PENYRENGLYN LANDSLIDE RISK MANAGEMENT WORKS

Ecology Report

Project no. 4021526

Prepared for:

Natural Resources Wales

July 2025

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Details of document preparation and issue:

Version no.	Prepared	Checked	Reviewed	Approved	Issue date	Issue status
P01	Wendy O'Neill	Jon Goodrick	Andrew Burwood	Alex Humphreys	03/12/2024	Draft
P02	Andrew Burwood	Elinor Ward-Evans	Jon Goodrick	Alex Humphreys	17/07/2025	S3
P03	Andrew Burwood	Elinor Ward-Evans	Jon Goodrick	Alex Humphreys	21/08/2025	S5

Project no. 4021526 Client's reference no. CEO741

File name: 4021526-BUK-ZZ-00-RP-EN-00013

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1 Introduction

1.1 Background

This Ecology Report has been produced to support an application for Town & Country Planning approval for proposed landslide risk management works at the former Ynysfeio Colliery spoil tip, also referred to as Penyrenglyn tip, hereafter referred as the 'project'. The purpose of the project is to install positive drainage measures into slopes to reduce infiltration into the coal tip material, reducing the likelihood of material slips.

This report presents the findings of an ecology assessment of the project. It describes the baseline ecological conditions, assesses potential harmful effects (risks) of the project on ecology receptors, and where avoidance is not possible, sets out the mitigation and compensation measures that will be carried out to maintain biodiversity and ecosystem resilience in accordance with the step-wise approach. Measures to deliver Net Benefit for Biodiversity in accordance with the DECC framework are described in detail in the Green Infrastructure Statement that accompanies the planning application.

1.2 Site Location and Context

The project site (the 'site') is adjacent the village of Penyrenglyn, between Treherbert to the west and Treorchy to the east, along the eastern side of the Rhondda Fawr Valley (Figure 1-1). The site is centred at National Ordnance Survey (OS) Grid reference SS 94874 98109 (nearest postcode CF42 5HA) and covers approximately 12.6ha. It comprises valley slopes on which coil spoil had been placed and part of a raised plateau at the base of the slopes which was created during mine closure. There is a track along the northern edge of the plateau accessed from the west from Herbert Street. Following mine closure the slopes had been planted as conifer plantation which was felled in winter 2023/24. There is a retained band of broadleaved woodland on the lower slopes.

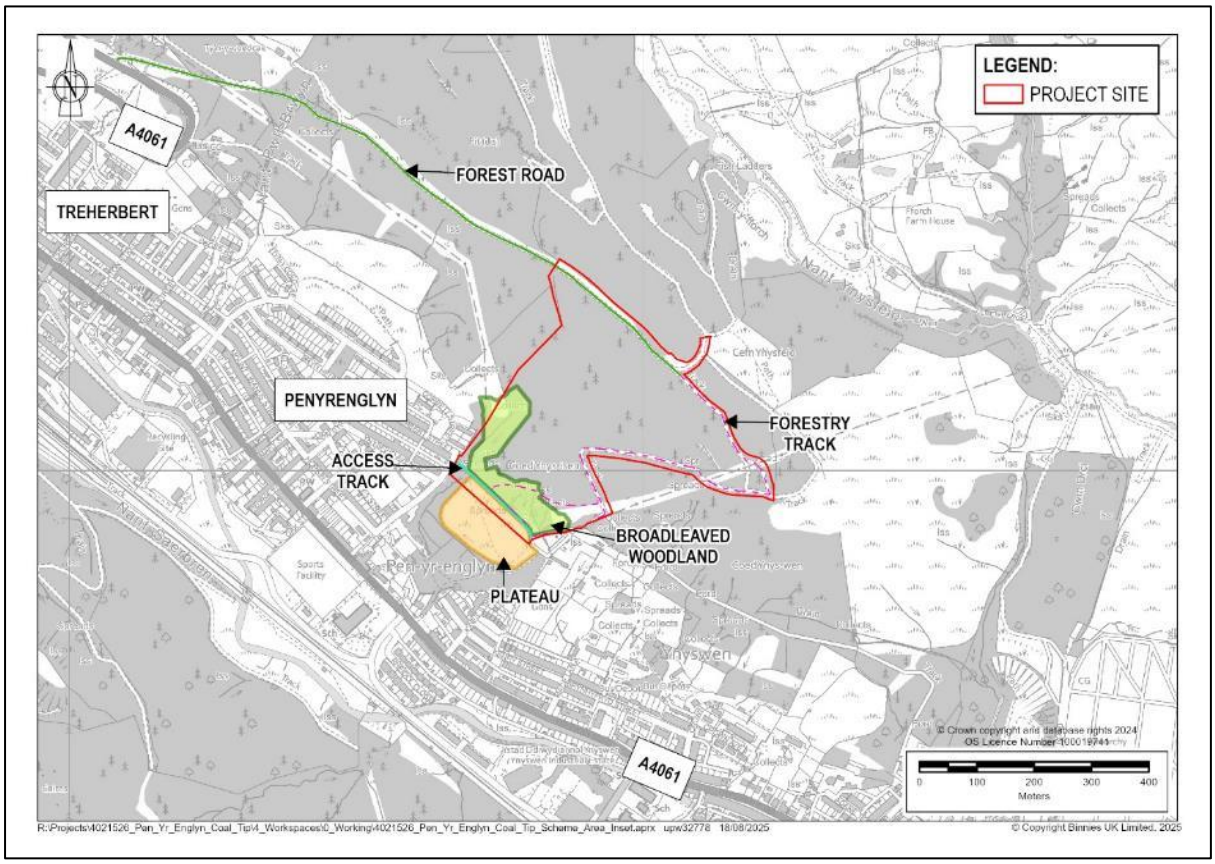

Figure 1-1 Site Location Plan

1.3 Project Description

1.3.1 Proposed drainage assets

The proposed drainage assets are shown Environmental Masterplan (Appendix A) with details provided in the Drainage Strategy Report (Binnies UK Ltd, 2025a). They comprise:

- Repositioning one culvert beneath the forest road at the top (north) of the slopes to better manage natural catchment flows on the eastern side of the project site.
- Installation of 81 subsurface drains (perforated pipes installed into the slope, each with a stone headwall) each with a maximum length of 25m.
- New 3m wide, 95m long stoned access track to provide access to subsurface drain headwalls.
- Installation of three new blockstone cascades totalling 320m in length (115m, 100m and 105m).
- Installation of three new impermeable drainage ditches totalling 190m in length (80m, 80m and 30m) connecting to the new blockstone cascades; the drain surfaces will be vegetated
- Installation of six impermeable gravel (lateral) drains totalling 280m in length (60m, 55m, 45m, 50m, 35m, 35m) connecting into new blockstone cascades and existing watercourse.

- Improving the surface of 420m of forestry track and provision of a bund of 0.3m height on the downslope side of the forest track; the bund will clearly demarcate the forestry track edge on the steep slopes.
- Installation of 445m of filter drains adjacent to forestry tracks, including silt traps along the drains. Filter drains will be sub-surface, topsoiled and seeded.
- Installation of one culvert to connect an impermeable ditch, the top of the south eastern blockstone cascade and forestry track filter drain.
- Installation of a 270 m3 below ground water storage tank to control discharge from the filter drains to downstream watercourses.
- Installation of a below ground pipeline, concrete-bag headwall and apron to connect the below ground water storage tank to an existing watercourse.
- Installation of three cross channels along the middle section existing forestry track to promote natural catchment flow on the eastern side of the project site where it is not on coal tip material and to reduce track erosion.
- Installation of three culverts beneath the lower section of existing forestry track: one culvert to connect the forestry track filter drain with an existing drainage ditch; two culverts to allow some water collected by the forestry track filter drain to be released to flow overland into existing woodland on the lower slopes.
- Coppicing a 6m wide corridor along the existing watercourse through woodland and removal of flow obstructions.
- Replacement of one culvert which conveys the existing watercourse beneath the plateau access track.
- Installation of one culvert to connect the new forestry track filter drain with the eastern end of the existing drainage ditch
- Thinning of vegetation and removal of silt and flow obstructions from existing drainage watercourse (ditches) at the toe of the slopes.
- Installation of a vehicle gate across the forestry track to prevent unwanted access and associated antisocial behaviour; pedestrian access will be maintained.
- Clearance of brash and cutting back vegetation from an approximately 2.4m wide area either side of the forestry track to create a fire break.

1.3.2 Operational Management

The operation and maintenance plan for the proposed drainage assets are set out in the Drainage Strategy Report (Binnies UK Ltd, 2025a). The drainage system is designed to operate passively. This passive drainage system will require regular maintenance; visual inspections of assets, removal of blockages, debris and overgrown vegetation (e.g. from the filter drains along the forestry track and around sub-surface drain headwalls), and small-scale repairs where needed. The existing forest road, forestry tracks and the new stoned access track will be used to access most assets during inspections. Assets not on these routes will be accessed by

operatives cutting back vegetation to create a path. Inspections needing access beyond the existing tracks, and inspections needing vegetation to be cut back will not take place during bird nesting season (March-September inclusive). If this is not possible, e.g. due to safety, then nesting bird checks will be carried out before vegetation is cleared. If active nests are found, then suitable exclusion zones will be established as advised by a Suitably Qualified Ecologist (SQE).

Any potential larger scale repairs, including maintenance of blockstone cascades, ditches and filter drains on the steeper slopes, will be carried out as standalone planned activities and could require specialist equipment. Access for such works must be planned carefully and would require larger areas of vegetation on the hillside to be cut back.

Cutting vegetation within the 2.4m fire break zones will be done using attachments to vehicles using the forestry track, or on foot using hand tools where necessary in localised areas. Removal of conifer regrowth saplings across the site will be done on foot where saplings cannot be reached from forestry tracks. Operatives will cut back vegetation to create a path as needed. Cutting of the fire break and removal of conifer regrowth saplings will not take place during bird nesting season (March to September inclusive). If this is not possible, then nesting bird checks will be carried out before vegetation is cleared. If active nests are found, then suitable exclusion zones will be established as advised by a SQE.

1.3.3 Construction Access

The primary access to the site will be via the forest road at the top of the site, where the main construction compound will be sited, access to which is provided off the A4061 Rhigos Road from north of Treherbert.

The secondary access to the site will be via Herbert Street onto the access track along the north edge of the plateau. This will be accessed via residential roads from the A4061 where it passes through Penyrenglyn.

Most bulk materials and machinery will be delivered initially to the main compound before being moved to where they are needed.

Most construction machinery will move between the main compound and working areas using exiting forestry tracks. The crane needed to lift into place the sections of the below ground tank will need to be delivered via Herbert Steet, as will the materials needed to form the crane pad.

The forestry tracks are not suitable for moving bulk materials around the site. Therefore, for works to install the below ground tank, material excavated and that is not being retained will be taken off site via the Herbert Street entrance. Individual sections of the below ground tank will need to be moved from the main site compound to the plateau via Herbert Street and connecting public roads. Personnel may also move between the main site compound and lower / plateau working areas via public roads, e.g. in a van.

Access to working areas on the slopes that are not along, or easily accessed from, the existing forestry tracks will be determined by a detailed Construction Method Statement, including a materials movement and lifting plan, traffic management and public access management. It is expected that a spider excavator that is specialised for working on very steep slopes will need to be used for some assets, which will require anchor points and safety cables for it to work safely and securely on the steep slopes.

1.3.4 Construction Compounds and Working Areas

The proposed temporary construction compounds comprise:

- Provision of a main compound adjacent to the forest road at the top of the site, in the area previously used as a compound for the winter 2023/24 forestry works. This compound will be approximately 30m x 30m. In addition, it will be necessary to ensure that a turning area for HGV's is kept free from obstructions.

- Provision of a welfare unit on the plateau, within a temporary working area south of the access track.

A temporary working area on plateau along and south of the access track will be needed to install the below ground tank, pipeline and outfall. The working area will accommodate a crane pad and crane movements, space for excavations and plant movement, and space for temporary storage of soils for reinstatement. The working area will be up to 25m wide and 150m long. The exact area needed to be used within this will be determined by the detailed Construction Method Statement.

A working area of up to 5m wide on the upslope side of the existing forestry track will be needed to install the forestry track filter drain and the below ground pipes and headwalls. The exact width will vary depending on the existing topography. Where necessary to create additional space for machinery 'swings' and materials movement for works in the existing woodland (e.g. manoeuvring pipes into position), adjacent trees will be coppiced or pruned.

Linear working areas of approximately 6m wide will be needed to install the impermeable ditches and gravel lateral drains on the slopes. Where necessary to create additional space for machinery 'swings' and materials movement for works in the existing woodland adjacent trees will be coppiced or pruned.

The linear working areas needed to install the blockstone cascades will depend on the detailed Construction Method Statement but are likely to be between 5m and 10m wide and in part dependant on the local topography.

Linear working and access areas to install below ground drains and headwalls where they cannot be access from existing tracks or as part of other works will be approximately 5m, although the final details will be determined by the detailed Construction Method Statement. Where necessary to create additional space for machinery 'swings' and materials movement for works in the existing woodland (e.g. manoeuvring pipes into position), adjacent trees will be coppiced or pruned.

1.4 Programme

Subject to receipt of all necessary consents, the aspiration is to start drainage installation works in April 2026 and complete before 2027. Working over the summer provides the safest working conditions for working on the steep slopes comprising coal spoil material. The aim is to carry out all vegetation clearance over winter in advance of the main works, outside of the main bird breeding season (March to August inclusive).

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1.5 Legislation

The report has been compiled with reference to relevant nature conservation legislation, planning policy and the UK Biodiversity framework from which the protection of sites, habitats and species is derived in Wales. The context of these and how they have been applied is detailed in relevant sections of this report with additional information presented in Appendix C. The following legislation and policy are highlighted:

- The Conservation of Habitats and Species Regulations 2017 (as amended[1]) (commonly referred to as the Habitats Regulations)
- The Environment (Wales) Act 2016
- Wildlife and Countryside Act 1981 (as amended)
- Protection of Badgers Act 1992
- Wild Mammals (Protection) Act 1996
- Invasive Alien Species (Enforcement and Permitting) Order 2019.

[1] As amended by the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019

2 Methodology

2.1 Guidance and Data Sources

This report is produced with reference to current good practice guidelines by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017a); (CIEEM, 2017b); (CIEEM, 2020), Joint Nature Conservation Committee (JNCC, 2010) and guidelines contained in the British Standards – Code of Practice for Biodiversity and Development BS42020:2013 (British Standards Institution, 2013).

The assessment and recommendations detailed in this ecology report are based on the following data sources:

- Preliminary Ecological Appraisal (ARUP, 2022).
- A report on recommendation son ecological design for tip remediation, including observations from site walkovers and invertebrate sampling (Olds, 2023).
- Environmental Constraints and Opportunities Record including stakeholder consultation records (Natural Resources Wales, 2023).
- Updated ecological desk study (in this report).
- Updated Phase 1 Habitat Survey, Habitat Condition Assessment, Floristic Survey and INNS Survey (Binnies UK Ltd, 2024a).
- Bat Ground Level Tree Assessment (Binnies UK Ltd, 2024b).
- A nightjar survey (Binnies UK Ltd, 2024c).
- Invertebrate survey (Conopsent Entymology, 2024).

The survey methods, detailed findings and any limitations are set out in reference reports which should be read in conjunction with this assessment. The method for the updated ecological desk study is set out in section 2.2 of this report.

2.2 Ecological Desk Study

Binnies obtained data for an updated ecological desk study of the Zone of Influence of the project in January 2024.

The Zone of Influence (ZoI) is the area over which ecological features may be affected by biophysical changes as a result of the project and associated activities. Zones of Influence vary for different ecological features depending on their sensitivity and connectivity to the project site. This approach is in line with good practice guidelines published by CIEEM (CIEEM, 2017a; CIEEM, 2017b; CIEEM, 2020).

The Zones of Influence for the project were developed to include:

- Areas directly within the land take for the proposed permanent development including permanent access routes for future maintenance; this comprises the entire project site.
- Areas which could be temporarily affected during construction due to temporary access, working areas and noise and visual disturbance; this comprises the entire

project site plus a 2km buffer for local designated sites, extended to 10km for nationally and internationally designated sites to account for mobile qualifying features.

- Areas with potential to be impacted by potential hydrological disruption during construction and operation (e.g. within and downslope / downstream of the project site); this comprises the entire project site plus a 2km buffer for local designated sites extended to 10km for nationally and internationally designated sites.

When in operation, the project will not generate any noise, vibration or air pollution apart from occasional maintenance visits.

The following data sources have been consulted as part of the desk study:

- Preliminary Ecological Appraisal (ARUP, 2022).
- Local Records Centre Records 2024, held by Natural Resource Wales.

Records were sought for the following ecological features and relevant Zones of Influence:

- Statutory designated sites within 10km of the project site for designated sites with either a direct, hydrological or qualifying species (mobile species) link to the project site.
- Non statutory designated sites within 2km of the project site.
- Priority habitats within 2km of the project site.
- Protected and notable flora within 2km of the project site.
- Invasive Non-Native Species (INNS) within 2km of the project site.

Species records obtained from the various sources were curtailed to the last ten years to ensure validity.

The South Central Area Statement (Natural Resources Wales, 2024) was reviewed to identify key ecosystems of relevant to project site.

