the adjacent Pen Y Dre School development. The southern parcel of land currently contains semi-improved grassland which appears to be frequently mown, scattered trees and small quantity of marshy grassland following the line of a shallow dry ditch.
- **Western Parcel of Land** - Landscape proposals are shown on 26CB01-SBC-00-XX-DR-L-0402 rev P03 '*West off-site Habitat Compensation Sketch Design*' by Soltys Brewster. These include woodland copse planting, native hedgerow creation, scattered tree planting, the creation of a 1m deep scrape to create an ephemeral pool and the creation of a butterfly bank along the southern edge of the scrape.
- The butterfly bank will be created within the berm along the southern edge of the scrape. The bank will run the length of the scrape and use the material excavated from the scrape to create a bank at least 2m wide at its base and 1m in height. No imported material will be used to ensure low soil fertility is maintained within the feature. The bank will be seeded using Emorsgate EM8 Meadow Mixture for Wetlands. The butterfly bank will create microclimates due to the elevation and gradient which invertebrates can utilise during all life stages.
- At the base of the butterfly bank / berm along the southern edge of the feature stoney substrate either gravel or rubble encountered within the site boundary will be spread along the length and 5m in width. This will encourage the establishment of bare ground and short perennial vegetation which is important to the life cycles of a number of invertebrate species. The stony substrate will not be seeded, it will be left to naturally colonise.

- **The butterfly bank will be created under direct ecological supervision and photographic evidence of the completed feature will be sent by the supervising ecologist to the Local Planning Authority.**
- Supplementary plug planting of the remaining grassland with devil's-bit scabious (*Succisa pratensis*), ragged robin (*Lychnis flos-cuculi*) and cuckooflower (*Cardamine pratensis*) will be undertaken as detailed on plan 26CB01-SBC-00-XX-DR-L-0402 rev P03 'West off-site Habitat Compensation Sketch Design' by Soltys Brewster.
- The remaining grassland within the western parcel of land will be subject to annual management, whereas currently the land is subject to low intensity horse grazing. Given the likely wet nature of the grassland making machinery access difficult, it is recommended that grassland is cut once per year in early summer i.e. June. All cuttings must be collected and removed from the grassland to help reduce soil fertility.
- The option to continue grazing of this portion of the development site could be explored. Low intensity grazing during the summer months only is thought likely the best option but will depend on species and stocking density.
- **Southern Parcel of Land** - Landscape proposals are shown on 26CB01-SBC-00-XX-DR-L-0403 rev P02 'South off-site Habitat Compensation Sketch Design' by Soltys Brewster. Proposals include the retention of frequently mown grassland adjacent to the play area to balance the need of community use of the area and also allow access to underground utilities known to be in the area. A 1m width area of well mown grassland along the adjacent carriageway will be provided for safety purposes.
- Supplementary plug planting of grassland to the north of the post and wire fence line with devil's-bit scabious (*Succisa pratensis*), ragged robin (*Lychnis flos-cuculi*) and cuckooflower (*Cardamine pratensis*) will be undertaken as detailed on plan 26CB01-SBC-00-XX-DR-L-0402 rev P03 'West off-site Habitat Compensation Sketch Design' by Soltys Brewster.
- The grassland up to the current post and wire fence line will have a reduced management regime implemented. This will help improve species diversity within the sward and longer grassland provides cover for small mammals and invertebrates to utilise. The grassland to the north of the post and wire fence but outside of the development site boundary will also be subject to annual management.
- The grassland areas (outside of amenity space) will be cut two times per year with all arising collected and removed from site. The grassland will be cut during the months of March and September inclusive.

In order to help inform the development proposals the below table provided detail on the habitats pre and post development. The total development area is 39,769m². The total area of soft landscaping to be provided is 19,445m². Area of hard landscaping, soft play and buildings are 20,324m². Native Species hedgerow planting is 570m in length and proposed Ready Hedge planting is 111m in length. The assumed width of hedgerow planting on 0.7m for the purpose of these calculations.