3 Baseline Ecological Conditions

3.1 Designated Sites

3.1.1 Statutory Designated sites

There are 18 statutory designated sites within 10km of the project site. These comprise two Special Areas of Conservation (SAC) - Blaen Cynon SAC and Coedydd Need a Mellte SAC – and 16 Sites of Special Scientific Interest (SSSI). The locations of these sites are shown on the Statutory Designated Sites within 10km drawing in Appendix A. Summary details of all designated sites are in the PEA (ARUP, 2022).

Of these when screened for direct, hydrological or qualifying species (mobile species) links to the Penyrenglyn project site, there is only one site which has potential to be affected the project (Table 3-1.)

Table 3-1 Designated statutory nature conservation sites within the Zone of Influence

Site Name	Distance from project (approx.)	Reasons for Notification and Integral Value	Reason for inclusion within Zone of Influence
Mynydd Ty-Isaf SSSI	0.7km west	This site supports a range of wildlife habitats, with several rare species. The habitats and species of special importance for the SSSI are: • Dry Heathland: found in relatively thin soils and free draining. Heather *Calluna vulgaris* and bilberry *Vaccinium myrtillus* tend to be the dominant plants, with some crowberry *Empetrum nigrum,* and a layer of mosses *Bryophyta* beneath these small shrubs. At Mynydd Ty-Isaf, dry heathland is best represented in the upper part of Cwm Saerbren, including on the rocks of Tarren Saerbren. • Assemblage of northern and upland ferns *Polypodiophyta* best represented on Graig-fawr. These cliffs formed from Pennant sandstone, a rock that forms slightly lime-rich soils. Fourteen species of fern have been recorded at Mynydd Ty-Isaf, Other habitats at Mynydd-Ty-Isaf include marshy grassland, acid grassland and bracken *Pteridium sp* dominated slopes.	Proximity to site: within 1km and within the valley. Includes grassland habitats.

NRW Priority Ecological Networks (PENs) in the terrestrial environment show areas of connectivity between protected sites. PENs provide a framework to inform the location of actions to build functional resilient ecological networks based on Wales's most important places for biodiversity. Typical actions would be habitat improvement, restoration, or creation, located within the boundaries of a PEN area, or situated at its margins.

The project site is not within a PEN and there are no PEN areas within 2km of the project on the east side of the Rhondda Fawr Valley above Penyrenglyn (see the Statutory Designated Sites within 10km drawing in Appendix A). There are heathland and fen PEN areas on the west side of the valley opposite the project site, separated by the river valley, urban development, road and railway line.

3.1.2 Non-Statutory Designated Sites and Ancient Woodland

There are eleven Sites of Importance for Nature Conservation (SINC) within 2km of the project site. These are listed in Table 3-2 and shown on the Non-Statutory Designated Sites Within 2km drawing in Appendix A. Summary details of all sites are in the PEA (ARUP, 2022).

Table 3-2 Designated non- statutory nature conservation sites within the Zone of Influence

Site Name	Approximate location
Mynydd Ystradffernol SINC	The deforested slopes of the project site are in the SINC
Treorchy Slopes SINC	150m northeast
Taff and Rhondda Rivers SINC	210m southwest (hydrological connectivity)
Mynydd Tyle-coch SINC	260m southwest
Treorchy Cemetery SINC	650m southeast
Mynydd Blaenrhondda and Mynydd Ty-Isaf SINC	760m west
Treherbert Slopes SINC	1,170m northwest
Cwmparc SINC	1,470m southwest
Maerdy Colliery SINC	1,680m northeast
Mynydd Ty'n-tyle Slopes SINC	1,700m east
Ton Pentre Slopes	1,900m south

Mynydd Ystradffernol SINC is a large upland plantation on the deep peat of Mynydd Ystradffernol. The plantation within the SINC, predominantly sitka spruce, represents an important bird habitat. The SINC has large areas of purple moor-grass, marshy grassland, together with remnant peat bogs. There are numerous small peat bogs, together with forestry pools.

There are no Local Nature Reserves (LNR) within 2km of the project site.

The slopes in the east of the project site include part of a Plantation on Ancient Woodland Site (PAWS). There is another PAWS area on the slopes above Treherbert, approximately 70m west of the project site at its closest point (see the Non-statutory Designated Sites within 2km drawing). There are several other PAWS and areas of Semi Natural Ancient Woodland on the opposite side of the valley.

3.2 Habitats

A Phase 1 Habitat Survey plan from a survey carried out in 2024 is provided in Appendix A. Please note that the project site is smaller than the Phase 1 Habitat Survey area, and that the woodland mapping has been revised in other reporting following a tree survey in 2025 (RSK ADAS Ltd, 2025). The habitats listed below are present within the project site. Further details

including a full species list can be found in the Habitat Condition and Flora Report (Binnies UK Ltd, 2024a).

There were 11 Phase 1 habitat types recorded within the project site:

- Acid grassland – unimproved
- Bare ground
- Bracken – continuous
- Broadleaved woodland – semi-natural
- Coniferous woodland – recently felled
- Dry ditch
- Neutral grassland - semi-improved
- Other tall herb and fern – ruderal
- Running water
- Scrub – scattered (within neutral grassland - semi-improved)
- Scrub – dense/continuous.

Three habitats were identified that meet the criterion for Habitats of Principal Importance (HPI): areas of unimproved acid grassland on the plateau slopes; Open Mosaic Habitat on Previously Developed Land across the plateau; and, the semi-natural broadleaved woodland meets the criteria to be Wet Woodland HPI (Figure 3.1). Habitats of Principle Importance are listed under Section 7 of the Environment (Wales) Act 2016 and are considered crucial for maintaining and enhancing biodiversity in Wales. Public bodies are legally required to consider these habitats when exercising their functions. Further details of the HPIs and other habitats, including their condition assessments are provided in the following sections.

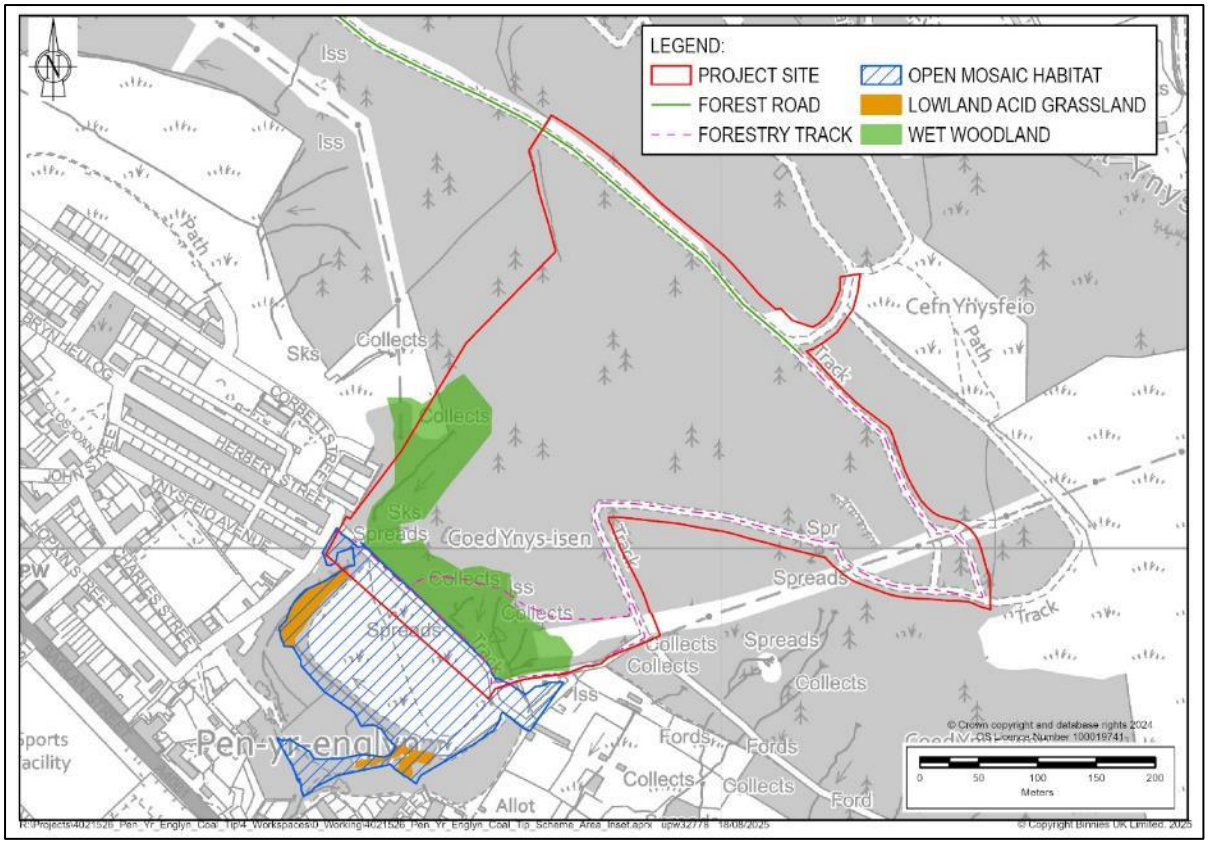

Figure 3-1 Habitats of Principal Importance

3.2.1 Lowland Dry Acid Grassland Habitat of Principal Importance (HPI) / Acid grassland - unimproved

Unimproved acid grassland that had naturally established on the exposed mining spoil was present on the slopes around the plateau. Only a small area of this habitat is within the project site, on the northwest plateau side slope (Figure 3-1). The grassland was shown to have a species composition standard go of a U1 sheep's fescue *Festuca ovina* – common bent – red sorrel Rumex acetosella grassland and included a range of positive indicator species for U1 lowland acidic grassland (JNCC, 2004). Due to the species composition this habitat meets the criteria to be lowland dry acid grassland HPI (Joint Nature Conservation Committee, 2008a).

The acidic grassland areas on the slope were becoming encroached by scattered scrub including invasive non-native cotoneaster species, wall spray cotoneaster *Cotoneaster horzontalis*. Waxcap fungi were also found present within the acidic grassland.

The desk study returned a record for Lowland Dry Acid Grassland covering the north western side slopes of the plateau with some also on the top of the plateau. The record was from the Phase 1 Habitat Survey of Wales 1979-1997 digital data and so is not recent. This suggest that Lowland Dry Acid Grassland once covered a much larger area of the plateau and its side slopes after the plateau had been formed during previous remediation works, but that much of that habitat has now transitioned to scrub and semi-improved neutral grassland.

The condition of the unimproved acidic grassland on the slopes around the plateau was assessed to be in moderate condition, due to the presence of invasive species. Further encroachment by scrub could affect the extent of this habitat in the future.

3.2.2 Open Mosaic Habitat on Previously Developed Land (OMHPDL) HPI

Many coal tips support a complex mosaic of habitats owing to their highly varied topography, aspects, gradients, pH and substrate composition). The mosaic of habitats on the plateau at the base of the slopes meets all the criteria required to qualify as an OMHPDL. The following communities were present:

- Lichens present on open bare coal spoil slopes
- Ruderal species found as ecotones between scrub
- Inundation areas within the grassland sward creating temporary pools supporting wetter plant communities
- Open grassland
- Flower rich grassland.

There are areas of loose bare substrate on the top of the plateau and slopes and pools were observed within the grassland. Scattered scrub was also present. The condition of the OMHPDL was assessed to be in Moderate condition, due to the presence of invasive species, as noted for the constituent unimproved acid grassland and semi-improved neutral grassland habitats.

Only about a third of OMHPDL on the plateau is within the project site, comprising a band of predominantly neutral semi-improved grassland with scattered scrub adjacent the access track along the northern edge of the plateau.

3.2.3 Wet Woodland HPI / Broadleaved woodland - semi-natural

A semi-natural broadleaved woodland that was dominated by willow *Salix sp.* species was present within the project site on the lower slopes and extending along a watercourse that flows through the west of the project site. The woodland meets the criteria to be wet woodland HPI (Joint Nature Conservation Committee, 2008b). This area was not recorded as an HPI in the desk study undertaken in January 2024.

Goat willow *Salix caprea* and grey willow *Salix cinerea* were the most abundant species, which have established from water flushing down the hillside and pooling in this area making the ground waterlogged for much of the year. Other species within this woodland include downy birch *Betula pubescens,* ash*,* rowan *Sorbus aucuparia*, pedunculate oak *Quercus robur* and sycamore *Acer pseudoplantus* with some conifers occurring rarely.

The understorey had large stands of bramble *Rubus fruticosus agg.* Ash saplings and ferns. The non-native Wilsons honey suckle *Lonicera nitida* was present, though a rare occurrence in the understorey.

The ground flora of the woodland was varied, what appeared to be run off water from the hillside ran through part of the woodland and a number of plants typical of wet/waterlogged conditions were present around these areas. Grasses were frequent throughout more open sections of the woodland.

Stands of Japanese knotweed, *Reynoutria japonica* (Target Note 14 on the Phase 1 Habitat Survey plan) and montbretia *Crocosmia sp*, (Target Note 8), both Schedule 9 invasive species, were present within the woodland understorey.

Water was also feeding off the hillside down on the edge of the woodland towards the north-western section of the woodland. Ivy leaved bellflower *Wahlenbergia hederacea* was located on the edge of the water. This species is currently listed as Near threatened in the revised 2021 vascular plant red list for Great Britain, however in the Red list for Wales this species is listed as of Least Concern as it is overall more frequent throughout Wales. The water ends into a small pool, where these is feathery bog moss *Sphagnum cuspidatum* present.

The area of semi-natural broadleaved woodland was assessed to be in moderate condition, due to the lack structural diversity and age classes and invasive species present within the woodland.

The condition of the wet woodland was assessed to be in moderate condition due to the lack structural diversity/age classes and invasive species present within the woodland.

3.2.4 Bare Ground

There were several paths and motorbike tracks throughout the project site. These comprised bare ground and had scattered vegetation along the edges. Trackways were present through the areas of felled woodland; these areas were churned up from forestry machinery with a large amount of brash and dead wood left along the trackways.

The areas of bare ground were in poor condition following their use as access tracks. Smaller patches of loose and bare substrate were present within other habitats and are in poor condition.

3.2.5 Bracken – Continuous

There was a large stand of continuous bracken *Pteridium aquilinum* within project site, north west of the semi-natural broadleaved woodland, with a limited number of other species growing. Though bracken stands can provide shelter for a range of flora and fauna species, the height and density of the stand with the project site and lack of floristic diversity observed during the survey, means this habitat was assessed as being in poor condition.

3.2.6 Coniferous Woodland – Recently Felled / Habitat Mosaic on Coal Spoil

The majority of the project site was made up of recently felled conifer plantation woodland that had been felled over the 2023/2024 winter. Vegetation was growing back but was patchy at the time of survey. Bilberry was located in patches and large amounts of deadwood were still present throughout this area. There was damage to the ground from machinery. There was a stand of Japanese knotweed on the boundary between the recently felled woodland and the wet woodland (Target Note 13 on the Phase 1 Habitat Plan).

Prior to felling, the woodland was a conifer plantation in bad health (the reason for felling) and was likely to resemble similar plantations in the area, which would suggest that condition prior to felling would be also Poor.

The recently felled coniferous woodland is currently an ecotone (a transition area between two biological communities), as it is transitioning into tall ruderal with patches of self-seeded broadleaved trees on coal spoil. As this is a transition habitat it is difficult to apply a condition assessment, but such habitats have a good biodiversity value and likely of higher value than when it was a conifer plantation. In the short term and without management the habitat will likely transition into more of a tall ruderal community and in the medium term develop into a scrub mosaic, supporting a different community of species. Mosaic habitats generally have a good biodiversity value. Eventually it is likely this would transition to become scrub dominated. Areas of self-seeded conifer and broadleaved trees may also develop, although the poor soils of the coal tip area would likely mean growth of broadleaved trees would be slow.

Part of the recently felled woodland in project site is within a Plantation on Ancient Woodland Site (PAWS) (see the Non-statutory Designated Sites within 2km drawing in Appendix A). The area within the PAWS was not distinguishable from other areas of the deforested slopes during the 2024 habitat survey.

3.2.7 Dry Ditch

There was a ditch at the toe of the slopes, adjacent the access track along the north of the plateau. The ditch was dry at the time of survey and is a seasonally wet ditch due to run off from the steep slopes above. The ditch is clogged with debris and there was a lack of in-ditch and marginal vegetation due to the overhead canopy from adjacent woodland.

The ditch extends to the north east of the plateau around the south east base of the hillside: that section was not visible during the 2024 survey due to overgrown vegetation.

The ditch was assessed to be in poor condition because of a combination of dense canopy, lack of marginal and in-channel vegetation and seasonality of water levels.

3.2.8 Neutral Grassland - Semi-Improved

There was an area of semi-improved neutral grassland that had developed on the plateau of coal mining spoil. The area had regenerated and was covered with grassland vegetation except on pathways used by walkers and motorbike riders; the ground in these areas was bare and coal spoil was still visible on the surface. This area was a mosaic of dry to wetter grassland and some areas appeared to be seasonally inundated. It was floristically diverse due to the industrial past of the project site which had created a mosaic of habitats ranging from dry to wet, although not as diverse as exemplar examples of this habitat type. Scattered scrub was also present. The grassland is a constituent of the Open Mosaic Habitat on Previously Developed Land HPI.

Some areas of the grassland showed signs that they were seasonally inundated, these areas had rare occurrences of marsh speedwell *Veronica scutellate*, and southern marsh orchids *Dactylorhiza praetermissa.* and a range of sedge species indicative of wet to seasonally inundated conditions. The areas where marsh speedwell and southern marsh orchids were recorded are outside of the project site.

Drier areas of the grassland had a higher abundance of grass species, the most abundant throughout the sward was sweet vernal grass *Anthoxanthum odoratum.* Sedges were still frequent throughout the entire sward. Within the sward forb species were diverse and in the drier areas included occasional meadow buttercup, common birds foot trefoil, and fairy flax *Linum catharticum.*

Where the grassland ran adjacent to the access track to the north of this area, scattered goat willow and scrub became more frequent and the sward height was taller, more tussocky and less diverse.

The condition of the semi-improved neutral grassland is moderate, limited by relatively low species diversity for this habitat and scrub encroachment.

Only about a third of semi-improved grassland on the plateau is within the project site, comprising a band south the access track, along the northern edge of the plateau. This includes the areas where scattered goat willow and scrub became more frequent and the sward height was taller, more tussocky and less diverse

3.2.9 Other Tall Herb and Fern - Ruderal

A stand of tall ruderal vegetation made up of a mixture of tall forbs was located on the west edge of the project site adjacent the access track and broadleaved woodland. The tall ruderal vegetation in this area was in poor condition due to the low species diversity, and lack of any clear vegetative classification groups.

3.2.10 Running Water

A man-made watercourse runs through the west of project site within the wet woodland, which flows beneath the plateau access track via culvert and continues along the west side of the plateau is then connected to the wider drainage network. The dry (seasonally wet) ditch adjacent the plateau access track discharges into the watercourse. The watercourse through the woodland is filled with material that has collected from the slope, such as loose scree/rubble. No macrophytes were recorded within the watercourse and there is a dense overhead canopy

from the wet woodland. Illegal fly-tipping is present on the south western stretches of the watercourse.

The condition of the running water is moderate, limited by the lack of morphological diversity and macrophytes, and presence of fly-tipped material.

3.2.11 Scrub – Dense/Continuous

Dense scrub was present around the slopes of the plateau which appeared unmanaged. Bramble was a dominant component throughout. Other species included hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa,* and goat willow, holly *Ilex aquifolium* and buddleia *Buddleja davidii* occurring occasionally.

Areas of dense scrub were assessed to be in moderate condition due to the presence of the non-native species, buddleia being present, and the lack of clearings, glades or rides.

Only small areas of dense scrub are within the project site, located at the northwest corner of the plateau, south of the access track, and on the western edge of broadleaved woodland

3.2.12 Habitat Condition Assessment Summary

Table 3-3. summarises the condition assessments of the habitats in the Project Site.

Table 3-3 Condition assessment of habitats within the project site

Habitat type	Location within project site	Condition Assessment (G = Good, P= Poor, M= Moderate)	Notes
Acid grassland – unimproved (HPI; part of OMHPDL HPI)	Side slopes at the north west corner of the plateau	M	INNS present and reducing condition value. Scrub encroaching.
Open Mosaic Habitat on Previously Developed Land (OMHPDL) HPI	Across the plateau south of the access track	M	Presence of invasive species (outside of project site), relative low species diversity for this habitat, scrub encroachment
Broadleaved woodland – semi-natural (wet woodland HPI)	On the lower slopes north of the plateau, extending along the existing watercourse in the west of the project sitehe	M	Lack of structural diversity/age classes and invasive species present within the woodland.
Bare ground	Throughout the project site	P	Due to use as access tracks.
Bracken – continuous	On the slopes north west of the broadleaved woodland	P	The height and density of the species dominates and creates a lack of diversity for other species.
Coniferous woodland – recently felled	Large area which covers the majority of the steep slopes in the project site.	N/A	The area was previously in poor condition and therefore felled. This is currently an ecotone in transition, and the ground flora will likely transition into more of

Habitat type	Location within project site	Condition Assessment (G = Good, P= Poor, M= Moderate)	Notes
			a tall ruderal habitat in the short term.
Scrub - dense / continuous	North west corner of the plateau and on the western edge of the broadleaved woodland	M	The condition assessment was due to the presence of the non-native species, buddleia being present, and the lack of clearings, glades or rides.
Dry ditch	Located in the south of the project site between the plateau and the broadleaved woodland	M	There is no marginal vegetation present.
Neutral Grassland - Semi-Improved (part of OMHPDL HPI)	Across the plateau south of the access track	M	
Other tall herb and fern - ruderal	West edge of the project site adjacent the access track and broadleaved woodland.	P	There is a low species diversity, and a lack of any clear vegetative classification group.
Running water	In the west of the project site, through the semi-natural broadleaved woodland and scrub.	M	Lack of morphological diversity and macrophytes, presence of fly-tipped material.

3.2.13 Other Habitats of Principal Importance from desk study

In addition to the HPI habitats recorded within the project site, the desk study returned a record of purple moor grass and rush pastures HPI along the lower western edge of the project site. The record was from the Phase 1 Habitat Survey of Wales 1979-1997 digital data and so is not recent. This habitat is also a feature of the Mynydd Ystradffernol SINC which includes part of the project site.

The 2024 botanical survey (Binnies UK Ltd, 2024a) confirmed that this HPI habitat does not currently extend into the project site. Purple moor grass was recorded within the understorey of a young plantation woodland north of the project site, suggesting the HPI habitat has potential to have been present previously. However, the young plantation area is not within the Mynydd Ystradffernol SINC and so this may not have been the case.

3.2.14 Relationship to South Central Area Statement Ecosystem Profiles

The South Central Area Statement (Natural Resources Wales, 2024) identifies seven key ecosystems. Four of these are relevant to the project site.

The Valley Hills

The Valley Hills ecosystem is a mixture of post-industrial and semi natural habitats (Natural Resources Wales, 2022a). It is characterised as a complex mosaic of heath, bracken, woodland,

scattered scrub, acid grassland and wet flushes, and is of high biodiversity value and delivers wider ecosystem services and benefits. It is commonly found on valley slopes connecting upland and lowland species. The ecotone that is developing on the recently deforested coniferous woodland in the project site, with its connectivity to a band of retained wet woodland and grasslands (see Woodlands and Grassland), is starting to become characteristic of the Valley Hills ecosystem.

Woodlands

The woodland ecosystems within the south central area include a mixture of native and non-native woodlands of varying ages within a range of ecological conditions (Natural Resources Wales, 2022c) and it is noted that woodlands are typically extensive, diverse and well connected. The significance of forestry plantations is recognised, though they are not a natural woodland typology. Within the project site there is a stand of broadleaved wet woodland noted to be predominantly willow with limited structural diversity. Whilst a typical habitat of the south central area, the lack of diversity, relatively small area, and isolation from other woodland habitats since the plantation above it was cleared, the limit consistency with the ecosystem profile description for the south central area.

In the surrounding landscape, large stands of coniferous woodland plantation remain to the northwest, immediately adjacent to the site. To the south and southeast, large stands remain though these are fragmented by urban landscape and large stands of recently felled woodland.

Grasslands

The Grasslands Ecosystem Services Profile (Natural Resources Wales, 2022b) encompasses varying quality of grassland within the south central area, noting that where higher quality grasslands have survived, they are part of the cultural landscape and typically only occur when grazing, cutting or other disturbance prevents the natural succession of habitats into a closed canopy woodland. The plateau at Penyrenglyn includes lowland acidic grassland, large areas of semi-improved natural grassland, but also scattered scrub and coniferous trees, and large stands of dense and continuous scrub bordering the habitat. The northern third of the plateau is within the project site, including a small area of lowland acidic grassland, and semi-improved natural grassland with scrub.

Outside of the site, the Mynydd Ty-isaf SSSI is located within grassland habitat approximately 1km to the southwest. Designated for its ability to support a range of vegetation types and provide nesting sites for notable bird species, this grassland habitat is characterised as a mixture of grassland and marsh, and acid grassland habitat.

Freshwater

Whilst primarily targeted at river ecosystems, the significance of flood risk within the south central area, and the risks to larger freshwater habitats such as sediment transport, pollution incidents, changes in flow and water levels due to smaller ecosystems upstream, and the importance of these ecosystems in supporting notable species throughout south central, are discussed within the freshwater ecosystem profile (Natural Resources Wales, 2021). Typically, watercourses in south central are considered largely modified, losing variety of form and structure, and therefore biodiversity, within the river ecosystem. This is attributed to large scale land management, including forestry plantations.

The watercourse that runs through the west of the project site is characteristic of small, modified watercourses within areas of large scale land management, with limited morphological diversity and no macrophytes.

3.3 Species and Species Groups

3.3.1 Flora – Protected and Notable Plant Species

The desk study returned four records of protected and notable flora within 2km of the project site. Bluebell *Hyacinthoides non-scripta,* the closest record 975m west of the project site and Stag's-horn clubmoss *Lycopodium clavatum* 1.6km to the northeast of the project site.

During the survey two notable plant species were observed. Ivy leaved bellflower *Wahlenbergia hederacea* was located on edge of water run off channel from hillside on the west edge of the broadleaved woodland in the project site (target note 17 on the Phase 1 Habitats Survey plan). This species is currently listed as Near threatened in the revised 2021 vascular plant red list for Great Britain, however in the Red List for Wales this species is listed as of Least Concern as is overall more frequent throughout Wales.

Southern marsh-orchids *Dactylorhiza praetermissa* were in sections of the semi-improved neutral grassland on the plateau that were seasonally inundated, but outside the project site (target note 1, 2 and 16) on the Phase 1 Habitats Survey plan). Whilst not designated, it is notable as the species requires a symbiotic mycorrhizal fungi which is essential for terrestrial orchid seed germination. This relationship is formed on habitats which are difficult to replicate and are protected.

3.3.2 Badger

No records of badger were returned within 2km of the site.

No evidence of badger was recorded within the survey area. However, both the broadleaved and plantation woodland parcels may facilitate sett creation and are deemed suitable for foraging badgers. Suitable habitat for sett creation could also be present within the wider landscape within dry areas of woodland.

Overall, the project site may provide suitable habitat to support foraging and sett creation.

3.3.3 Bats

The desk study returned 5 records for bats within 2km of the project site. The closest roost record returned a common pipistrelle roost approximately 1.5km south-east of the project site and the closest record of pipistrelle at 700m north-west of the project site.

A ground level tree assessment for roosting bats of trees potentially impacted by the proposed works was undertaken in August 2024 (Binnies UK Ltd, 2024b). The survey area comprised the area of broadleaved woodland and adjacent scrub within the project site, shown on Drawing 4021526-BUK-ZZ-DR-EN-00009 (Appendix A).

This assessment highlighted 35 trees containing suitable features for roosting bats which, if impacted by the proposed work may require further surveys. Of these trees, there are 15 which fall within the access route as detailed in Table 3-4. In addition to trees providing potential suitability, there were two rock filled gabion basket structures used to reinforce the stream

channel in the northern extent of the Survey Area which also contained suitable features for roosting bats.

Table 3-4 Trees or structures with potential roosting features for bats within the proposed working areas

Tree tag	Approx. Grid reference	Species	PRF
3590	SS 94781 98107	Willow species *Salix* sp.	PRF-M
3511	SS 94753 97971	Goat willow *Salix caprea*	PRF-M
3592	SS9478798107	Willow sp.	PRF M
3530	SS 94821 97960	Willow species	PRF-I
3516	SS 94771 97978	Willow species	PRF-I
3509	SS 94760 97977	Willow species	PRF-I
3555	SS 94721 98047	Willow species	PRF-I
3586	SS 94790 98096	Willow species	PRF-I
3591	SS 94801 98107	Willow species	PRF-I
3595	SS9477898113	Scots pine *Pinus sylvestris*	PRF I
3593	SS 94778 98114	Willow species	PRF-I
3574	SS 94770 98064	Willow species	PRF-I
3596	SS 94773 98112	Willow species	PRF-I
3600	SS 94795 98124	Willow species	PRF-I
Untagged 2	SS 94725 98047	Willow species	PRF-I
Structure 1	SS 94778 98111	NA	Low suitability
Structure 2	SS 94769 98100	NA	Low suitability

Foraging habitat of moderate suitability is present within the project site in form of the grasslands and woodland glades and edges. The nearby river Rhondda SINC and woodland parcels provide excellent connectivity to the wider landscape for foraging and commuting bats.

Overall, the project site provides suitable habitat to support foraging and roosting bats and is likely to support a species assemblage typical of urban fringe sites.

3.3.4 Birds

The range of habitats present within the project site such as open semi-natural grasslands, scrub, broadleaf woodland, habitat mosaics, including ecocline and woodland edge, all support bird species. Additionally, habitats within the wider landscape including sparsely vegetated hillsides, rivers, heathland and scrub habitats provide further suitable habitat for nesting and over-wintering birds. This includes suitable habitat for a range of notable bird species including Schedule 1 species within the wider survey area.

The desk study returned 14 records of a total of 13 species of bird within 2km of the site within the last ten years including 3 species listed under Schedule 1 of the WCA comprising peregrine *Falco peregrinus*, red crossbill *Loxia curvirostra*, and red kite *Milvus milvus*.

The remaining species that were returned are all listed under Section 7 of the Environment (Wales) Act 2016. The closest records to the site were for wood warbler *Phylloscopus sibilatrix* and house sparrow *Passer domesticus,* both recorded approximately 1km west of the site.

During the field survey a number of notable bird species were recorded across the various habitats present on site and in the wider landscape including; house sparrow *Passer domesticus*, wood pigeon *Columba palumbus,* song thrush *Turdus philomelos*, swallow *Hirundo rustica*, and herring gull *Larus argentatus*.

The PEA highlighted the Mynydd Blaenrhondda and Mynydd Tylsaf SINC located on the west side of the Rhondda Fawr Valleym north-west of the project site, as providing clear-felled areas of habitat. Several nightjar records from the data search were recorded within this SINC (ARUP, 2022).

The northeastern half of the project site is within the Mynydd Ystradffernol SINC and is noted in the PEA (Arup, 2022) as an upland plantation on deep peat, mainly managed as a Sitka spruce plantation. As noted in section 1.3, the conifer plantation within the project site was felled in winter 20234/24, creating habitat similar to that recorded with the Mynydd Blaenrhondda and Mynydd Tylsaf SINC.

Nightjar surveys undertaken in 2024 (Binnies UK Ltd, 2024c) recorded at least one breeding territory within the project site, with activity recorded in the northern half of the project site. Nightjar was also heard calling and singing immediately adjacent to the project site boundary to the north and northeast, suggesting a territory adjacent the project site.

Areas of clear-fell, coppiced and young forestry plantations are the principal habitats required to support breeding nightjar in this area. The predominant habitat (coniferous woodland recently felled) within the project site is suitable to support breeding nightjar and evidence of nightjar presence and breeding activity was recorded during the 2024 surveys. Additionally, the project site offers good connectivity to the wider landscape which also comprises areas of clear-fell.

Overall, habitats within the project site, including broadleaf woodland, scrub and open grassland with scrub provide suitability to support nesting birds. Habitats within the wider landscape including sparsely vegetated hillsides, rivers, heathland and scrub habitats provide further suitable habitat for nesting and over-wintering birds. This includes suitable habitat for a range of notable bird species including Schedule 1 species within the wider survey area, (Arup 2022). The project site also provides suitable habitat to support breeding nightjar and is connected to areas of similar habitat in the wider landscape.

3.3.5 Fish

No recent records of fish were returned within 2km of the site. However, historical records within 5km of the site from the past 20 years returned brown trout *Salmo trutta*, salmon *Salmo salar* and European bullhead *Cottus gobio* within the River Rhondda SINC (ARUP, 2022).

No fish were observed during the PEA (ARUP, 2022). The running water within the project site is considered highly unlikely to support freshwater ecology associated with the wider River Rhondda catchment and is considered inaccessible for fish due to the presence of extensive culverts which present an impassable barrier.

However, spot checks made from accessible areas adjacent to the River Rhondda Fawr (approximately 200m south of the project site boundary) indicate the presence of varied habitats consisting of riffles, pools, glides and runs, which offer suitable habitat for salmonid species, European bullhead *Cottus gobio* and European eel *Anguilla anguilla*.

Overall, it is unlikely that the project site provides suitable habitat to support fish.

3.3.6 Fungi

The desk study returned no records of protected fungi from within the 2km search area.

No protected lichens or fungi were observed in the project site during field surveys. However, it is considered likely that the grassland and woodland habitats on site, as well as habitats surrounding the site which have been influenced by previous industrial uses, could support notable species. During the 2024 habitat survey (Binnies UK Ltd, 2024a) wax caps were present within the acidic grassland on the plateau slopes (Target Note 5 on Phase 1 Habitat Survey Plan), but outside the project site.

3.3.7 Hazel Dormouse

No records of hazel dormouse were returned within 2km of the project site during the desk study using data available to Binnies UK Ltd. However, liaison with Natural Resources Wales in 2024 returned two licence records, the closest of which was 3.2km from site (Pont Bell clearance Treherbert - Network Rail, 2021) which recorded evidence of presence.

No dormice were found during Ecological Clerk of Works monitoring for limited vegetation clearance required to facilitate the GLTA for bats undertaken in 2024.

Ideal habitat for foraging dormouse is from new growth following traditional woodland management, such as coppicing of oak, hawthorn, sycamore, willow and from hazel *Corylus avellana,* shrubs, bramble and honeysuckle *Lonicera periclymenum*. Nesting is preferable in broadleaved woodlands, however the transition areas between conifer and broadleaved woodland are also important areas.