Habitat Type	Pre-development Onsite Area (m ²)	Species Present	Post-development Onsite Area (m ²)	Species Present
Neutral Semi Improved Grassland		29	-	-
Marshy Grassland		17	-	-
Trees	10	4		11
Species Poor Semi Improved Grassland		5	-	-
Scrub		8	-	-
Japanese knotweed		1	-	0
Native Woodland Planting	-	-	977m ²	11
Species Rich Hedgerow	-	-	437m ²	7
ReadyHedge	-	-	76m ²	1
General Wildflower Meadow Mix (EC1+EM1)	-	-	8624m ²	6+14+3 plug planting
SuDS Wildflower Meadow Mix (EC1+EM8)	-	-	3691m ²	6+30+3 plug planting
Shrub & Perennial Planting	-	-	1219m ²	32
Rain Garden Planting	-	-	26m ²	8
Sensory / Therapeutic Garden	-	-	304m ²	15
Amenity Grassland (EL1)	-	-	4091m ²	23
Soft Play Area	-	-	3,355m ²	0
Hard Landscaping & Buildings	-	-	16,969m ²	0
		Total	39,769m ²	

The total area of habitat created in the west off-site habitat compensation area is 3,416m².
The total area of habitat created in the south off-site habitat compensation area is 4,429m².

5. Enhancement Measures

The Environment Act (Wales) 2016 places a duty on competent authorities to ensure biodiversity is not only conserved but enhanced. The proposed development works create potential features that can be improved for the benefit of biodiversity.

5.1 Provision of Bat Roosting Opportunities

A total of seven integrated 2FR Schwegler Bat Tubes (or similar design) will be provided within the new development. All boxes will be built into the walls no lower than eaves level of the building with the access gap left open for use and will be located as follows: -

- South Elevation x 4
- East Elevation x 2
- West Elevation x 1

No external lighting will be placed within 2m of any bat box. **Photographic evidence of the boxes will be sent to the local planning authority ecologist once completed.** Types of bat boxes can be found in Appendix 3 and the approximate location each box can be found in Appendix 1.

5.2 Provision of Bird Nesting Opportunities

Eight integrated bird boxes will be provided within the new development. All bird boxes will be integrated into the walls at eaves level (a minimum height of 3m above ground level). The following bird boxes will be installed: -

- 2 x Schwegler Type 24 Bird Brick (or similar design) north elevation
- 2 x Vivara Pro Woodstone House Sparrow Nest Box (or similar design) north elevation
- 1 x Schwegler Type 24 Bird Brick (or similar design) west elevation
- 2 x Vivara Pro Woodstone House Sparrow Nest Box (or similar design) east elevation

Photographic evidence of the boxes will be sent to the local planning authority ecologist once completed. Types of bird boxes can be found in Appendix 2 and the approximate location each box can be found in Appendix 3.

5.3 Reptile Hibernacula

A reptile hibernacula will be created in the southern off site habitat compensation area, in the area indicated within plan 26CB01-SBC-00-XX-DR-L-0403 rev P02 by Soltys Brewster. The reptile hibernacula will be at least 3m long and 2m wide and be dug into the ground at least 0.5m deep. The hibernacula will be created by layering brash and rubble as indicated in Appendix 3 to create a low mound approximately 0.5m in height. The mound will then be covered in soil excavated from the hole dug to create the hibernacula (no imported soil to be used) and left to naturally vegetate over.

It is important that gaps in the soil are created where the base of the mound meets ground level to allow small animal access to the interior of the hibernacula. This can be created by leaving rubble or branches protruding from the interior. **The hibernacula will be created under direct ecological supervision and photographic evidence of the completed feature will be sent by the supervising ecologist to the Local Planning Authority.**

5.4 Fencing

Any close board or mesh fencing within the site boundary will incorporate features to ensure it is wildlife friendly. Such fencing will have either:

- a 13cm by 13cm gap cut at ground level every 2m or;
- a continuous gap of 13cm from the base of the fence and ground along the entire fence line. Any mesh fencing must have a continuous gap of 13cm from the base of the fence and ground along the entire fence line

5.5 Long Term Habitat Management

A long term management plan will be required for habitats within the development site boundary and parcels of land to the west and south of the development site. Long term management should also include provision for ecological monitoring of management measures, especially within the southern and western parcels of land. Any changes to management proposals should be based on ecological monitoring information only.