The broadleaved woodland parcels within the project site contained sections of a bramble understory and dense scrub. The patches of dense scrub towards the southwestern extent of the project site were of relatively low density and were interspersed with grasses and willow, however, both provide foraging and nesting resources for hazel dormouse.

Previously there was a transition between broadleaved and coniferous woodlands, but the recent felling of the coniferous woodland has removed this transitional habitat and reduced the woodland habitat. Additionally, the broadleaved woodland section of the project site is wet for most of the year, likely due to run off from the tip face, and would not provide suitable hibernation sites for hazel dormouse. The habitats are now fragmented which is a barrier to dispersal for this species.

A dormouse habitat suitability assessment was carried out in November 2024 (Amber Environmental Consultancy Ltd, 2024) which concluded that the scrub woodland has negligible habitat suitability for hazel dormouse.

3.3.8 Lichen

One record was returned by the 2024 2km data search, a record of stag's-horn clubmoss *Lycopodium clavatum* 1.6km NE. Records from historical surveys on site recorded notable plants including two nationally rare lichen species *Micarea subviridescens* and *Moelleropsis humida*, (Arup 2022). During the 2024 habitat survey, mosses and lichens were covering a lot of the patches of bare ground in the areas of unimproved acidic grassland on plateau slopes.

3.3.9 Invasive Non-Native Species

The desk study returned thirteen records of INNS within 2km of the project site. Indian balsam *Impatiens glandulifera*, Cherry Laurel *Prunus laurocerasus,* Rododendron *Rhododendron ponticum,* buddleia, Japanese knotweed, Montbretia *Crocosmia pottsii x aurea = C. x crocosmiiflora.*

During the 2024 habitat survey (Binnies UK Ltd, 2024a) Japanese knotweed (Target notes 13 and 14 on the Phase 1 Habitat Plan) and montbretia (Target note 8) were recorded within the broadleaved woodland within project site.

3.3.10 Invertebrates

The desk study returned 13 records of notable invertebrates, including records for 7 species listed under Section 7 of the Environment (Wales) Act 2016: cinnabar *Tyria jacobaeae,* small heath *Coenonympha pamphilus*, grayling *Hipparchia semele*, buff ermine Spilosoma lutea, dingy skipper *Erynnis tages*, tormentil mining bee *Andrena tarsata* and small pearl-bordered fritillary *Boloria selene*. All records were greater than 1.5km from the project site.

Surveys for invertebrates were undertaken during July and August 2024 on the plateau (Conopsent Entymology, 2024). 135 species were recorded with three species of importance, small heath butterfly *Coenonympha pamphilus,* solitary wasp *Gorytes laticinctus* and a fly *Norellia spinipes.* These important species have habitat preferences for fine-leaved swards of fescues and bents within open habitats, friable soils and structural complexity within open habitats, and daffodil bulbs within shaded woodland floor, respectively.

The project site comprises a rich invertebrate fauna of both brownfield and saturated peats species. The plateau supports species from a wide landscape scale, as a hunting resource for moorland dragonflies *Anisoptera sp.*, or as a pollinator resource for moorland hoverflies *Syrphidae sp.,* and this elevates the site value beyond its resident, breeding fauna.

The plateau comprises three biotypes, 'open habitats' / OMPDL, 'tree-associated' / wet woodland, and 'wetland' / wet areas within the OMPDL, with the open habitat biotype dominating the invertebrate associations. However, the tree associated, and wetland biotypes contribute to the overall value of the site and provides opportunities for invertebrates.

The most prominent habitat across all areas of the plateau is the tall sward and scrub habitat. with a strong total of 66 species of association recorded.

The short sward and bare ground habitats support 14 species of which one (small heath *Coenonymphic pamphilus)* holds a nationally significant status and another (*Gorytes laticinctus)* is an indicator species for good habitat quality.

The woodland habitats comprise a cross section of habitats from arboreal canopy to deadwood. Both supporting a suit of invertebrate species and help to elevate the status of the plateau to support invertebrates. A total of 25 species were recorded from the various woodland features.

The key wetland biotope is the 'acid and sedge peats', which include some strong indicators of habitat quality including some species only found on good-quality saturated peat and bog pool sites.

The site is considered to be of District (low) importance and not one of a higher status, owing to the site only possessing a single species (small heath butterfly) that is realistically of nationally significant status. The site is, however, likely to possess more scarce species, but it is unlikely that a very long list or those of high conservation value (Red Data Book) are present.

The valuation of the plateau takes into consideration the range of species recorded, including the scarce species, the overall assemblages, and the importance of the habitats to the species. It also considers the context of the year's weather, the site, and/or its species in relation to the local area and further afield.

The PEA (ARUP, 2022) noted that the Blaen Cynon SAC, 7.2km north of the project site, is designed for its populations of marsh fritillary *Euphydryas aurinia* butterfly and that the project site could provide suitable habitat for this species. However, no scabious species – the main foodplants of marsh fritillary – were found during the 2024 habitat and flora survey, and the species was not recorded during surveys. Therefore, the project site is not considered likely to support a significant population of marsh fritillary butterfly.

3.3.11 Riparian Mammals

A total of 3 records of water vole *Arvicola amphibius*, and 1 record of otter *Lutra lutra* were returned within 2km of the project site. The closest water vole record was 1.5km north of the site and the closest otter record 1.6km south east of the project site. No records of other riparian mammals including American mink *Neovison vison* were returned.

No evidence of otter or water vole was noted during the 2024 survey, however not all of the waterbodies within the project site were easily accessible during the survey. The Afon Rhondda Fawr, although not directly assessed during the survey, provides suitable foraging habitat for otter, with potential for resting sites within the wider landscape. However, the presence of the busy A4061 and residential houses and gardens between the river and the project site causes a barrier to dispersal and disturbance to these species and reduced the likelihood of otter presence within the project site.

The suitability of habitats to provide resting sites for otter within the project site is somewhat reduced by the lack of features and limited habitat connectivity. There was a lack of in-ditch and marginal vegetation due to the overhead canopy from the wet woodland and this seasonally wet ditch was clogged with debris from the surrounding slopes. However, given the slow flow of waterbodies noted on site, suitable habitat for foraging and burrowing water vole may be present on site.

Overall, the habitats within the project site are unlikely to provide resting sites for otter but may be suitable for foraging and burrowing water vole.

3.3.12 Reptiles and Amphibians

One record of slow worm *Anguis fragilis*, two of common toad *Bufo bufo*, one of palmate newt *Lissotriton helveticus*, and two records of common frog *Rana temporaria* were returned within 2km of the project site, the nearest being a slow worm 0.9km west of the project site. No records of great crested newt *Triturus cristatus* were returned.

The PEA (ARUP, 2022) reported that grassland habitats, particularly towards the south-western extent of the project site, and glades within woodland parcels are considered likely to support foraging and basking of common and widespread species of reptiles and amphibians including

grass snake, slow worm and common toad. Adder *Vipera berus* may also be present in grass and heathland habitats surrounding the project site and may be present within the project site. Slow worm was observed on site (north central slope/central slope) on 7th November 2023 during a site survey by C Diamond and L Olds (pers. comm). Woodland parcels and log piles within the project site are considered to provide suitability for hibernation for these species. Suitable terrestrial habitat for active and hibernating amphibians, potentially including great crested newts, was noted within the project site including woodland and grassland habitats.

Standing waterbodies within 500m of the project site were not observed by the PEA, thus, it should be noted that Habitat Suitability Index Assessments were not completed.

Since the PEA the conifer woodland in the project site has been felled and so there are now fewer woodland parcels and glades, replaced with more open habitats seemingly transitioning to more of a tall ruderal habitat type. The felling has left brash and tree stumps that offer suitability for refugia whilst the new bare ground offer potential as basking areas.

Overall, the habitats within the project site are likely to support foraging and basking reptiles and there is suitable terrestrial habitat for active hibernating amphibians, potentially including great crested newts.

3.3.13 West European Hedgehog and Other mammals

A total of 3 records of other mammals were returned as part of the desk study: all three were observations of European hedgehog *Erinaceus europaeus*, the closest 60m to the west of the site.

There were no observations of mammals during the 2024 field surveys although there are suitable habitats within the project site for hedgehog and other mammals such as polecat *Mustela putorius*. These include woodland parcels and grassland, with connecting habitats including scrub, bracken and ruderal habitats providing further suitability.

4 Assessment of Effects and Mitigation Measures

As part of the Environmental Action Plan for the project, the contractor will be required to develop and implement construction method statements that will include best practice methods to prevent environmental damage. The following measures described are where further receptor specific mitigation measures are required.

4.1 Designated Sites

4.1.1 Statutory Designated Sites

Assessment of Effects

There are no statutory designated sites which lie within or are hydrologically linked to the project site.

The Mynydd Ty-Isaf SSSI is 700m to the west of the project site. However, this site is a primarily upland site and is not hydrologically downstream of the project. Therefore, the extent and condition of habitats within the SSSI will not be affected by the project. Disturbance and dust from construction wors will not affect this SSI due to the distance between the project site and the SSSI.

Mitigation

No mitigation is required.

4.1.2 Non-Statutory Designated Sites and Ancient Woodland

Assessment of Effects

The area of recently felled conifer woodland within the project site is within the Mynydd Ystradffernol SINC. However, baseline surveys show that the small part of the SINC that is within the project site do not contain Sitka spruce (it was an area of larch plantation), purple moor-grass, marshy grassland or remnant peat bogs for which the SINC is designated. Rather, it now comprises an ecotone on coal spoil material that is transitioning into tall ruderal with patches of self-seeded broadleaved trees on coal spoil. This habitat is not a feature of the SINC designation but is likely of higher value than when it was a larch plantation and now provides an area of habitat diversity within upland plantations.

The recently formed ecotone habitats within the SINC will be subject to disturbance and some changes in habitats from the creation of temporary access pathways and working areas, and the installation of a permanent stoned access track, gravel filter drains and vegetated drainage channels and blockstone cascades, and headwalls for subsurface drains. Disturbance of habitat will in effect reset the ecological succession in the disturbed areas; this will not cause an adverse effect and will contribute to maintaining structural diversity within the habitat mosaic. The stoned access track, blockstone cascades and drains will add open and stony areas to the habitat, replacing natural growth. This will be a neutral change in the context of a habitat mosaic where having variety of habitat niches contributes to the condition and resilience of the habitat.

Overall, there will be no adverse effect on the Mynydd Ystradffernol SINC.

There is an area of Plantation on Ancient Woodland Site within the Project Site and the SINC. This area was also felled in 2023/24 and is not distinguishable from other areas of the deforested slopes. It is being left to regenerate naturally as per NRW policy for PAWS. A section of the existing forestry track runs through the PAWS and three cross drains will be installed across the track within the PAWS area. This will not affect the extent or condition of the PAWS.

There will be no adverse effect on the PAWS.

Mitigation

No mitigation is required.

4.2 Habitats

4.2.1 Lowland Dry Acid Grassland HPI / Acid grassland - unimproved

Assessment of Effects

The work to install the below ground tank, pipework and outfall at the northern edge of the plateau are adjacent to the area of lowland acid grassland on the north west side slopes of the plateau. The permanent footprint does not encroach into the habitat, but temporary works could encroach into the habitat if not managed. This would result in a reduced habitat condition and potentially reduced extent.

Mitigation

The area of lowland acid grassland will be fenced off prior to the start of works to prevent access, and the fencing will be maintained for the duration of works. The area to be fenced off will be advised by a SQE as part of per-works surveys. This will avoid any adverse effects and the project will not result in a reduction in extent, diversity, condition, or connectivity of this habitat

4.2.2 Open Mosaic Habitat on Previously Developed Land (OMHPDL) HPI

Potential effects and mitigation for the unimproved acid grassland component of the OMHPDL are described in section 4.2.1

The work to install the below ground tank, pipework and outfall at the northern edge of the plateau will require a working area within the semi-improved neutral grassland component of the OMHPDL, and also part of the bare ground component (access track and informal paths). This will include an excavation area for the tank, a crane pad, vehicle movement and access areas material laydown areas (e.g. below ground tank sections), topsoil stockpiles, and welfare units.

The works will cause disturbance to and a temporary loss of an area of up to 150m by 25m (3,7500m^2) of this habitat, based on preliminary construction area layout options. The area affected is predominantly where there are larger areas of bare ground near the entrance form Herbert Street, and the grassland where scattered goat willow and scrub was more frequent, and the sward height taller, more tussocky and less diverse than other areas of the plateau, in the 2024 survey.

The semi-improved neutral grassland has developed on coal spoil that had been reprofiled into plateau during mine closure. The permanent works are all below ground and the plateau will be reinstated to the existing ground levels and profile using the existing material. The working areas will then be allowed to recolonise naturally, with seeds from the soil and adjacent areas establishing. This in effect this resets the vegetative succession, including removal of goat willow and scrub that had started to dominate south of the access track, and will not result in a reduction in habitat extent. The Grasslands Ecosystem Services Profile for the South Central Area (NRW, 2022b) notes that disturbance of grassland habitats prevents the natural succession of habitats into a closed canopy woodland. Overall, the project will not result in a reduction in extent, diversity, condition, or connectivity of this habitat.

Mitigation

A temporary works plan will be developed prior to work commencing to minimise the footprint of the working areas whilst ensuring safe construction.

To facilitate natural reestablishment, the top layer of material (topsoil) will be stripped from the excavation areas and adjacent machinery working areas and stored on the plateau adjacent the access track. This topsoil will then be replaced when the excavation is backfilled and the working area restored. The disturbed areas will be fenced off to prevent being trampled on as vegetation reestablishes. Regrowth will be monitored to inform when the fencing can be removed.

No planting or seeding is proposed to avoid introducing species that are not local to the area and commercial variants of wildflowers and grasses that are not true to the original wild forms and which can become dominant.

Overall, with reestablishment, the project will not result in a reduction in extent, diversity, condition, or connectivity of this habitat.

4.2.3 Wet Woodland HPI / Broadleaved woodland - semi-natural

Assessment of Effects

Areas of woodland will be permanently lost to the footprint of the new stoned access track, the new filter drain along the forestry track, and one of the gravel (lateral) drains. The area of woodland lost to the permanent works will be approximately 1,300m^2.

Areas of woodland will also be coppiced along a 6m wide corridor along the existing watercourse. Facilitation pruning, e.g. crown lifting, further coppicing will also be needed to provide space either side of the access tracks for vehicle movement (e.g. the 'swing' of attachments. Given that the woodland is willow-dominated and is of a type that will regrow, this will constitute woodland management and not loss.

The area of land immediately north of the existing woodland, outside of the main coal tip area, will not have any additional drainage as part of the project The status of the semi-natural broadleaved woodland as wet woodland will therefore not be altered.

Mitigation

Trees removed are from the wet woodland which is willow-dominated and is a common woodland type within Rhondda Cynon Taf which spreads naturally. Therefore, it is not considered that a significantly greater area of trees is required to be planted than that lost to the works to maintain the extent of the woodland. Compensation planting will be provided within a 1,900m^2 area of cleared plantation south of the existing forestry track and extending east from the existing wet woodland to the edge of the PAWS. This will provide habitat connectivity

The working area will be kept to the minimum area required, and where trees can be pruned or coppiced rather than removed this will be done so, under arborist advice. A final record of trees removed will be kept to inform the final replanting details.

A tree protection plan will be implemented to ensure the protection of the retained woodland and trees.

Overall, with compensation replanting and a tree protection plan, the project will not result in a reduction in extent, diversity, condition, or connectivity of this habitat.

4.2.4 Bare Ground

Assessment of Effects

Areas of bare ground are present within the OMHPDL within the plateau and slopes, and within the recently felled coniferous plantation.

The proposed works will affect the bare ground habitat within the felled coniferous plantation where sections of these tracks will have a new stoned running surface. However, the tracks are currently of Poor quality as a habitat and the regarding and surface improvements will not be an adverse effect.

Areas of bare ground within the OMHPDL within the plateau will be temporality lost to the temporary working area for installing the below ground tank. However, this short term, localised effect will be reversed once the compound is demobilised.

Overall, there will be no adverse effect on the extent or condition of bare ground

Mitigation

No mitigation is required.

4.2.5 Bracken- Continuous

Assessment of Effects

No works will be undertaken within the stand of bracken north west of the wet woodland, and therefore there will be no impacts.

Mitigation

No mitigation is required.

4.2.6 Coniferous Woodland – Recently Felled / Habitat Mosaic on Coal Spoil

Assessment of Effects

As described for the Mynydd Ystradffernol SINC, the ecotone on coal spoil material that is transitioning into tall ruderal with patches of self-seeded broadleaved trees habitats will be subject to disturbance in temporary working areas and some changes in habitats from the permanent drainage structures. This will be a neutral change in the context of a habitat mosaic where having variety of habitat niches contributes to the condition and resilience of the habitat, and periodic disturbance can help maintain a mosaic. The project will not adversely affect the extent, diversity or condition of the ecotone habitats within the project site or their ability to transition to other mosaic habitats.

Mitigation

No mitigation is required.

4.2.7 Dry Ditch

Assessment of Effects

The dry (seasonally wet) ditch runs parallel to the access road between the wet woodland and the plateau. The ditch extends to the north east of the plateau around the south east base of the hillside: that section was not visible during the 2024 survey due to overgrown vegetation.

Silt and flow obstructions that have built up in the ditch will be removed as part of the works, and vegetation cleared, to maintain capacity. The ditch will continue to receive water from the slopes above and the new drainage system, although in a more controlled way than currently with the drainage system reducing peaks.

Works along and adjacent to the ditch have the potential to cause sediment and accidental pollution release into the ditch. Although dry at the time of the 2024 survey, the ditch may contain flows during the construction period, and it connects to other watercourses.

The habitat condition assessment noted that the ditch is clogged with debris from the slopes of the project site and that there was a lack of in-ditch and marginal vegetation due to the overhead canopy from adjacent woodland. Therefore, the proposed works will not adversely affect the existing condition or extent of the ditch and clearing it out and may provide some improvement.

Mitigation

A water quality and silt control plan will be developed, approved by NRW and implemented during construction. See also Section 4.2.10, Running Water. Overall, with implementation of mitigation during construction, the project will not result in a reduction in extent, diversity, condition, or connectivity of this habitat.

4.2.8 Neutral Semi-Improved Grassland

Assessment of Effects

As described for the Open Mosaic Habitat on Previously Developed Land (OMHPDL) HPI, works to install the below ground water tank will cause disturbance to and a temporary loss of up to 3,750m^2 of this habitat (including areas that were bare ground and scrub at the time of 2024 survey), based on preliminary construction area layout options. The area affected is predominantly the where scattered goat willow and scrub was more frequent and the sward height was taller, more tussocky and less diverse than other areas of the plateau in the 2024 survey. The area affected will be allowed to regenerate naturally once works are complete.

Overall, the project will in effect 'reset' the grassland and vegetative succession on the coal spoil material, and will not result in a reduction in extent, diversity, condition, or connectivity of this habitat.

Mitigation

The mitigation to facilitate natural regeneration is as described for Open Mosaic Habitat on Previously Developed Land (OMHPDL) HPI, section 4.2.2. Overall, with reestablishment, the project will not result in a reduction in extent, diversity, condition, or connectivity of this habitat.

4.2.9 Other Tall Herb and Fern - Ruderal

The edges of the stand of tall ruderal vegetation in the west edge of the project site adjacent the access track may be cut back as part of temporary works to facilitate coppicing the 6m wide corridor of woodland along the watercourse and for vehicle movement areas at the site entrance from Herbert Street. This vegetation will regrow once works are completed and there will be no adverse effect on habitat condition or extent.

Mitigation

No mitigation is required.

4.2.10 Running Water

Assessment of Effects

The watercourse in the west of the project site within the wet woodland will have copping of the woodland either side of it (6m overall coppice width), careful thinning of vegetation along its length where it is causing a flow obstruction, and removal of other flow obstructions.

One of the blockstone cascades will connect into the upstream end of the watercourse providing a direct flow input. The blockstone cascade is designed to dissipate energy to avoid downstream erosion. Access for the works to carry out coppicing and remove flow obstructions will follow the watercourse corridor: either from the north continuing down from the working area to install the new blockstone cascade or from the south from the access track.

The habitat condition assessment noted that the watercourse is filled with material that has collected from the slope, that no macrophytes are present and that it lacks morphological diversity. In that context, opening up the canopy along the watercourse and removal of debris will not affect the extent or condition of the watercourse and may provide some improvement.

A new outfall will be constructed on the section of watercourse where it runs along the west side of the plateau, south of the access track. This will be where water is discharged from the below ground tank. The below ground tank and outflow from it will control the flow rate of discharged water to prevent increases in downstream flood risk which will also prevent watercourse erosion.

Works along and adjacent the watercourse have potential to cause sediment and accidental pollution release into the watercourse, and cause damage to boggy areas adjacent the main channel, affecting the condition. Works and topsoil storage close to the dry (seasonally wet) ditch adjacent the plateau access track also have potential to cause sediment release.

Mitigation

A water quality and silt control plan will be developed, approved by NRW and implemented during construction. This will include use of silt mats or silt fencing where appropriate, exclusion fencing along the watercourses adjacent the plateau when works access is not needed, covering stored topsoil if needed (e.g. if heavy rain or very dry weather is forecast) and using track mats where machinery needs to traverse boggy areas. The set back distances of exclusion fencing from the edge of watercourses will be agreed with a SQE, taking into account the space needed for safe construction and the aim to minimise working area encroachment onto the plateau grassland (see section 4.2.2).

Overall, with implementation of mitigation during construction, the project will not result in a reduction in extent, diversity, condition, or connectivity of this habitat.

4.2.11 Scrub-Dense Continuous

Assessment of Effects

The areas of self-set scrub on the south side of the plateau access track will be cut back as part of temporary working area to install the below ground tank. Scrub vegetation is likely to naturally reestablish in this area over time once works are completed and over time new areas of scrub are likely to develop on the Habitat Mosaic on Coal Spoil (see 3.2.6). The project will

have no adverse effect on the diversity, condition or extent of scrub habitat in the project site, or it's connectivity to other habitats including to grassland as part of the OMHPDL, to the wet woodland and to the developing habitat mosaic on coal spoil.

Mitigation

No mitigation is required.

4.3 Species and Species Groups

4.3.1 Flora – Protected and Notable Plant Species

Assessment of Effects

The southern marsh-orchids recorded during 2024 surveys, and the seasonally inundated areas they were located, are not in the project site. The ivy leaved bellflower recorded is outside of the working area for coppicing along the watercourse through the wet woodland.

There will be effects on the recorded protected and notable plant species

Mitigation

No mitigation is required.

4.3.2 Badger

Assessment of Effects

No badger field signs were encountered during field surveys, however, there were parcels of woodland and scrub within the project site that may provide suitability for sett creation and foraging. Given the extent of suitable habitat, the opportunistic nature of this species, and prevalence of dense vegetation which may obscure evidence of badger activity, the presence of active setts within/adjacent to the project site and wider habitat of the project site remains a possibility. As well as direct impacts to setts, vegetation clearance and construction activities, including noise and light spill have the potential to disturb badger, should one be present at the time of the works.

There will be no loss of suitable foraging habitat or loss of connectivity between habitat which is suitable for badger.

Mitigation

As badger can move into an area and establish setts quickly a pre-construction survey will be undertaken up to 10 weeks prior to the commencement of enabling works to check for any evidence of badger use within the project site. If an active sett is identified, direct impacts to and disturbance of an active badger sett should be avoided through establishment of appropriate working buffers specific to relevant development activities. Typically, such buffers range between 10–30m from active entrances. Where this is not possible and development is likely to result in loss, damage and/or disturbance of an active sett, a development licence from Natural Resources Wales will be required to permit its closure.

to avoid entrapment or harm to badgers, excavations will be covered when works are not taking place, including overnight. Where deep excavations are made, a mammal ramp, or cut access, should be installed to allow badgers a means of escape from the trench. Any temporarily exposed open pipes >200mm diameter will be capped to ensure that badgers cannot enter them.

Overall, with implementation of mitigation during construction, the project will not pose a risk to the extent or condition (i.e. population numbers, range), of badger populations in the Rhonnda Fawr valley.

4.3.3 Bats

Assessment of Effects

Trees within the semi-natural broadleaved (wet) woodland may provide suitability for roosting bats and linear features along watercourse/ditches to the northwest and southwest of the broadleaved woodland within the project site may provide foraging opportunities for bats. A ground level tree assessment for roosting bats of trees within the project site was undertaken (Binnies UK Ltd, 2024b). Based on the findings of that survey a total of 3 trees with PRF-M suitability, 12 trees with PRF-I suitability and two structures with low suitability could be directly affected or indirectly disturbed by the works. Whilst it is not likely that all these are actually suitable for, or used by, roosting bats, it is likely the project will result in the loss of at least some suitable roosting features. Further surveys and pre-works inspections will be needed to manage this risk.

The loss of trees from the woodland will also result in a slight reduction in woodland and woodland edge foraging habitat. The locations of trees to be removed will not cause a loss of screening to the areas of recently felled woodland north of the wet woodland from light pollution from residential properties. The trees in the north western section of the woodland are already exposed to some light pollution from nearby residential streets.

Mitigation

All work to trees with PRF-I suitability will be carried out under supervision of a SQE and suitable method statement. This will include an inspection of PRF-I features by a SQE before works commence.

Additional surveys of the trees and structures with bat roost potential that could be directly affected or indirectly disturbed by the works are summarised in Table 4-1 below. Surveys for the three PRF-M trees and two low suitability structures are being carried out in 2025 to determine final mitigation measures.

Table 4-1 Table of recommended bat surveys for trees and structures affected by the proposed access clearance routes.

Tree tag	Approx. Grid reference	Species	PRF	Next step recommendations
3590	SS 94781 98107	Willow sp.	PRF-M	PRF-M features present, further surveys would be required to determine bat presence/absence. Night Visual Aids (NVA) surveys recommended due to height of feature.

Tree tag	Approx. Grid reference	Species	PRF	Next step recommendations
				It is reccomended that 3 separate dusk/emergence visits over 3 weeks due to the PRF-M suitability of the feature. Surveys should be undertaken between May – Sept inclusive).
3511	SS 94753 97971	Goat willow	PRF-M	PRF-M features present, further surveys would be required to determine bat presence/absence. Night Visual Aids (NVA) surveys recommended due to height of feature. It is reccomended that 3 separate dusk/emergence visits over 3 weeks due to the PRF-M suitability of the feature. Surveys should be undertaken between May – Sept inclusive).
3592	SS9478798107	Willow sp.	PRF M	PRF-M features present, further surveys would be required to determine bat presence/absence. A ground endoscope survey is recommended to assess the suitability of the feature (May - Sept inclusive). If the feature is downgraded to PRF-I, no further surveys will be required. If the feature is confirmed to have PRF-M suitability, two further ground endoscope surveys will be required over a period of two weeks.
3530	SS 94821 97960	Willow sp.	PRF-I	Due to PRF-I features, any work needed must be carried out under supervision of a SQE and suitable method statement. The suitable method statement must include an inspection / survey of PRF-I features by a SQE before works.
3516	SS 94771 97978	Willow sp.	PRF-I	Due to PRF-I features, any work needed must be carried out under supervision of a SQE and suitable method statement. The suitable method statement must include an inspection / survey of PRF-I features by a SQE before works.
3509	SS 94760 97977	Willow sp.	PRF-I	Due to PRF-I features, any work needed must be carried out under supervision of a SQE and suitable method statement. The suitable method statement must include an inspection / survey of PRF-I features by a SQE before works.

Tree tag	Approx. Grid reference	Species	PRF	Next step recommendations
3555	SS 94721 98047	Willow sp.	PRF-I	Due to PRF-I features, any work needed must be carried out under supervision of a SQE and suitable method statement. The suitable method statement must include an inspection / survey of PRF-I features by a SQE before works.
3586	SS 94790 98096	Willow sp.	PRF-I	Due to PRF-I features, any work needed must be carried out under supervision of a SQE and suitable method statement. The suitable method statement must include an inspection / survey of PRF-I features by a SQE before works.
3591	SS 94801 98107	Willow sp.	PRF-I	Due to PRF-I features, any work needed must be carried out under supervision of a SQE and suitable method statement. The suitable method statement must include an inspection / survey of PRF-I features by a SQE before works.
3595	SS9477898113	Scots pine	PRF I	Due to PRF-I features, any work needed must be carried out under supervision of a SQE and suitable method statement. The suitable method statement must include an inspection / survey of PRF-I features by a SQE before works.
3593	SS 94778 98114	Willow sp.	PRF-I	Due to PRF-I features, any work needed must be carried out under supervision of a SQE and suitable method statement. The suitable method statement must include an inspection / survey of PRF-I features by a SQE before works.
3574	SS 94770 98064	Willow sp.	PRF-I	Due to PRF-I features, any work needed must be carried out under supervision of a SQE and suitable method statement. The suitable method statement must include an inspection / survey of PRF-I features by a SQE before works.
3596	SS 94773 98112	Willow sp.	PRF-I	Due to PRF-I features, any work needed must be carried out under supervision of a SQE and suitable method statement. The suitable method statement must include an inspection / survey of PRF-I features by a SQE before works.
3600	SS 94795 98124	Willow sp.	PRF-I	Due to PRF-I features, any work needed must be carried out under supervision of a SQE and suitable method statement.

Tree tag	Approx. Grid reference	Species	PRF	Next step recommendations
				The suitable method statement must include an inspection / survey of PRF-I features by a SQE before works.
Untagged 2	SS 94725 98047	Willow sp.	PRF-I	Due to PRF-I features, any work needed must be carried out under supervision of a SQE and suitable method statement. The suitable method statement must include an inspection / survey of PRF-I features by a SQE before works.
Structure 1	SS 94778 98111	NA	Low suitability	Low suitability feature present, further surveys would be required to determine bat presence/absence. The feature should be inspected using an endoscope to assess the suitability of the internal cavities. Surveys should be undertaken between May – Sept inclusive). If the structure is downgraded to negligible suitability, no further surveys are required. For low suitability structures, one dusk emergence survey is required. If the suitability of the structure is upgraded to moderate suitability or higher, two or more dusk emergence visits would be required.
Structure 2	SS 94769 98100	NA	Low suitability	Low suitability feature present, further surveys would be required to determine bat presence/absence. The feature should be inspected using an endoscope to assess the suitability of the internal cavities. Surveys should be undertaken between May – Sept inclusive). If the structure is downgraded to negligible suitability, no further surveys are required. For low suitability structures, one dusk emergence survey is required. If the suitability of the structure is upgraded to moderate suitability or higher, two or more dusk emergence visits would be required.

If any bats are discovered during the further inspections, owing to the strict legal protection afforded to bats and their roosts, works are likely to require a Development Licence from Natural Resources Wales before works can continue.

The provision of additional lighting will be avoided during works. Working during dark hours will be avoided where possible, and if it is essential, lighting will be kept to the minimum level required for safe operations. The lighting scheme must be designed to minimise spread onto tree lines, woodland edge, and the watercourse at the southeast aspect of the project site. To facilitate this, a suitably qualified ecologist must be appointed to advise on the lighting design as soon as a need for work lighting is identified.

Lighting for security reasons, at the temporary compounds within the project site for example, will be minimised and alternative solutions such as night vision camera systems utilised instead. If the need for security lighting cannot be avoided, lighting will be motion activated and designed to minimise light spill onto the surrounding habitats

Details of a sensitive lighting plan will need to be included within the EAP for any nighttime/dusk working. The lighting design will need to follow best practice guidance by the Bat Conservation Trust and the Institution of Lighting Professionals, (ILP, 2023)

The proposed works may lead to a loss in local tree roosting provision. As per wet woodland, trees removed will be replaced in an area immediately east of the existing woodland. However, these will take time to mature and to be able to provide roosting habitat.

Overall, with implementation of mitigation, the project will not have an adverse effect on the extent, condition or diversity (i.e. population numbers, range, species) of bat populations in the Rhonnda Fawr valley.

4.3.4 Birds

Assessment of Effects

A number of birds were recorded during the field surveys including nightjar. The habitats such as woodland, scrub, grasslands and bare ground within the project site and the wider habitat have the potential to support a range of foraging, breeding and over wintering bird species.

The permanent works will not affect the availability of nesting, foraging or overwintering habitats. However, carrying out vegetation clearance and construction activities has potential to directly harm nests and disturb nesting birds. Nightjar in particular are a ground nesting species that use clear-fell, coppiced and young forestry plantations. Disturbance within 200m of a nightjar nest may not flush birds from the nest but could affect foraging activity and therefore breeding success.

Mitigation

The aim is to carry out all vegetation clearance in advance of the main works, outside of the main bird breeding season (March to August inclusive).

As part of brash and vegetation clearance, where possible within the safety limitations of the site, all clear-felled woodland habitat and brash will be removed from working areas to establish unfavourable nesting habitat (bare ground). The removal of clear-felled habitat over winter will be the most effective method to deter nightjar from nesting in working areas. Starting the main construction works in April will mean that construction activity is likely to act as a deterrent to nightjar establishing nests within 200m of the working areas: the nightjar nesting season is May to August.

If carrying out all clearance over winter and starting works in April is not feasible, and vegetation clearance is needed during the main bird breeding season, then nesting bird checks will be carried out before vegetation is cleared. If active nests are found, then suitable exclusion zones will be established as advised by a SQE, and the detailed works programme adjusted if needed, until young have fledged. The extent of exclusion zones and amendments to working practices will depend on the species, nest location, the type of works being carried and levels of disturbance impact. If deemed necessary by the SQE, then some works may need to carried out under an ecological watching brief, where work could be stopped if nesting bird behaviour alters suggesting the nest is at risk of abandonment. This approach is likely to be needed for any nightjar that establish nests within 200m of working areas.

Overall, with implementation of mitigation during construction, the project will not have an adverse effect on the extent, condition or diversity (i.e. population numbers, range, species) of bird populations in the Rhonnda Fawr valley.

4.3.5 Fish

Assessment of Effects

The running water within the site boundary is considered highly unlikely to support freshwater ecology associated with the wider river Rhondda catchment and is considered inaccessible for fish due to the presence of extensive culverts which present an impassable barrier.

There are no potential direct impacts to fish from the proposed works, but silt generated by construction works could enter downstream waterbodies and affect habitat quality and fish health.

Mitigation

A water quality and silt control plan will be developed, approved by NRW and implemented during construction, as per running water (section 4.2.10). Overall, with implementation of mitigation during construction, the project will not pose a risk to the extent, condition or diversity (i.e. population numbers, range, species), of fish populations in the Rhonnda Fawr valley.