The below management principles will be followed once each habitat has established:

- **Native Hedgerow** - Hedgerow habitat will be managed to ensure the feature has a dense 'A' shaped vegetated structure at least 1.5m in height. All hedgerow habitat will be subject to one cut every two years. The hedgerow will be cut between the months of November and February. All hedgerow will be laid every 10 years to ensure a dense structure is retained.

- **Proposed General Wildflower Meadow Mix Grassland** - The grassland areas will be cut two times per year with all cuttings collected and removed from site. Wildflower grassland will be cut during the months of March and September inclusive.
- **Proposed SuDS Wildflower Meadow Mix Grassland** - The swale banks will be cut at opposite times of the year to ensure cover for flora and fauna is retained. In year one, one bank will be cut during the March and the opposite bank cut during October. In year two, the opposite bank will be cut in March and October. The alternate cutting of the swale banks should help to create longer and shorter vegetation and improve species diversity within the grassland.
- The SuDS wildflower meadow mix grassland scattered across the development site boundary will be cut once per year during the month of June. All cuttings must be collected and removed from site. The low intensity cutting of these small areas of grassland will help create a habitat mosaic across the site, foraging and commuting habitat for a range of small animals and invertebrates.
- **Off-site Grassland (Western parcel)** - Given the likely wet nature of the grassland making machinery access difficult, it is recommended that grassland is cut once per year in early summer ie June. All cuttings must be collected and removed from the grassland to help reduce soil fertility.
- **Off-site Grassland (Southern parcel)** - The grassland areas (outside of amenity space) will be cut two times per year with all arising collected and removed from site. Grassland will be cut during the months of March and September inclusive.

6. Management Responsibilities

It is understood that the land within the development site boundary and off-site compensation areas are within the ownership of Merthyr Tydfil County Borough Council (MTCBC). During the construction phase of development the appointed contractor will have the responsibility to ensure the measures within this document are fully and continually implemented during the life time of the project. All site sub-contractors must be fully inducted and made aware of the ecological constraints and required working methods.

During the operational phase of the the development MTCBC will have the responsibility to ensure the measures within this document are fully and continually implemented. It is not known at present which departments of MTCBC will manage the development site and off site compensation sites, it could be the same department of different departments of the council.

Maintenance of the soft landscaping to be installed as part of the development works will be the responsibility of the site owner. The site owner will appoint and fund contractors who will undertake the work as detailed within the landscape documents and this Ecological Impact Assessment.

It is anticipated that the soft landscaping will be installed during the 2024/2025 planting season. This is considered year 0. The created habitats, bat and bird boxes will be subject to a monitoring visit by a suitably licensed ecologist three years (anticipated to be 2028) from the landscape work being finished to monitor use and establishment of planting. Any changes to the management details on Section 4 and 5 of this report can be made if required, based on the findings of the monitoring visit. Any changes to management must be agreed in writing with the Local Planning Authority.

Bibliography

- Bat Conservation Trust (2023) 'Bat surveys for Professional Ecologists; Good Practice Guidelines' (4th Edition)
- BCT Guidance Note 08/23 Bats and Artificial Lighting at Night
- Blakesley, D. And Buckley, G.P. (2016) 'Grassland Restoration and Management'