4.3.6 Fungi

Assessment of Effects

The recorded waxcap fungi are located within the acid grassland on the southern plateau slopes which will not be affected by the proposed works.

Mitigation

There is no mitigation required for fungi.

4.3.7 Hazel Dormouse

Assessment of Effects

The woodland habitats within the project site are of negligible suitability for dormouse (see section 3.3.7), but their presence cannot be ruled out. The wet woodland is not suitable as a

hibernation habitat, therefore carrying out vegetation clearance over winter does not pose a risk. However, if areas within the woodland where there is bramble understory and dense scrub need to be cleared over the summer, there is potential, albeit low, to cause loss of nests and harm to individuals.

The required clearance works will not affect the availability of potentially suitable habitat. Trees and areas of woodland lost to the footprint of new drainage assets will be replaced with new planting extending east of the existing woodland (see section 4.2.3). As that new planting and its understorey matures it could provide suitable habitat. New growth from trees that are coppiced as part of the works could also provide suitable foraging habitat.

Mitigation

If vegetation clearance from within the woodland where there is bramble understory and dense scrub is required over the summer, then vegetation needing to be removed will be checked by a SQE.

Overall, with implementation of mitigation during construction, the project will not pose a risk to the extent or condition (i.e. population numbers, range), of dormouse populations in the Rhonnda Fawr valley.

4.3.8 Invasive Non-Native Species

Assessment of Effects

INNS are included within the Wildlife and Countryside Act 1981 (as amended) and the Invasive Alien Species (Enforcement and Permitting) Order 2019. It is a landowner's responsibility not to cause INNS to spread in the wild, or onto neighbouring land.

Two stands of Japanese knotweed are present within the wet woodland (See Appendix B Target Notes - TNs 13 & 14). One stand (TN14) is located in an area where there is an access track planned, adjacent to a ditch. This stand is at risk of being spread due to construction activities.

The second stand (TN13) is within the broadleaved woodland adjacent to the felled coniferous woodland and is not at risk of being spread due to construction activities.

Mitigation

An invasive species management plan will be developed by the contractor prior to commencement of works and approved by NRW. This will set out treatment to remove the existing stands where needed, or to prevent their spread, and provide a Biosecurity Risk Assessment to follow which will include methods to prevent the spread of invasive species within and outside the project site.

Japanese knotweed stand at TN13 is adjacent the route of the new stoned access track and will be removed as part of enabling works (vegetation clearance) to install the track.

The stand of montbretia in the broadleaved woodland is adjacent the route of the forestry track that will be upgraded and have a filter drain installed. This stand will be removed as part of the enabling works (vegetation clearance) to upgrade the track.

The second stand of Japanese knotweed (TN14) is not within or immediately adjacent construction working areas to install drainage assets but will be removed by the project to provide a net benefit. If this stand is not fully removed as part of enabling works (e.g. if several years of treatment are needed), then during construction a 7m buffer zone will be created by exclusion fencing, and notices and toolbox talks provided, to ensure personnel do not inadvertently cause any spread.

Overall, the mitigation will prevent the spread of INNS during construction and thus avoid potential effects to the condition of other habitats and species.

4.3.9 Invertebrates

Assessment of Effects

As described for the Open Mosaic Habitat on Previously Developed Land (OMHPDL) HPI, works to install the below ground water tank will cause disturbance to and a temporary loss of up to 3,750m^2 of habitat, mainly comprising semi-improved grassland with areas of bare ground and scrub. The area affected is within the 'open habitat' biotype for invertebrates. Temporary loss of habitat could affect invertebrate populations in the short term, but the temporary nature and localised scale of the losses will not affect invertebrate populations in the medium and long term.

As described for the Mynydd Ystradffernol SINC, the ecotone on coal spoil material that is transitioning into tall ruderal with patches of self-seeded broadleaved trees habitats will be subject to disturbance in temporary working areas and some changes in habitats from the permanent drainage structures. In context of a habitat mosaic this will be neutral change to the extent, diversity and condition of the habitat and will not affect availability and quality of invertebrate habitat.

The loss of some areas of woodland to the footprint of new drainage assets could have localised impacts on woodland invertebrate communities, although the resultant more open areas with exposed ground may benefit some species groups. Works to open up the watercourse through the wet woodland and provide nature-based solutions in it as part of the drainage strategy may improve habitats for some invertebrate species.

Mitigation

The mitigation to facilitate natural regeneration of the neutral semi-improved grassland the provides invertebrate habitat is as described for Open Mosaic Habitat on Previously Developed Land (OMHPDL) HPI, section 4.2.2.

As per wet woodland, an area of replanted trees will provide habit for woodland invertebrates as the planting area matures.

Overall, with mitigation and habitat reestablishment following construction, the project will not have an adverse effect on the extent, condition or diversity (i.e. population numbers, range, species) of invertebrate populations.

4.3.10 Riparian Mammals

Assessment of Effects

There were no observations of riparian mammals during the field surveys and the habitats within the project site lack features to support otter, though could be suitable for water vole. However, both of these species are highly mobile and will readily expand their territories in response to ecological or human factors.

Therefore, there is the potential for riparian mammals to be present in the project site during works and to be harmed disturbed.

Mitigation

Prior to the commencement of vegetation clearance and excavation works, a suitably qualified ecologist will conduct an inspection for otter resting areas, water vole burrows and field signs for both species. If signs of activity are found the ecologist will provide suitable instruction on a safe working methodology, this may include the need to suspend works until a disturbance licence can be obtained.

All contractors will be made aware that otters and water voles may be active in the area and should an otter or a resting area or water vole burrows be discovered during the works, all works must stop and advice sought from a suitably qualified ecologist.

Overall, with construction mitigation, the project will not pose a risk to the extent or condition (i.e. population numbers, range), of riparian mammals in the Rhonnda Fawr valley.

4.3.11 Reptiles and Amphibians

Assessment of Effects

The project site includes habitats suitable for reptiles and amphibians and it is likely that they are present in the project site. The proposed works will not result in permanent changes to habitat extent, suitability or connectivity, but individuals could be harmed during construction works.

Mitigation

Due to the limited scale of the temporary works in the grasslands, woodlands and OMHPDL locations where reptiles may be present, it is recommended that any works would be completed under a Precautionary Method of Working Statement and under ecological supervision.

Carrying out vegetation clearance over winter in advance of the main works, outside of the main bird breeding season (March to August inclusive), means that there is an increased risk to reptiles and amphibians as if encountered in winter they are likely to be torpid or in hibernation. Where loss of reptile habitats is unavoidable all vegetation clearance works will be carried out under the supervision of a suitably experienced ecologist. Habitat removal should be undertaken sensitively, and where safe to do so a two-phase cut will be used. Vegetation must be strimmed down in stages, first to 150mm, then to the ground with hand inspections for reptiles and amphibians undertaken after each cut. Suitable hibernation features (e.g. log piles and brash) will be removed by hand or by hand tools.

A toolbox talk will be provided to all those working on the project, and if there is evidence of reptiles or amphibians that had not previously been accounted for, work should cease until advice has been obtained from the site ecologist.

Overall, with mitigation, the project will not have an adverse effect on the extent, condition or diversity (i.e. population numbers, range, species) of reptile and amphibian populations.

4.3.12 West European Hedgehog and Other Mammals

Assessment of Effects

There were no observations of mammals during the field surveys although there are suitable habitats within the project site for hedgehog and other mammals such as polecat. These include woodland parcels and grassland, with connecting habitats including scrub, bracken and ruderal habitats providing further suitability. The proposed works will not result in permanent changes to habitat extent, suitability or connectivity, but there is the potential for terrestrial mammals to be harmed and disturbed during construction works.

Mitigation

Prior to the commencement of vegetation clearance and excavation works, a SQE will conduct an inspection for terrestrial mammals.

Overall, with construction mitigation, the project will not pose a risk to the extent or condition (i.e. population numbers, range), of west European hedgehog or other mammals in the Rhonnda Fawr valley.

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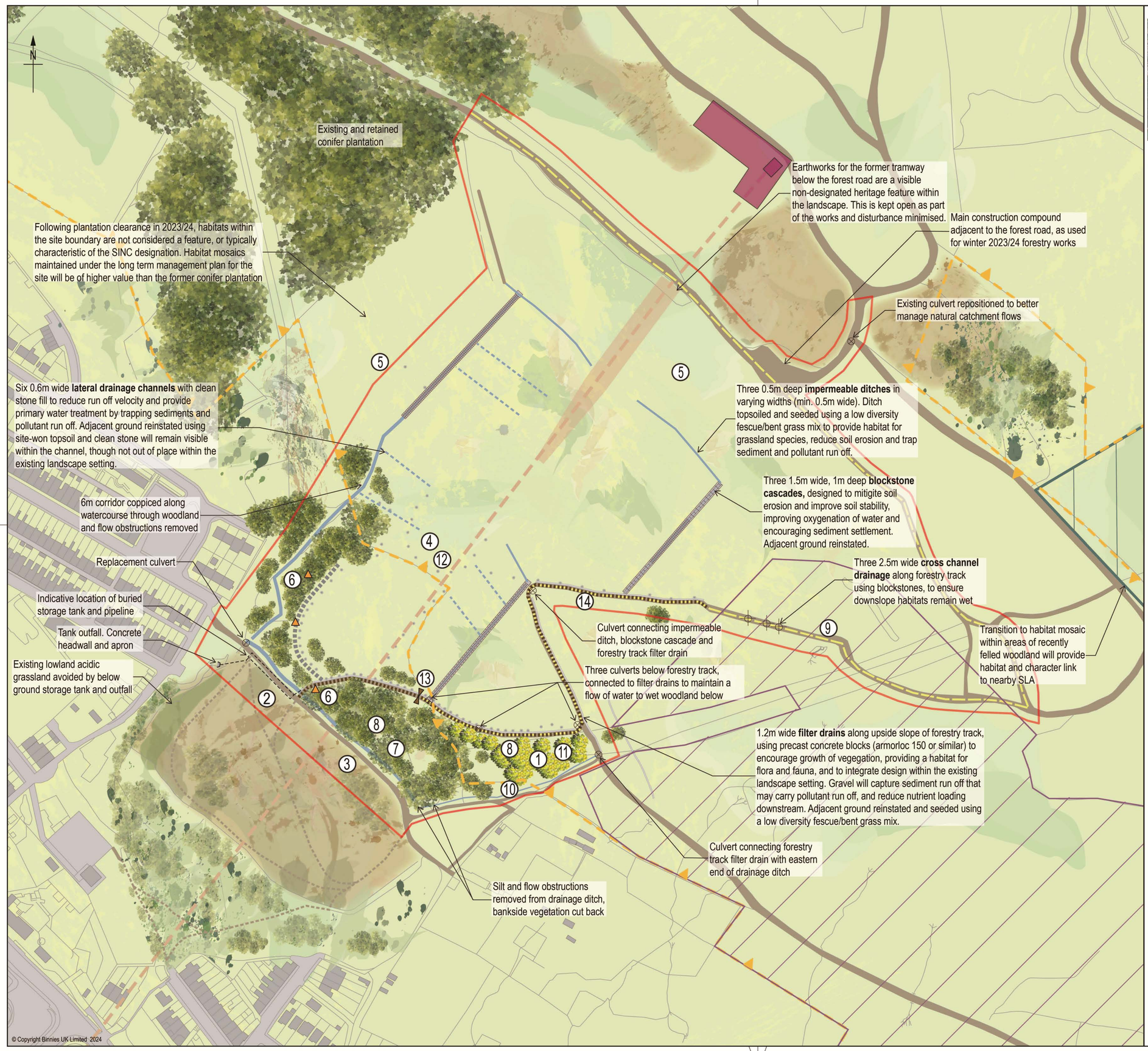
APPENDICES

Appendix A Drawings

Drawing Title	Drawing Number
Environmental Masterplan	4021526-BUK-ZZ-00-DR-EN-00015
Phase 1 Habitat Survey Plan (2024)	4021526-BUK-ZZ-00-DR-EN-00008
Bat Ground Level Tree Assessment	4021526-BUK-ZZ-00-DR-EN-00009
Statutory Designated Sites within 10km	4021526-BUK-ZZ-00-DR-EN-00013
Non-statutory Designated Sites within 2km	4021526-BUK-ZZ-00-DR-EN-00014



Location Plan

Proposed Mitigation and Enhancement Description

Embedded Mitigation

1. Wet woodland planting using species native to Rhondda Cynon Taf, to achieve compensation planting at a scale, design and species mix reflective of the area lost from the wet woodland
2. Crane and excavation area for installing below ground storage tank reinstated to neutral semi-improved grassland
3. Temporary working area including welfare unit and material storage reinstated to neutral semi-improved grassland following the works.
4. Natural stone headwalls used for drains which minimise visual intrusion and are sympathetic to the landscape setting

Enhancements in Green Infrastructure Statement

5. On-going monitoring and management of established and transitioning vegetation communities on coal spoil to maintain a habitat mosaic. Conifer regrowth removed. As part of drainage asset maintenance to prevent vegetation encroaching into the assets, vegetation will be cut back along and around the assets when needed, resetting these areas back to a more open habitat structure as part of the mosaic
6. Remove existing Invasive Non-Native Species (stands of Japanese knotweed and Montbretia). Monitor and control any regrowth
7. Coppice one third of willow trees within existing wet woodland south of forestry track during construction to create structural and age diversity
8. Create deadwood habitat features in retained and new woodland using branches and trunks of coppiced and felled trees
9. Remove brash from an approximately 2.4m wide strip either side of the forest track during construction. Cut back vegetation within this zone on one side of the track each year (each side cut back every two years) to maintain fire break and vegetative diversity
10. Prune overhanging canopy during construction to encourage regeneration of vegetation within the dry ditch, and clearing of rubble
11. Replacement wet woodland planting will be of higher species diversity than the woodland removed, and provide improved habitat for faunal species such as foraging birds, mammals, invertebrates and bats
12. Natural stone headwalls will provide microhabitats: their open aspect will be maintained as part of asset inspection and maintenance
13. Gate installed on forestry track to prevent unwanted vehicle access and associated antisocial behaviour; pedestrian access maintained
14. Levelling and surfacing of tracks will improve access for recreational users following the works

Additional Resources

- Ecology Report: 4021526-BUK-ZZ-00-RP-EN-00013
- Green Infrastructure Statement: 4021526-BUK-ZZ-00-RP-EN-00009
- General Arrangement: 4021526-BUK-ZZ-00-DR-C-00010
- Drainage Features, Track and Road Details: 4021526-BUK-ZZ-00-DR-C-00011
- Arboricultural Impact Assessment (ADAS, 2025) for works to trees

Note: The limits, including the height and depths of the Works, shown in this drawing are not to be taken as limiting the obligations of the contractor under Contract.

Legend

- Application boundary
- Mitigation and Enhancement ID

Proposed Drainage Works

- Headwall for horizontal sub-surface drain
- Impermeable ditch
- Gravel (lateral) drainage
- Blockstone cascade
- Cross channel drainage location
- Filter drain
- Culvert location
- Resurfaced forestry track
- Stone surface track to access subsurface drain outfalls
- Below ground tank and pipeline

Landscape

- Retained wet woodland
- Proposed wet woodland planting
- Existing forestry road/track
- Existing informal paths
- Brash removed and vegetation managed approximately 2.4m either side of access track
- Vehicle gate
- Invasive Non-Native Species (INNS) Management

Statutory and Non-statutory Designations

- Incline Haulage Systems Scheduled Monument
- Indicative route of former tramway
- Mynydd Ystradffernol Site of Importance for Nature Conservation (SINC)
- Cwm Orci Special Landscape Area (SLA)
- Plantation on Ancient Woodland Site (PAWS)

10m 0m 10m 30m 50m 70m 90m 100m
Scale 1:1250

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDS OR RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, THE FOLLOWING SIGNIFICANT RESIDUAL RISKS SHOULD BE NOTED. FURTHER DETAILS ARE INCLUDED IN THE CDM DESIGN RISK MANAGEMENT REGISTER

CONSTRUCTION :

Not applicable

MAINTENANCE, CLEANING AND OPERATION :

Not applicable

DECOMMISSIONING OR DEMOLITION :

Not applicable

Rev	Drawn	Chkd	Rvwd	Apprvd	Date	Description
P01	HJR	HAR	AB	AH	06/12/2024	For client review, comment, and/or acceptance
P02	HJR	HAR	AB	AH	30/06/2025	For client review and acceptance
P03	HJR	HAR	AB	AH	22/08/2025	For client review and acceptance

Designed by: Date:

Status S5 Suitable for Review and Acceptance

Client: Cyfoeth Naturiol Cymru Natural Resources Wales

Client Drawing No. | Revision

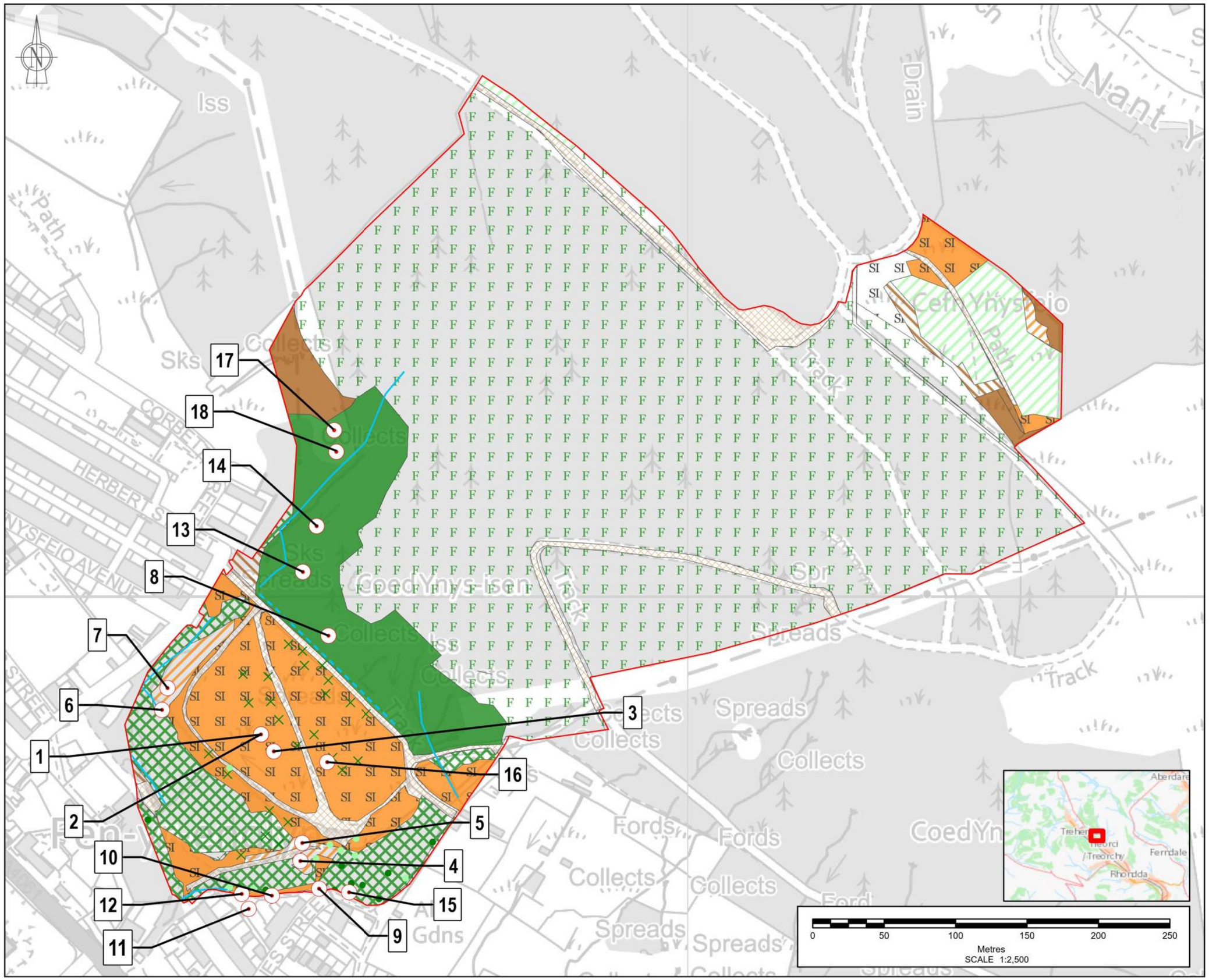
Binnies UK Limited
Spring Lodge, 172 Chester Road, Helsby, Cheshire, WA6 0AR, UK.
Tel: +44(0)1737 774155

Project: PENYRENGLYN LANDSLIDE RISK MANAGEMENT

Drawing title: ENVIRONMENTAL MASTERPLAN SHEET 1 OF 1

Drawing scale: 1:1250 Sheet size: A1

Drawing no. 4021526-BUK-ZZ-00-DR-EN-00015 | Revision P03



Note: The limits, including the height and depths of the Works, shown in this drawing are not to be taken as limiting the obligations of the contractor under Contract.

LEGEND

- A1.1.1 - BROADLEAVED WOODLAND - SEMI-NATURAL
- A1.2.2 - CONIFEROUS WOODLAND - PLANTATION
- A2.1 - SCRUB - DENSE/CONTINUOUS
- A2.2 - SCRUB - SCATTERED
- A4.2 - CONIFEROUS WOODLAND - RECENTLY FELLED
- B1.1 - ACID GRASSLAND - UNIMPROVED
- B2.2 - NEUTRAL GRASSLAND - SEMI-IMPROVED
- B6 - POOR SEMI-IMPROVED GRASSLAND
- C1.1 - BRACKEN - CONTINUOUS
- C3.1 - OTHER TALL HERB AND FERN - RUDERAL
- J4 - BARE GROUND
- PHASE ONE HABITAT SURVEY AREA
- TARGET NOTE
- G2 - RUNNING WATER
- J2.6 - DRY DITCH
- A2.2 - SCRUB - SCATTERED
- A3.1 - BROADLEAVED PARKLAND/SCATTERED TREES
- A3.2 - CONIFEROUS PARKLAND/SCATTERED TREES

SAFETY HEALTH AND ENVIRONMENT INFORMATION
IN ADDITION TO THE HAZARDS OR RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, THE FOLLOWING SIGNIFICANT RESIDUAL RISKS SHOULD BE NOTED. FURTHER DETAILS ARE INCLUDED IN THE CDM DESIGN RISK MANAGEMENT REGISTER
CONSTRUCTION
N/A
MAINTENANCE / CLEARING / OPERATION
N/A
DECOMMISSIONING / DEMOLITION
N/A

Rev	Drawn	Chkd	Rvwd	Apprvd	Date	Description
P02	AP	AB	ES	AH	05/11/2024	FOR INFORMATION
P01	TW	KN	ES	AH	22/08/2024	FOR INFORMATION

Designed by: TW Date: NOVEMBER 2024

Client:

Cyfoeth Naturiol Cymru Natural Resources Wales

Client Drawing No. | Revision

Binnies UK Limited
Registered Office
Spring Lodge, 172 Chester Road, Helsby, Cheshire, WA6 0AR UK
Tel: +44(0)1737 774155

Project:

PEN YR ENGLYN

Drawing title:

PHASE 1 HABITAT SURVEY

Drawing scale: 1:2,500 Sheet size: A3

Drawing no. 4021526-BUK-ZZ-00-DR-EN-00008 | Revision P02

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Print Version: Print Quality (300dpi @ A3)

Note: The limits, including the height and depths of the Works, shown in this drawing are not to be taken as limiting the obligations of the contractor under Contract.

LEGEND

APPROXIMATE GLTA SURVEY AREA

GLTA RESULTS

TREE SUITABILITY

- NONE
- PRF-I
- PRF-M

INCIDENTAL FINDS

- LOW

SAFETY HEALTH AND ENVIRONMENT INFORMATION
IN ADDITION TO THE HAZARDS OR RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, THE FOLLOWING SIGNIFICANT RESIDUAL RISKS SHOULD BE NOTED. FURTHER DETAILS ARE INCLUDED IN THE CDM DESIGN RISK MANAGEMENT REGISTER
CONSTRUCTION
N/A
MAINTENANCE / CLEARING / OPERATION
N/A
DECOMMISSIONING / DEMOLITION
N/A

Rev	Drawn	Chkd	Rvwd	Apprvd	Date	Description
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P01	AP	JG	JW	AH	12/09/2024	FOR INFORMATION

Designed by: AP Date: NOVEMBER 2024

Client:

Cyfoeth Naturiol Cymru Natural Resources Wales

Client Drawing No. | Revision

Binnies UK Limited
Registered Office
Spring Lodge, 172 Chester Road, Helsby, Cheshire, WA6 0AR UK
Tel: +44(0)1787 774155

Project:

PEN YR ENGLYN

Drawing title:

GROUND LEVEL TREE ASSESSMENT RESULTS

Drawing scale: 1:1,500 Sheet size: A3

Drawing no. 4021526-BUK-ZZ-00-DR-EN-00009 | Revision P02

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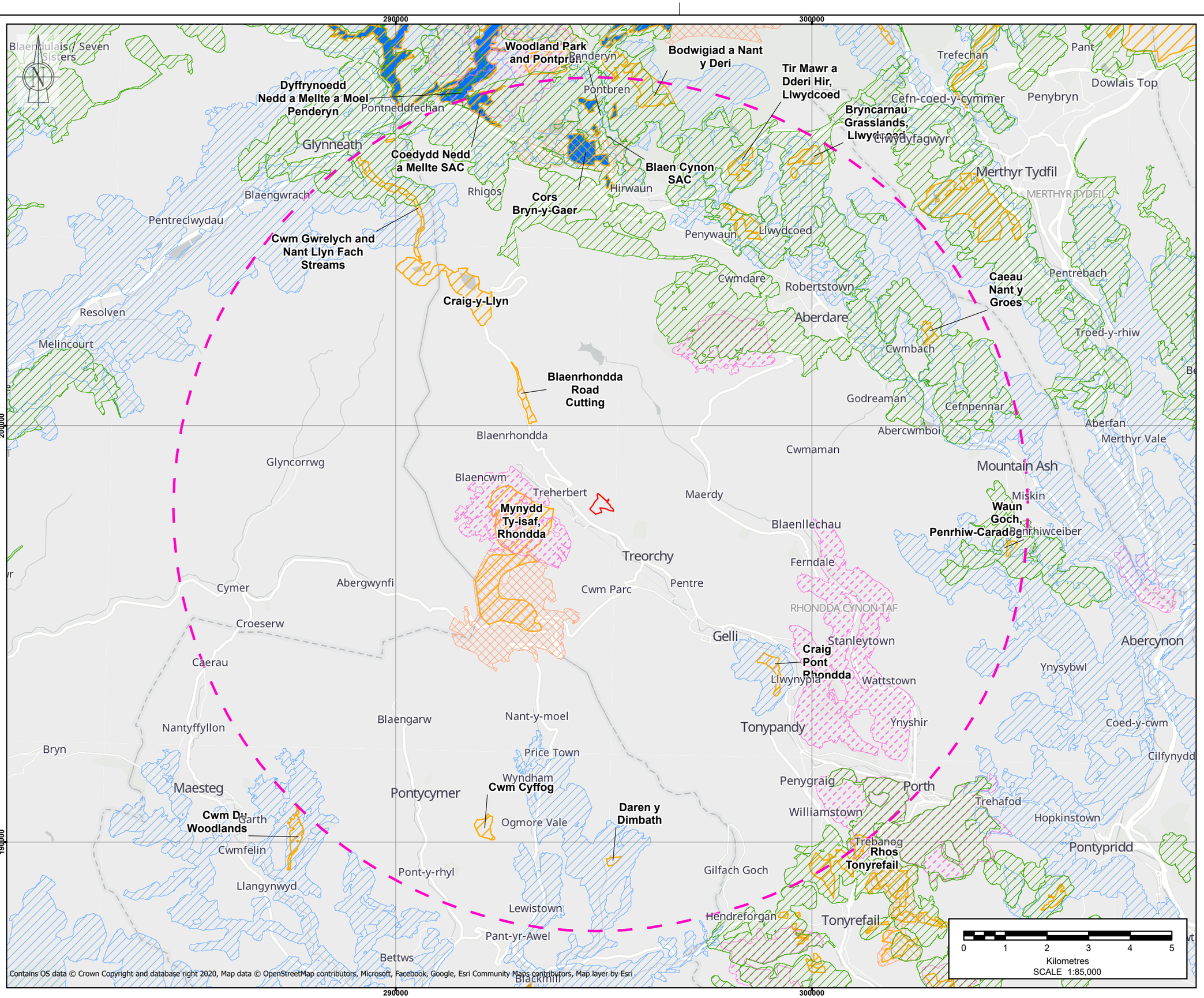

Note: The limits, including the height and depths of the Works, shown in this drawing are not to be taken as limiting the obligations of the contractor under Contract.

LEGEND

- PROJECT SITE
- SITE BOUNDARY 10KM BUFFER
- SITES OF SPECIAL SCIENTIFIC INTEREST (SSSI)
- SPECIAL AREAS OF CONSERVATION (SAC)

PRIORITY ECOLOGICAL NETWORKS

- FEN
- HEATHLAND
- BOG
- NATIVE WOODLAND
- SEMI-NATURAL GRASSLAND

GRID REF. AT CENTRE SS 94874 98109

SAFETY HEALTH AND ENVIRONMENT INFORMATION
IN ADDITION TO THE HAZARDS OR RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, THE FOLLOWING SIGNIFICANT RESIDUAL RISKS SHOULD BE NOTED. FURTHER DETAILS ARE INCLUDED IN THE CDM DESIGN RISK MANAGEMENT REGISTER
CONSTRUCTION
N/A
MAINTENANCE / CLEARING / OPERATION
N/A
DECOMMISSIONING / DEMOLITION
N/A

Rev	Drawn	Chkd	Rvwd	Apprvd	Date	Description
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P02	MU	JG	AB	AH	11/07/2025	FOR INFORMATION
P01	MA	MH	AB	AH	29/11/2024	FOR INFORMATION

Designed by: MA Date: NOVEMBER 2024

Client: Cyfoeth Naturiol Cymru Natural Resources Wales

Client Drawing No. | Revision

Binnies UK Limited
Registered Office
Spring Lodge, 172 Chester Road, Helsby, Cheshire, WA6 0AR UK
Tel: +44(0)1737 774155

Project:

PENYRENGLYN LANDSLIDE RISK MANAGEMENT

Drawing title:

STATUTORY DESIGNATED SITES WITHIN 10KM

Drawing scale: 1:85,000 Sheet size: A3

Drawing no. 4021526-BUK-ZZ-00-DR-EN-00013 | Revision P03

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Print Version: Print Quality (300dpi @ A3)

Note: The limits, including the height and depths of the Works, shown in this drawing are not to be taken as limiting the obligations of the contractor under Contract.

LEGEND

- PROJECT SITE
- SITE BOUNDARY 2KM BUFFER
- SITES OF IMPORTANCE FOR NATURE CONSERVATION (SINC)

ANCIENT WOODLAND INVENTORY 2021

- PLANTATION ON ANCIENT WOODLAND SITE
- ANCIENT SEMI NATURAL WOODLAND
- ANCIENT WOODLAND SITE OF UNKNOWN CATEGORY

GRID REF. AT CENTRE SS 94874 98109

SAFETY HEALTH AND ENVIRONMENT INFORMATION
IN ADDITION TO THE HAZARDS OR RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, THE FOLLOWING SIGNIFICANT RESIDUAL RISKS SHOULD BE NOTED. FURTHER DETAILS ARE INCLUDED IN THE CDM DESIGN RISK MANAGEMENT REGISTER
CONSTRUCTION
N/A
MAINTENANCE / CLEARING / OPERATION
N/A
DECOMMISSIONING / DEMOLITION
N/A

Rev	Drawn	Chkd	Rvwd	Apprvd	Date	Description
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P02	MU	JG	AB	AH	11/07/2025	FOR INFORMATION
P01	MA	MH	AB	AH	29/11/2024	FOR INFORMATION

Designed by: MA Date: NOVEMBER 2024

Client

Cyfoeth Naturiol Cymru Natural Resources Wales

Client Drawing No. | Revision

Binnies UK Limited
Registered Office
Spring Lodge, 172 Chester Road, Helsby, Cheshire, WA6 0AR UK
Tel: +44(0)1737 774155

Project:

PENYRENGLYN LANDSLIDE RISK MANAGEMENT

Drawing title:

NON-STATUTORY DESIGNATED SITES WITHIN 2KM

Drawing scale: 1:20,000 Sheet size: A3

Drawing no: 4021526-BUK-ZZ-00-DR-EN-00014 | Revision: P03

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Metres
SCALE 1:20,000

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Print Version: Print Quality (300dpi @ A3)

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Appendix B Phase 1 Habitat Survey Target Notes

Ref	NGR	Description	Photo
1 & 2	SS946989 7904	Southern marsh orchid locations, close enough to fall under same NGR.	

3	SS947079 7892	Marsh speedwell in wet depression.	

4	SS947259 7815	Wall spray cotoneaster.	

5	SS947279 7828	Waxcaps present in acidic grassland.	

6	SS946299 7921	Mix of cotoneaster species on slope over 3x5m area.	

7	SS946329 7937	Acid grassland with heather present, becoming overgrown with scrub.	
8	SS947459 7973	Montbretia present in broadleaved woodland.	

9	SS947389 7796	Wall spray cotoneaster.	

10	SS947069 7792	Area of rhododendron behind the back of residential gardens.	

11	SS946899 7782	Area of Montbretia 5x3m stand on mound behind residential properties.	
12	SS946849 7792	Scattered patches of Montbretia alongside track edges behind residential properties.	

13	SS947379 8001	Large stand of the Japanese knotweed in area of cleared coniferous woodland bordering the broadleaved woodland and trackway.	Missing photo
14	SS947439 8045	Stand of Japanese knotweed under broadleaved woodland canopy, 5x5m in size.	

15	SS947599 7794	Montbretia along edge of path near houses.	
16	SS947449 7885	5 southern marsh orchids.	

17	SS947509 8117	Ivy leaved bell flower growing on edge of water run off channel from hillside.	

18	SS947519 8102	Pool on edge of woodland with *Sphagnum cuspidatum* growing throughout.	

Appendix C Legislation

Note that the details provided in this appendix are for general guidance only and should not be relied upon as a definitive statement of the law. Only legislation applicable to this scheme is provided here.