V2.0

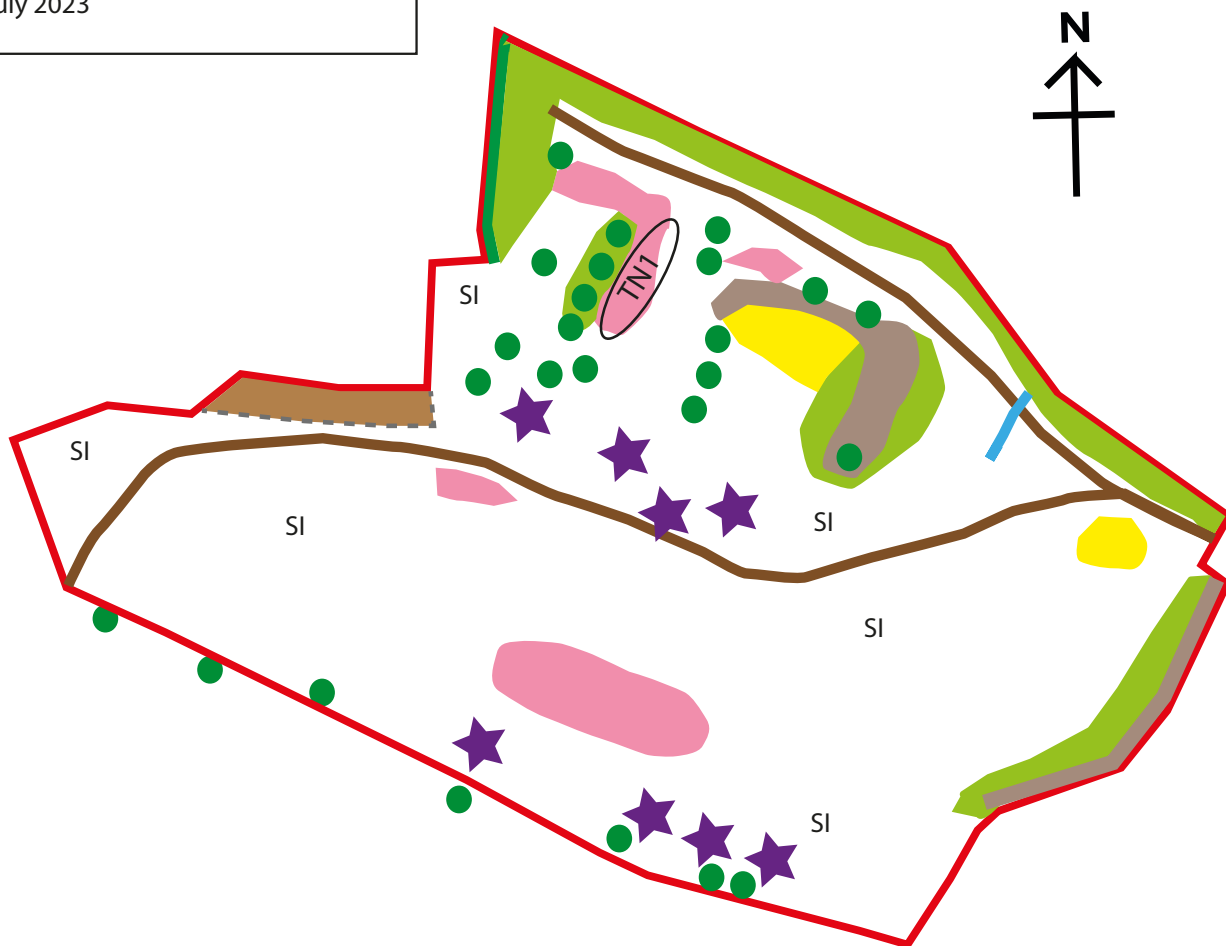


Appendix 2 - Habitat Map (2023 Survey Visit)