Legislation Afforded to Protected Sites and Habitats

Statutory Designations: International

Special Protection Areas (SPAs) were originally classified under the EC Birds Directive. SPAs are designated for their important habitat for rare (listed on Annex I of the Directive) and migratory birds within the United Kingdom.

Special Areas of Conservation (SACs) were originally classified under the EC Habitats Directive. SACs are designated for best representing the range and variety of habitats and (non-bird) species listed on Annexes I and II to the Directive within the United Kingdom.

Since the United Kingdom left the European Union, SPAs and SACs remain protected under The Conservation of Habitats and Species Regulations 2017 (as amended by the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019). These are commonly referred to as the Habitats Regulations.

SPAs and SACs together form a national network of **European Sites** in the United Kingdom.

Ramsar sites are designated under the Convention on Wetlands of International Importance 1971. Ramsar sites protect and recognise wetlands as ecosystems that are globally important for biodiversity conservation. Ramsar sites are also underpinned through prior notification as Sites of Special Scientific Interest (SSSIs) and as such, receive statutory protection under the Wildlife and Countryside Act 1981 (as amended). It is Government Policy to treat Ramsar sites as if they were European Sites.

Statutory Designations: National

Countryside agencies (e.g. Natural Resources Wales) can designate **Sites of Special Scientific Interest (SSSIs)** under the National Sites and Access to the Countryside Act 1949 and the Wildlife and Countryside Act 1981 (as amended). SSSIs are designated for their flora, fauna or geological or physiographical features. As well as underpinning other national designations (such as **National Nature Reserves (NNRs)**, which are declared by the countryside agencies under the same legislation), the system also provides statutory protection for terrestrial and coastal sites which are important within a European context (European sites) and globally (such as Wetlands of International Importance).

Statutory Designations: Local

Local authorities in consultation with the relevant nature conservation agency can declare **Local Nature Reserves (LNRs)** under the National Sites and Access to the Countryside Act 1949. LNRs are designated for flora, fauna or geological interest and are managed locally to retain these features and provide research, education and recreational opportunities.

Non-Statutory Designations

Non-statutory designated sites can be designated by the local authority for supporting local conservation interest. The titles of these sites are not standardised across the UK and can vary from county to county. A selection of titles used to denote non-statutory sites includes **Local Wildlife Sites (LWS), County Wildlife Sites (CWS), Sites of Interest for Nature Conservation (SINC) or Sites of Nature Conservation Interest (SNCI)**, to name a few.

Combined with statutory designation, these sites are considered within Local Development Frameworks under the Town and Country Planning system and are a material consideration during the determination of planning applications. The protection afforded to these sites varies depending on the local authority involved.

Habitats of Principal Importance (HPI)

Habitats of Principal Importance (HPIs) are those considered to be of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales. A national list of HPIs has been prepared under Section 7 of the Environment (Wales) Act 2016. Section 7 habitats do not receive statutory protection (unless protected under other legislation) but Welsh Ministers must a take all reasonable steps to maintain and enhance the types of habitat included in the published list and encourage others to take such steps. Section 6 of the Environment (Wales) Act 2016 requires public authorities to seek to maintain and enhance biodiversity in the exercise of their functions in relation to Wales, and in so doing promote the resilience of ecosystems. Assessment of effects on HPIs are therefore likely to be a key factor when preparing consent applications.

Ancient woodland and individual ancient, veteran and heritage trees

These are classed under Wales' Natural Resources Policy and by Planning Policy Wales (Ed. 11, 2021) as natural irreplaceable resources that provide a wide range of ecosystem services. Planning Policy Wales states that such trees and woodlands should be afforded protection from development which would result in their loss or deterioration unless there are significant and clearly defined public benefits. In the case of a site recorded on the Ancient Woodland Inventory, Planning Policy Wales states authorities should consider the advice of Natural Resources Wales and that planning authorities should also have regard to the Ancient Tree Inventory.

Legislation Afforded to Species

Legislation Overview

The EC Habitats Directive requires Member States to take measures to maintain or restore wild species listed on the Annexes to the Directive at a favourable conservation status, introducing robust protection for those species of European importance. The Directive was transposed into English and Welsh law (up to the seaward limits of territorial seas) by The Conservation of Habitats and Species Regulations 2017 (Habitats Regulations).

When the United Kingdom left the European Union, the Habitats Regulations were amended by the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019. These amendment regulations transferred functions from the European Commission to English and Welsh government, but retained the levels of protection to the identified species of European importance.

The following notes are relevant for all species protected under the Habitats Regulations 2017 (as amended):

- The term 'deliberate' is interpreted as being somewhat wider than 'intentional' and may be thought of as including an element of recklessness. The Habitats Regulations do not define the act of 'migration' and, therefore, as a precaution, it is recommended that short distance movement of animals for e.g. foraging, breeding or dispersal purposes are also considered.
- In order to obtain a European Protected Species Mitigation licence, the application must demonstrate that it meets all of the following three 'tests':
    - the action(s) are necessary for the purpose of preserving public health or safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequence of primary importance for the environment;
    - there is no satisfactory alternative; and
    - the action authorised will not be detrimental to the maintenance of the species concerned at a favourable conservation status in their natural range.

The Wildlife and Countryside Act 1981 (as amended) is the principal mechanism for the legislative protection of wildlife in Great Britain. It does not extend to Northern Ireland, the Channel Islands or the Isle of Man. This legislation is the means by which the Convention on the Conservation of European Wildlife and Natural Habitats (the 'Bern Convention') is enacted in Great Britain, and was also how the provisions of the European Union Directive on the Conservation of Wild Birds (79/409/EEC) were originally enacted in Great Britain.

The Wildlife and Countryside Act 1981 (as amended) has been subject to a number of amendments, the most important of which are through the Natural Environment & Rural Communities (NERC) Act 2006 and the Countryside and Rights of Way (CRoW) Act (2000).

Other legislative Acts affording protection to wildlife and their habitats include:

- The Environment (Wales) Act 2016
- Wild Mammals (Protection) Act 1996;
- Protection of Badgers Act 1992; and
- Deer Act 1991.

Bats

All species are fully protected under the Habitats Regulations 2017 (as amended) as they are listed on Schedule 2 which prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species (e.g. all bats);
- Deliberate disturbance of bat species as:
    - to impair their ability:
        - to survive, breed, or reproduce, or to rear or nurture young; or
        - to hibernate or migrate.
    - to affect significantly the local distribution or abundance of the species.
- Damage or destruction of a breeding site or resting place; or

- Keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

Bats are afforded the following additional protection through the Wildlife Countryside Act 1981 (as amended) as they are included on Schedule 5:

- Intentional or reckless disturbance (at any level);
- Intentional or reckless obstruction of access to any place of shelter or protection; or
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

Effects of legislation on the proposed works

A European Protected Species Mitigation (EPSM) Licence issued by Natural Resources Wales will be required for works liable to affect a bat roost or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, and rear young). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Birds

With certain exceptions, all birds, their nests and eggs are protected under Sections 1-8 of the Wildlife and Countryside Act 1981 (as amended). Among other things, this makes it an offence to:

- Intentionally kill, injure or take any wild bird;
- Intentionally take, damage or destroy the nest of any wild bird while it is in use or being built;
- Intentionally take or destroy an egg of any wild bird; or
- Sell, offer or expose for sale, have in their possession or transport for the purpose of sale any wild bird (dead or alive) or bird egg or part thereof.

Certain species of bird, for example the barn owl, bittern and kingfisher receive additional protection under Schedule 1 of the Wildlife and Countryside Act and are commonly referred to as "Schedule 1" birds. This affords them protection against:

- Intentional or reckless disturbance while it is building a nest or is in, on or near a nest containing eggs or young; or
- Intentional or reckless disturbance of dependent young of such a bird.

Effects of legislation on the proposed works

Works should be planned to avoid the possibility of killing or injuring any wild bird, or of damaging or destroying their nests. The most effective way to reduce the likelihood of nest destruction in particular is to undertake work outside the main bird nesting season which typically runs from March to August. Where this is not feasible, it will be necessary to have any areas of suitable habitat thoroughly checked for nests immediately prior to vegetation clearance.

Schedule 1 birds are additionally protected against disturbance during the nesting season. Thus, it will be necessary to ensure that no potentially disturbing works are undertaken in the vicinity of the nest. The most effective way to avoid disturbance is to postpone works until the young have fledged. If this is not feasible, it may be possible to maintain an appropriate buffer zone or standoff around the nest.

As a last resort, the relevant countryside agency (e.g. Natural Resources Wales) can grant a licence in certain circumstances or for certain problems. Licences are available for disturbing or harming birds for a limited number of reasons that include:

- Preserve public health and safety;
- Preserve air safety;
- Do work for science, education or research;
- Prevent damage to crops or animal feed;
- Conserve plants and animals (including other wild birds);
- Prevent damage to fisheries; and
- Take part in photography, falconry, keeping or breeding birds.

Otters

Otters *Lutra lutra* are fully protected under the Habitats Regulations 2017 (as amended) as they are listed on Schedule 2 which prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species;
- Damage or destruction of a breeding site or resting place;
- To affect significantly the local distribution or abundance of the species; or
- Keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

Otters are afforded additional protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under this Act, they are additionally protected from:

- Intentional or reckless disturbance while in their place of shelter (at any level);
- Intentional or reckless obstruction of access to any place of shelter or protection; or
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

Effects of legislation on the Proposed Scheme

An EPSM Licence issued by Natural Resources Wales will be required for works liable to affect otter breeding or resting places (often referred to as holts, couches or dens) or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, and rear young). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Badger

Badger *Meles meles* are fully protected under the Protection of Badgers Act 1992 which makes it an offence to:

- Wilfully kill, injure or take a badger (or attempt to do so);
- Cruelly ill-treat a badger;
- Bait or dig for a badger;
- Intentionally or recklessly damage or destroy a badger sett, or obstruct access to it;
- Cause a dog to enter a badger sett;
- Disturb a badger when it is occupying a sett;

- Have or sell a badger, or offer a live badger for sale;
- Have or possess a dead badger or parts of a badger (if you obtained it illegally); or
- Mark or attach a marking device to a badger.

Effects of legislation on the Proposed Scheme

A Licence issued by the Natural Resources Wales will be required for works liable to affect badger if it is not possible to avoid disturbing badgers or damaging or blocking access to a sett. The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Great crested newt

Great crested newt *Triturus cristatus* are fully protected under the Habitats Regulations 2017 (as amended) as they are listed on Schedule 2 which makes it an offence to:

- Intentionally capture, kill or injure a great crested newt;
- Deliberate disturbance of any species as:
    - to impair their ability:
        - to survive, breed, or reproduce, or to rear or nurture young; or
        - in the case of animals of a hibernating or migratory species, to hibernate or migrate.
    - to affect significantly the local distribution or abundance of the species;
- Deliberate taking or destroying of the eggs of great crested newts;
- Damage or destruction of a breeding site or resting place; or
- Keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

Great crested newts are afforded additional legal protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to:

- Intentional or reckless disturbance (at any level);
- Intentional or reckless obstruction of access to any place of shelter or protection; or
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

Effects of legislation on the Proposed Scheme

An EPSM Licence issued by Natural Resources Wales will be required for works liable to affect great crested newts, their breeding site or resting places, or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, and rear young). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Reptiles

Sand lizard *Lacerta agilis* and smooth snake *Coronella austriaca* are fully protected under the Habitats Regulations 2017 (as amended) as they are listed on Schedule 2 which makes it an offence to:

- Intentionally capture, kill or injure a Schedule 2 species;

- Deliberate disturbance of any species as:
    - to impair their ability:
        - to survive, breed, or reproduce, or to rear or nurture young; or
        - in the case of animals of a hibernating or migratory species, to hibernate or migrate.
    - to affect significantly the local distribution or abundance of the species;
- Deliberate taking or destroying of the eggs;
- Damage or destruction of a breeding site or resting place; or
- Keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

Other native reptile species are afforded legal protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This includes the adder *Vipera berus*, grass snake *Natrix natrix*, common lizard *Zootoca vivipara* and slow-worm *Anguis fragilis*. The Wildlife and Countryside Act makes it an offence to:

- Intentionally kill or injure these species; or
- Sell, offer or expose for sale, possess or transport for purpose of sale these species, or any part thereof.

Effects of legislation on the Proposed Scheme

Although not licensable, appropriate mitigation measures may also be required to prevent the intentional killing or injury of adder, grass snake, common lizard and slow-worm, thus avoiding contravention of the Wildlife and Countryside Act 1981 (as amended).

Water voles

Water voles are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). It is an offence to:

- Intentionally kill, injure or take a water vole;
- Possess or control any live or dead water vole, or any part or derivative;
- Intentionally or recklessly damage or destroy a water vole's place of shelter or protection;
- Intentionally or recklessly disturb a water vole whilst it is occupying a structure or place which it uses for shelter or protection;
- Intentionally or recklessly obstruct access to a water vole's place of shelter or protection;
- Sell, offer or expose for sale, possess or transport for the purpose of sale, any live or dead water vole, or any part or derivative, or advertise any of these for buying or selling.
- Continue with any planned work after discovery of water voles and or their burrows on site.

Effects of legislation on the Proposed Scheme

A wildlife licence issued by Natural Resources Wales will be required for works liable to affect water vole breeding, places of shelter or protection (network of active burrows and/or nests that have been constructed within the burrow system or above ground amongst dense vegetation) or for operations likely to result in a level of disturbance which might impair their

ability to undertake those activities mentioned above (e.g. survive, breed, and rear young). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.
The trapping and displacement of water voles needs to be carried out under a licence issued by Natural Resources Wales. In Wales there is no provision for licensing development or other construction activities under the Wildlife and Countryside Act. Such works should therefore be carried out under a conservation licence (CL31), which requires the applicant to demonstrate a conservation benefit for water voles.

Hazel dormouse

Hazel dormice are fully protected under the Habitats Regulations 2017 (as amended) and under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). It is an offense to intentionally capture, kill or injure a dormouse to damage or destroy a dormouse resting place or breeding site and to disturb a hazel dormouse while it's in a structure or place of shelter or protection.

Effects of legislation on the Proposed Scheme

An EPSM Licence issued by Natural Resources Wales will be required for works liable to affect hazel dormice. The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Wild Mammals (Protection Act) 1996

All wild mammals are protected against intentional acts of cruelty under the above legislation. This makes it an offence to mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

To avoid possible contravention, due care and attention should be taken when carrying out works (for example operations near burrows or nests) with the potential to affect any wild mammal in this way, regardless of whether they are legally protected through other conservation legislation or not.

Legislation Afforded to Plants

With certain exceptions, all wild plants are protected under the Wildlife and Countryside Act 1981 (as amended). This makes it an offence for an 'unauthorised' person to intentionally (or recklessly in Scotland) uproot wild plants. An authorised person can be the owner of the land on which the action is taken, or anybody authorised by them.

Certain rare species of plant, for example some species of orchid, are also fully protected under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended).

In addition to the UK legislation outlined above, several plant species are fully protected under Schedule 5 of the Habitats Regulations 2017 (as amended). These are species of European importance.

Species of Principal Importance (SPI)

Species of Principal Importance (SPIs) are those considered to be of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales. A national list of these (sometimes referred to as 'priority species') has been prepared under Section 7 of the Environment (Wales) Act 2016. As per HPIs, Section 7 species do not receive statutory protection (unless protected under other legislation) but may be a material consideration when determining applications for consents.

Invasive non-native species

Part II of Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), and Part 2 of Schedule 2 of the Invasive Alien Species (Enforcement and Permitting) Order 2019, list invasive non-native plant species for which it is a criminal offence in England and Wales to plant or cause to grow in the wild due to their impact on native wildlife. Species listed under the Wildlife and Countryside Act 1981 (as amended) include Japanese knotweed and various cotoneaster species including wall spray cotoneaster. Species listed under the Invasive Alien Species (Enforcement and Permitting) Order 2019 include Himalayan balsam *Impatiens glandulifera*, giant hogweed *Heracleum mantegazzianum,* floating pennywort *Hydrocotyle ranunculoides*.

Part I of Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), and Part 1 of Schedule 2 of the Invasive Alien Species (Enforcement and Permitting) Order 2019, list invasive non-native species of animal for which it is a criminal offence in England and Wales to release or allow to escape into the wild due to their impact on native wildlife.

Species that have previously been listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), but that which are now listed under Schedule 2 of the Invasive Alien Species (Enforcement and Permitting) Order 2019, have been removed from the WCA 1981 Schedule 9.

Effects of legislation on the Proposed Scheme

It is not an offence for plants listed in Part II of Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) or Part 2 of Schedule 2 of the Invasive Alien Species (Enforcement and Permitting) Order 2019, to be present on the development site; however, it is an offence to cause them to spread. Therefore, if any of the species are present on site and construction activities may result in further spread (e.g. earthworks, vehicle movements) then it will be necessary to design and implement appropriate mitigation prior to construction commencing.

Injurious weeds

Under the Weeds Act 1959 any land owner or occupier may be required prevent the spread of certain 'injurious weeds' such as spear thistle *Cirsium vulgare*, creeping thistle *Cirsium arvense*, curled dock *Rumex crispus*, broad-leaved dock *Rumex obtusifolius* and common ragwort *Senecio jacobaea*. It is a criminal offence to fail to comply with a notice requiring such action to be taken. The Ragwort Control Act 2003 establishes a ragwort control code of practice as common ragwort is poisonous to horses and other livestock. This code provides best practice guidelines and is not legally binding.