LAND ADJACENT TO GOETRE LANE,
MERTHYR TYDFIL

Habitat Map

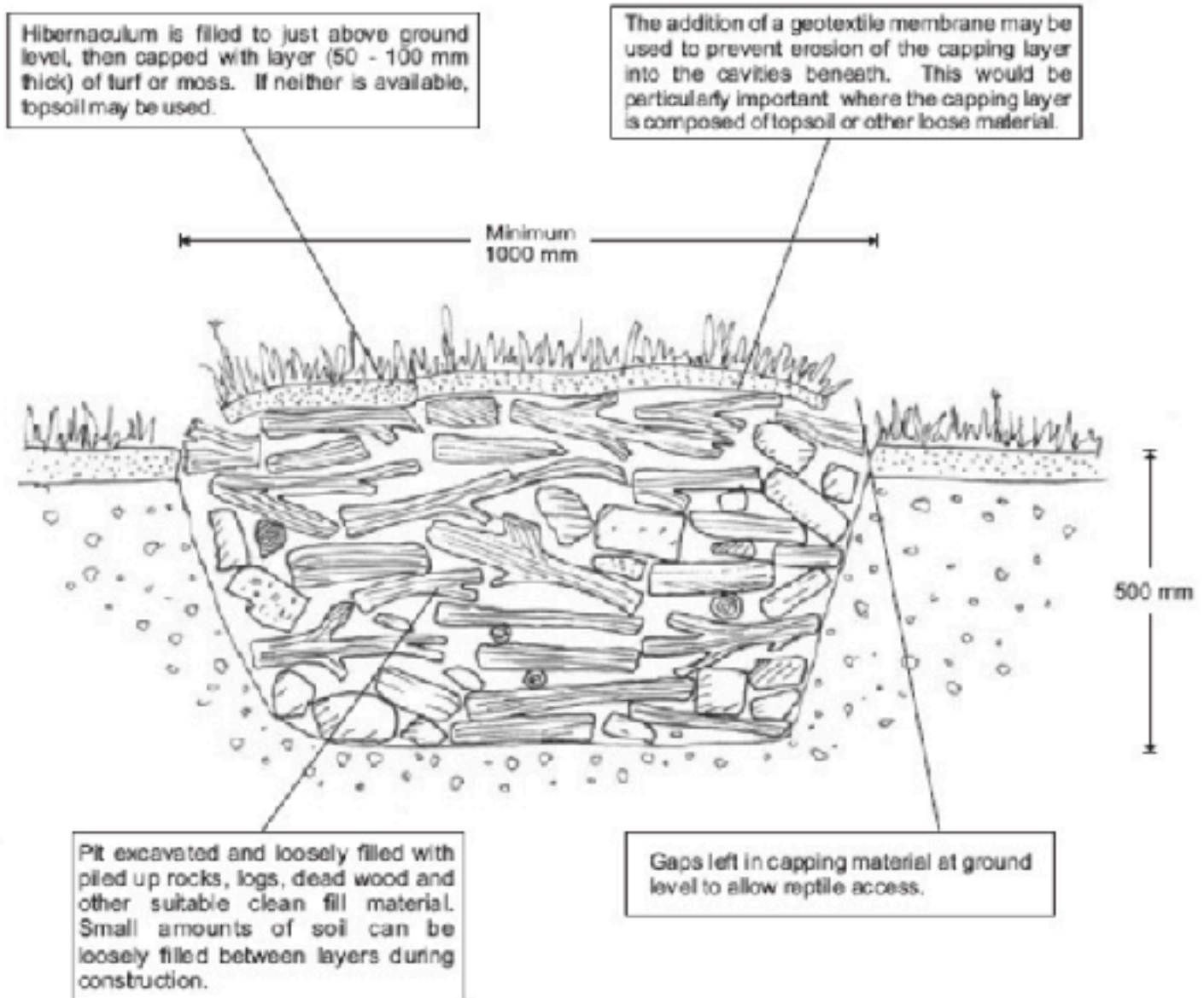
July 2023



- Bramble Scrub
- Woody Scrub
- Marshy Grassland
- SI Neutral Semi Improved Grassland
- Bracken
- Japanese Knotweed Stand
- Scattered Tree
- Bare Earth

- Site Boundary
- Stream
- Heras Fencing
- Pathway

Appendix 3 - Reptile Hibernaculum



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*